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FEDERAL REGISTER

Vol. 82 Thursday,
No. 3 January 5, 2017

Pages 1139–1592

OFFICE OF THE FEDERAL REGISTER

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Presidential Documents

Title 3—

The President

Proclamation 9558 of December 28, 2016

Establishment of the Bears Ears National Monument

By the President of the United States of America

A Proclamation

Rising from the center of the southeastern Utah landscape and visible from every direction are twin buttes so distinctive that in each of the native languages of the region their name is the same: Hoon'Naqvut, Shash Jáa, Kwiyagatu Nukavachi, Ansh An Lashokdiwe, or ''Bears Ears.'' For hundreds of generations, native peoples lived in the surrounding deep sandstone canyons, desert mesas, and meadow mountaintops, which constitute one of the densest and most significant cultural landscapes in the United States. Abundant rock art, ancient cliff dwellings, ceremonial sites, and countless other artifacts provide an extraordinary archaeological and cultural record that is important to us all, but most notably the land is profoundly sacred to many Native American tribes, including the Ute Mountain Ute Tribe, Navajo Nation, Ute Indian Tribe of the Uintah Ouray, Hopi Nation, and Zuni Tribe.

The area's human history is as vibrant and diverse as the ruggedly beautiful landscape. From the earliest occupation, native peoples left traces of their presence. Clovis people hunted among the cliffs and canyons of Cedar Mesa as early as 13,000 years ago, leaving behind tools and projectile points in places like the Lime Ridge Clovis Site, one of the oldest known archaeological sites in Utah. Archaeologists believe that these early people hunted mammoths, ground sloths, and other now-extinct megafauna, a narrative echoed by native creation stories. Hunters and gatherers continued to live in this region in the Archaic Period, with sites dating as far back as 8,500 years ago.

Ancestral Puebloans followed, beginning to occupy the area at least 2,500 years ago, leaving behind items from their daily life such as baskets, pottery, and weapons. These early farmers of Basketmaker II and III and builders of Pueblo I, II, and III left their marks on the land. The remains of single family dwellings, granaries, kivas, towers, and large villages and roads linking them together reveal a complex cultural history. ''Moki steps,'' hand and toe holds carved into steep canyon walls by the Ancestral Puebloans, illustrate the early people's ingenuity and perseverance and are still used today to access dwellings along cliff walls. Other, distinct cultures have thrived here as well—the Fremont People, Numic- and Athabaskan-speaking hunter-gatherers, and Utes and Navajos. Resources such as the Doll House Ruin in Dark Canyon Wilderness Area and the Moon House Ruin on Cedar Mesa allow visitors to marvel at artistry and architecture that have withstood thousands of seasons in this harsh climate.

The landscape is a milieu of the accessible and observable together with the inaccessible and hidden. The area's petroglyphs and pictographs capture the imagination with images dating back at least 5,000 years and spanning a range of styles and traditions. From life-size ghostlike figures that defy categorization, to the more literal depictions of bighorn sheep, birds, and lizards, these drawings enable us to feel the humanity of these ancient artists. The Indian Creek area contains spectacular rock art, including hundreds of petroglyphs at Newspaper Rock. Visitors to Bears Ears can also discover more recent rock art left by the Ute, Navajo, and Paiute peoples.

It is also the less visible sites, however—those that supported the food gathering, subsistence and ceremony of daily life—that tell the story of the people who lived here. Historic remnants of Native American sheep-herding and farming are scattered throughout the area, and pottery and Navajo hogans record the lifeways of native peoples in the 19th and 20th centuries.

For thousands of years, humans have occupied and stewarded this land. With respect to most of these people, their contribution to the historical record is unknown, but some have played a more public role. Famed Navajo headman K'aayélii was born around 1800 near the twin Bears Ears buttes. His band used the area's remote canyons to elude capture by the U.S. Army and avoid the fate that befell many other Navajo bands: surrender, the Long Walk, and forced relocation to Bosque Redondo. Another renowned 19th century Navajo leader, ''Hastiin Ch'ihaajin'' Manuelito, was also born near the Bears Ears.

The area's cultural importance to Native American tribes continues to this day. As they have for generations, these tribes and their members come here for ceremonies and to visit sacred sites. Throughout the region, many landscape features, such as Comb Ridge, the San Juan River, and Cedar Mesa, are closely tied to native stories of creation, danger, protection, and healing. The towering spires in the Valley of the Gods are sacred to the Navajo, representing ancient Navajo warriors frozen in stone. Traditions of hunting, fishing, gathering, and wood cutting are still practiced by tribal members, as is collection of medicinal and ceremonial plants, edible herbs, and materials for crafting items like baskets and footwear. The traditional ecological knowledge amassed by the Native Americans whose ancestors inhabited this region, passed down from generation to generation, offers critical insight into the historic and scientific significance of the area. Such knowledge is, itself, a resource to be protected and used in understanding and managing this landscape sustainably for generations to come.

Euro-Americans first explored the Bears Ears area during the 18th century, and Mormon settlers followed in the late 19th century. The San Juan Mission expedition traversed this rugged country in 1880 on their journey to establish a new settlement in what is now Bluff, Utah. To ease the passage of wagons over the slick rock slopes and through the canyonlands, the settlers smoothed sections of the rock surface and constructed dugways and other features still visible along their route, known as the Hole-in-the-Rock Trail. Cabins, corrals, trails, and carved inscriptions in the rock reveal the lives of ranchers, prospectors, and early archaeologists. Cattle rustlers and other outlaws created a convoluted trail network known as the Outlaw Trail, said to be used by Butch Cassidy and the Sundance Kid. These outlaws took advantage of the area's network of canyons, including the aptly-named Hideout Canyon, to avoid detection.

The area's stunning geology, from sharp pinnacles to broad mesas, labyrinthine canyons to solitary hoodoos, and verdant hanging gardens to bare stone arches and natural bridges, provides vital insights to geologists. In the east, the Abajo Mountains tower, reaching elevations of more than 11,000 feet. A long geologic history is documented in the colorful rock layers visible in the area's canyons.

For long periods over 300 million years ago, these lands were inundated by tropical seas and hosted thriving coral reefs. These seas infused the area's black rock shale with salts as they receded. Later, the lands were bucked upwards multiple times by the Monument Upwarp, and near-volcanoes punched up through the rock, leaving their marks on the landscape without reaching the surface. In the sandstone of Cedar Mesa, fossil evidence has revealed large, mammal-like reptiles that burrowed into the sand to survive the blistering heat of the end of the Permian Period, when the region was dominated by a seaside desert. Later, in the Late Triassic Period more than 200 million years ago, seasonal monsoons flooded an ancient river system that fed a vast desert here.

The paleontological resources in the Bears Ears area are among the richest and most significant in the United States, and protection of this area will provide important opportunities for further archaeological and paleontological study. Many sites, such as Arch Canyon, are teeming with fossils, and research conducted in the Bears Ears area is revealing new insights into the transition of vertebrate life from reptiles to mammals and from sea to land. Numerous ray-finned fish fossils from the Permian Period have been discovered, along with other late Paleozoic Era fossils, including giant amphibians, synapsid reptiles, and important plant fossils. Fossilized traces of marine and aquatic creatures such as clams, crayfish, fish, and aquatic reptiles have been found in Indian Creek's Chinle Formation, dating to the Triassic Period, and phytosaur and dinosaur fossils from the same period have been found along Comb Ridge. Paleontologists have identified new species of plant-eating crocodile-like reptiles and mass graves of lumbering sauropods, along with metoposaurus, crocodiles, and other dinosaur fossils. Fossilized trackways of early tetrapods can be seen in the Valley of the Gods and in Indian Creek, where paleontologists have also discovered exceptional examples of fossilized ferns, horsetails, and cycads. The Chinle Formation and the Wingate, Kayenta, and Navajo Formations above it provide one of the best continuous rock records of the Triassic-Jurassic transition in the world, crucial to understanding how dinosaurs dominated terrestrial ecosystems and how our mammalian ancestors evolved. In Pleistocene Epoch sediments, scientists have found traces of mammoths, short-faced bears, ground sloths, primates, and camels.

From earth to sky, the region is unsurpassed in wonders. The star-filled nights and natural quiet of the Bears Ears area transport visitors to an earlier eon. Against an absolutely black night sky, our galaxy and others more distant leap into view. As one of the most intact and least roaded areas in the contiguous United States, Bears Ears has that rare and arresting quality of deafening silence.

Communities have depended on the resources of the region for hundreds of generations. Understanding the important role of the green highlands in providing habitat for subsistence plants and animals, as well as capturing and filtering water from passing storms, the Navajo refer to such places as ''Nahodishgish,'' or places to be left alone. Local communities seeking to protect the mountains for their watershed values have long recognized the importance of the Bears Ears' headwaters. Wildfires, both natural and human-set, have shaped and maintained forests and grasslands of this area for millennia. Ranchers have relied on the forests and grasslands of the region for ages, and hunters come from across the globe for a chance at a bull elk or other big game. Today, ecological restoration through the careful use of wildfire and management of grazing and timber is working to restore and maintain the health of these vital watersheds and grasslands.

The diversity of the soils and microenvironments in the Bears Ears area provide habitat for a wide variety of vegetation. The highest elevations, in the Elk Ridge area of the Manti-La Sal National Forest, contain pockets of ancient Engelmann spruce, ponderosa pine, aspen, and subalpine fir. Mesa tops include pinyon-juniper woodlands along with big sagebrush, low sage, blackbrush, rabbitbrush, bitterbrush, four-wing saltbush, shadscale, winterfat, Utah serviceberry, western chokecherry, hackberry, barberry, cliff rose, and greasewood. Canyons contain diverse vegetation ranging from yucca and cacti such as prickly pear, claret cup, and Whipple's fishhook to mountain mahogany, ponderosa pine, alder, sagebrush, birch, dogwood, and Gambel's oak, along with occasional stands of aspen. Grasses and herbaceous species such as bluegrass, bluestem, giant ryegrass, ricegrass, needle and thread, yarrow, common mallow, balsamroot, low larkspur, horsetail, and peppergrass also grow here, as well as pinnate spring parsley, Navajo penstemon, Canyonlands lomatium, and the Abajo daisy.

Tucked into winding canyons are vibrant riparian communities characterized by Fremont cottonwood, western sandbar willow, yellow willow, and box

elder. Numerous seeps provide year-round water and support delicate hanging gardens, moisture-loving plants, and relict species such as Douglas fir. A few populations of the rare Kachina daisy, endemic to the Colorado Plateau, hide in shaded seeps and alcoves of the area's canyons. A genetically distinct population of Kachina daisy was also found on Elk Ridge. The alcove columbine and cave primrose, also regionally endemic, grow in seeps and hanging gardens in the Bears Ears landscape. Wildflowers such as beardtongue, evening primrose, aster, Indian paintbrush, yellow and purple beeflower, straight bladderpod, Durango tumble mustard, scarlet gilia, globe mallow, sand verbena, sego lily, cliffrose, sacred datura, monkey flower, sunflower, prince's plume, hedgehog cactus, and columbine, bring bursts of color to the landscape.

The diverse vegetation and topography of the Bears Ears area, in turn, support a variety of wildlife species. Mule deer and elk range on the mesas and near canyon heads, which provide crucial habitat for both species. The Cedar Mesa landscape is home to bighorn sheep which were once abundant but still live in Indian Creek, and in the canyons north of the San Juan River. Small mammals such as desert cottontail, black-tailed jackrabbit, prairie dog, Botta's pocket gopher, white-tailed antelope squirrel, Colorado chipmunk, canyon mouse, deer mouse, pinyon mouse, and desert woodrat, as well as Utah's only population of Abert's tassel-eared squirrels, find shelter and sustenance in the landscape's canyons and uplands. Rare shrews, including a variant of Merriam's shrew and the dwarf shrew can be found in this area.

Carnivores, including badger, coyote, striped skunk, ringtail, gray fox, bobcat, and the occasional mountain lion, all hunt here, while porcupines use their sharp quills and climbing abilities to escape these predators. Oral histories from the Ute describe the historic presence of bison, antelope, and abundant bighorn sheep, which are also depicted in ancient rock art. Black bear pass through the area but are rarely seen, though they are common in the oral histories and legends of this region, including those of the Navajo.

Consistent sources of water in a dry landscape draw diverse wildlife species to the area's riparian habitats, including an array of amphibian species such as tiger salamander, red-spotted toad, Woodhouse's toad, canyon tree frog, Great Basin spadefoot, and northern leopard frog. Even the most sharp-eyed visitors probably will not catch a glimpse of the secretive Utah night lizard. Other reptiles in the area include the sagebrush lizard, eastern fence lizard, tree lizard, side-blotched lizard, plateau striped whiptail, western rattlesnake, night snake, striped whipsnake, and gopher snake.

Raptors such as the golden eagle, peregrine falcon, bald eagle, northern harrier, northern goshawk, red-tailed hawk, ferruginous hawk, American kestrel, flammulated owl, and great horned owl hunt their prey on the mesa tops with deadly speed and accuracy. The largest contiguous critical habitat for the threatened Mexican spotted owl is on the Manti-La Sal National Forest. Other bird species found in the area include Merriam's turkey, Williamson's sapsucker, common nighthawk, white-throated swift, ash-throated flycatcher, violet-green swallow, cliff swallow, mourning dove, pinyon jay, sagebrush sparrow, canyon towhee, rock wren, sage thrasher, and the endangered southwestern willow flycatcher.

As the skies darken in the evenings, visitors may catch a glimpse of some the area's at least 15 species of bats, including the big free-tailed bat, pallid bat, Townsend's big-eared bat, spotted bat, and silver-haired bat. Tinajas, rock depressions filled with rainwater, provide habitat for many specialized aquatic species, including pothole beetles and freshwater shrimp. *Eucosma navajoensis*, an endemic moth that has only been described near Valley of the Gods, is unique to this area.

Protection of the Bears Ears area will preserve its cultural, prehistoric, and historic legacy and maintain its diverse array of natural and scientific resources, ensuring that the prehistoric, historic, and scientific values of this

area remain for the benefit of all Americans. The Bears Ears area has been proposed for protection by members of Congress, Secretaries of the Interior, State and tribal leaders, and local conservationists for at least 80 years. The area contains numerous objects of historic and of scientific interest, and it provides world class outdoor recreation opportunities, including rock climbing, hunting, hiking, backpacking, canyoneering, whitewater rafting, mountain biking, and horseback riding. Because visitors travel from near and far, these lands support a growing travel and tourism sector that is a source of economic opportunity for the region.

WHEREAS, section 320301 of title 54, United States Code (known as the ''Antiquities Act''), authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Federal Government to be national monuments, and to reserve as a part thereof parcels of land, the limits of which shall be confined to the smallest area compatible with the proper care and management of the objects to be protected;

WHEREAS, it is in the public interest to preserve the objects of scientific and historic interest on the Bears Ears lands;

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by the authority vested in me by section 320301 of title 54, United States Code, hereby proclaim the objects identified above that are situated upon lands and interests in lands owned or controlled by the Federal Government to be the Bears Ears National Monument (monument) and, for the purpose of protecting those objects, reserve as part thereof all lands and interests in lands owned or controlled by the Federal Government within the boundaries described on the accompanying map, which is attached to and forms a part of this proclamation. These reserved Federal lands and interests in lands encompass approximately 1.35 million acres. The boundaries described on the accompanying map are confined to the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of the monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, or other disposition under the public land laws or laws applicable to the U.S. Forest Service, from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument.

The establishment of the monument is subject to valid existing rights, including valid existing water rights. If the Federal Government acquires ownership or control of any lands or interests in lands that it did not previously own or control within the boundaries described on the accompanying map, such lands and interests in lands shall be reserved as a part of the monument, and objects identified above that are situated upon those lands and interests in lands shall be part of the monument, upon acquisition of ownership or control by the Federal Government.

The Secretary of Agriculture and the Secretary of the Interior (Secretaries) shall manage the monument through the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM), pursuant to their respective applicable legal authorities, to implement the purposes of this proclamation. The USFS shall manage that portion of the monument within the boundaries of the National Forest System (NFS), and the BLM shall manage the remainder of the monument. The lands administered by the USFS shall be managed as part of the Manti-La Sal National Forest. The lands administered by the BLM shall be managed as a unit of the National Landscape Conservation System, pursuant to applicable legal authorities.

For purposes of protecting and restoring the objects identified above, the Secretaries shall jointly prepare a management plan for the monument and

shall promulgate such regulations for its management as they deem appropriate. The Secretaries, through the USFS and the BLM, shall consult with other Federal land management agencies in the local area, including the National Park Service, in developing the management plan. In promulgating any management rules and regulations governing the NFS lands within the monument and developing the management plan, the Secretary of Agriculture, through the USFS, shall consult with the Secretary of the Interior through the BLM. The Secretaries shall provide for maximum public involvement in the development of that plan including, but not limited to, consultation with federally recognized tribes and State and local governments. In the development and implementation of the management plan, the Secretaries shall maximize opportunities, pursuant to applicable legal authorities, for shared resources, operational efficiency, and cooperation.

The Secretaries, through the BLM and USFS, shall establish an advisory committee under the Federal Advisory Committee Act (5 U.S.C. App.) to provide information and advice regarding the development of the management plan and, as appropriate, management of the monument. This advisory committee shall consist of a fair and balanced representation of interested stakeholders, including State and local governments, tribes, recreational users, local business owners, and private landowners.

In recognition of the importance of tribal participation to the care and management of the objects identified above, and to ensure that management decisions affecting the monument reflect tribal expertise and traditional and historical knowledge, a Bears Ears Commission (Commission) is hereby established to provide guidance and recommendations on the development and implementation of management plans and on management of the monument. The Commission shall consist of one elected officer each from the Hopi Nation, Navajo Nation, Ute Mountain Ute Tribe, Ute Indian Tribe of the Uintah Ouray, and Zuni Tribe, designated by the officers' respective tribes. The Commission may adopt such procedures as it deems necessary to govern its activities, so that it may effectively partner with the Federal agencies by making continuing contributions to inform decisions regarding the management of the monument.

The Secretaries shall meaningfully engage the Commission or, should the Commission no longer exist, the tribal governments through some other entity composed of elected tribal government officers (comparable entity), in the development of the management plan and to inform subsequent management of the monument. To that end, in developing or revising the management plan, the Secretaries shall carefully and fully consider integrating the traditional and historical knowledge and special expertise of the Commission or comparable entity. If the Secretaries decide not to incorporate specific recommendations submitted to them in writing by the Commission or comparable entity, they will provide the Commission or comparable entity with a written explanation of their reasoning. The management plan shall also set forth parameters for continued meaningful engagement with the Commission or comparable entity in implementation of the management plan.

To further the protective purposes of the monument, the Secretary of the Interior shall explore entering into a memorandum of understanding with the State that would set forth terms, pursuant to applicable laws and regulations, for an exchange of land currently owned by the State of Utah and administered by the Utah School and Institutional Trust Lands Administration within the boundary of the monument for land of approximately equal value managed by the BLM outside the boundary of the monument. The Secretary of the Interior shall report to the President by January 19, 2017, regarding the potential for such an exchange.

Nothing in this proclamation shall be construed to interfere with the operation or maintenance, or the replacement or modification within the current authorization boundary, of existing utility, pipeline, or telecommunications

facilities located within the monument in a manner consistent with the care and management of the objects identified above.

Nothing in this proclamation shall be deemed to enlarge or diminish the rights or jurisdiction of any Indian tribe. The Secretaries shall, to the maximum extent permitted by law and in consultation with Indian tribes, ensure the protection of Indian sacred sites and traditional cultural properties in the monument and provide access by members of Indian tribes for traditional cultural and customary uses, consistent with the American Indian Religious Freedom Act (42 U.S.C. 1996) and Executive Order 13007 of May 24, 1996 (Indian Sacred Sites), including collection of medicines, berries and other vegetation, forest products, and firewood for personal noncommercial use in a manner consistent with the care and management of the objects identified above.

For purposes of protecting and restoring the objects identified above, the Secretaries shall prepare a transportation plan that designates the roads and trails where motorized and non-motorized mechanized vehicle use will be allowed. Except for emergency or authorized administrative purposes, motorized and non-motorized mechanized vehicle use shall be allowed only on roads and trails designated for such use, consistent with the care and management of such objects. Any additional roads or trails designated for motorized vehicle use must be for the purposes of public safety or protection of such objects.

Laws, regulations, and policies followed by USFS or BLM in issuing and administering grazing permits or leases on lands under their jurisdiction shall continue to apply with regard to the lands in the monument to ensure the ongoing consistency with the care and management of the objects identified above.

Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of Utah, including its jurisdiction and authority with respect to fish and wildlife management.

Nothing in this proclamation shall preclude low-level overflights of military aircraft, the designation of new units of special use airspace, or the use or establishment of military flight training routes over the lands reserved by this proclamation consistent with the care and management of the objects identified above.

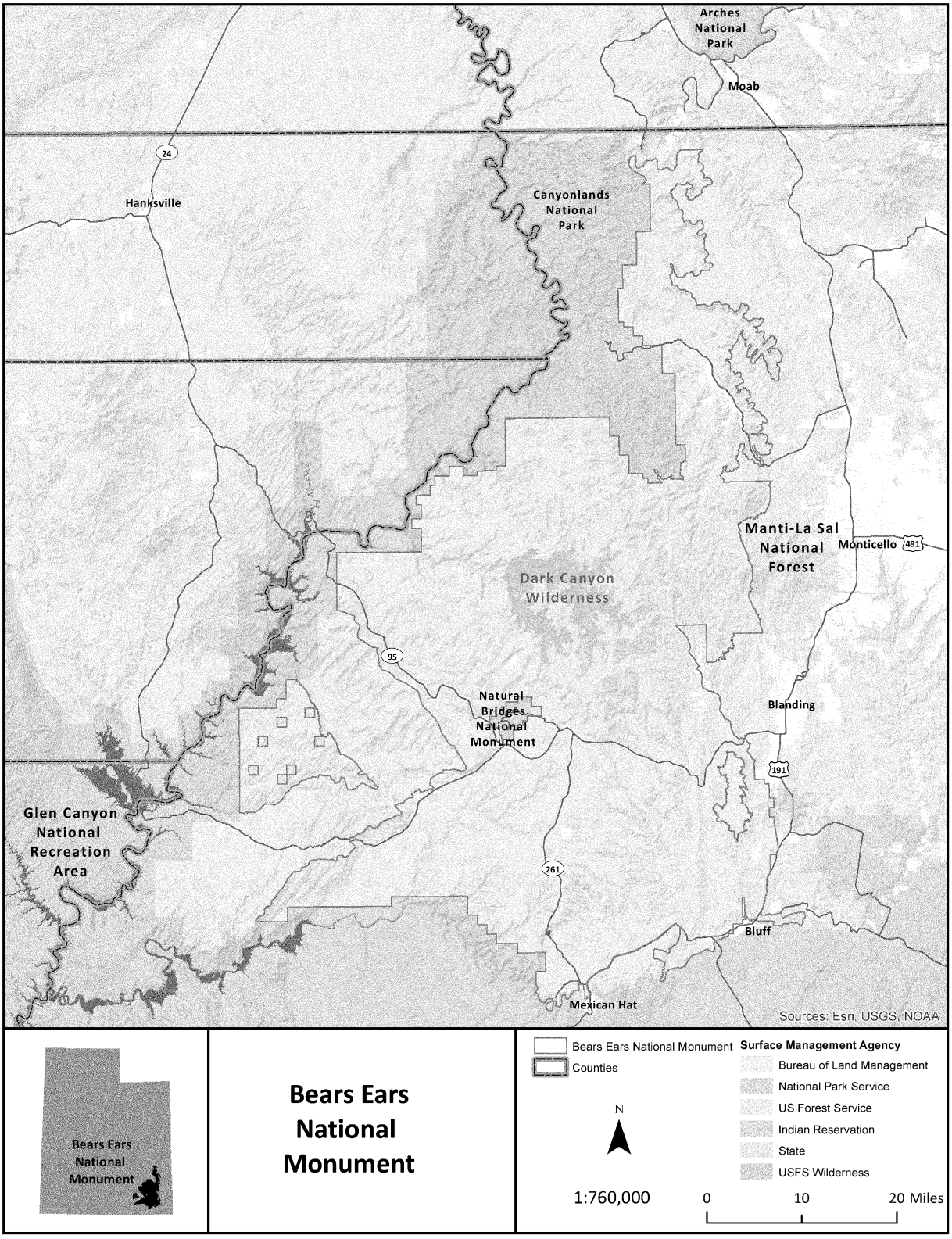
Nothing in this proclamation shall be construed to alter the authority or responsibility of any party with respect to emergency response activities within the monument, including wildland fire response.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of the monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-eighth day of December, in the year of our Lord two thousand sixteen, and of the Independence of the United States of America the two hundred and forty-first.

Billing code 3295–F7–P



[FR Doc. 2017–00038

Filed 1–4–17; 8:45 am]

Billing code 4310–10–C

Presidential Documents

Proclamation 9559 of December 28, 2016

Establishment of the Gold Butte National Monument

By the President of the United States of America

A Proclamation

In southeast Nevada lies a landscape of contrast and transition, where dramatically chiseled red sandstone, twisting canyons, and tree-clad mountains punctuate flat stretches of the Mojave Desert. This remote and rugged desert landscape is known as Gold Butte.

The Gold Butte area contains an extraordinary variety of diverse and irreplaceable scientific, historic, and prehistoric resources, including vital plant and wildlife habitat, significant geological formations, rare fossils, important sites from the history of Native Americans, and remnants of our Western mining and ranching heritage. The landscape reveals a story of thousands of years of human interaction with this harsh environment and provides a rare glimpse into the lives of Nevada's first inhabitants, the rich and varied indigenous cultures that followed, and the eventual arrival of Euro-American settlers. Canyons and intricate rock formations are a stunning backdrop to the area's famously beautiful rock art, and the desert provides critical habitat for the threatened Mojave desert tortoise.

Gold Butte's dynamic environment has provided food and shelter to humans for at least 12,000 years. Remnants of massive agave roasting pits, charred remains of goosefoot and pinyon pine nuts, bone fragments, and projectile points used to hunt big horn sheep and smaller game serve as evidence of the remarkable abilities of indigenous communities to eke out sustenance from this unforgiving landscape. Visitors to Gold Butte can still see ancient rock shelters and hearth remnants concealed in the area's dramatic Aztec Sandstone formations. This brightly hued sandstone is the canvas for the area's spectacular array of rock art, depicting human figures, animals, and swirling abstract designs at locations like the famed Falling Man petroglyph site and Kohta Circus. Pottery sherds and other archaeological artifacts scattered throughout the landscape reveal the area's role as a corridor for the interregional trade of pottery, salt, and rare minerals. These world-renowned archaeological sites and objects are helping scientists to better understand interactions between ancient cultural groups.

By the time Spanish explorers arrived in the region in the late eighteenth century, the Gold Butte area was home to the Southern Paiute people, who to this day, retain a spiritual and cultural connection with the land and use it for traditional purposes such as ceremonies and plant harvesting. Hunters and settlers of European descent followed the explorers, and, by 1865, Mormon pioneers had built settlements in the region.

These newcomers grazed livestock and explored Gold Butte's unique geology in pursuit of mining riches. Their activities left behind historic sites and objects that tell the story of the American West, including the Gold Butte townsite, a mining boomtown established in the early 1900s, but mostly abandoned by 1910. Several building foundations and arrastas—large flat rocks used for crushing ore—remain at the townsite today. Settlers built corrals out of wood or stone, some of which are still standing in the Gold Butte area, including one near the Gold Butte townsite and one at Horse Springs, along the Gold Butte Scenic Byway. In the 1930s, the Civilian Conservation Corps was put to work in the area, leaving behind a variety

of historic features including a dam and remnants of a camp in the Whitney Pockets area, in the northeastern region of Gold Butte.

The Gold Butte landscape that visitors experience today is the product of millions of years of heat and pressure as well as the eroding forces of water and wind that molded this vast and surreal desert terrain. Rising up from the Virgin River to an elevation of almost 8,000 feet, the Virgin Mountains delineate the area's northeast corner and provide a stunning backdrop for the rugged gray and red desert of the lower elevations. Faulted carbonate and silicate rock form the ridges and peaks of this range, which are regularly snow-covered in winter and spring, while the southern region of Gold Butte is laced with a series of wide granitic ridges and narrow canyons. These broad landscape features are dotted with fantastical geologic formations, including vividly hued Aztec Sandstone twisted into other-worldly shapes by wind and water, as well as pale, desolate granitic domes. An actively-expanding 1,200 square-meter sinkhole known as the Devil's Throat has been the subject of multiple scientific studies that have enhanced our understanding of sinkhole formation.

The Gold Butte landscape is a mosaic of braided and shallow washes that flow into the Virgin River to the north and directly into Lake Mead on the south and west. Several natural springs provide important water sources for the plants and animals living here. The arid eastern Mojave Desert landscape that dominates the area is characterized by the creosote bush and white bursage vegetative community that covers large, open expanses scattered with low shrubs. Blackbrush scrub, a slow-growing species that can live up to 400 years, is abundant in middle elevations. Both creosote-bursage and blackbrush scrub vegetation communities can take decades or even centuries to recover from disturbances due to the long-lived nature of the plant species in these vegetative communities and the area's low rainfall. These vegetation communities are impacted by human uses, invasive species, wildfires, and changing climates. Gypsum deposits are a distinctive aspect of the Mojave Desert ecosystem and result in soil that contains physical and chemical properties that stress many plants, but also support endemic and rare species. For example, the sticky ringstem, Las Vegas buckwheat, and Las Vegas bearpoppy are unique plants that rely on gypsum soil; the populations in Gold Butte are some of only a handful of isolated populations of these species left in the world. Other rare plants in Gold Butte include the threecorner milkvetch and sticky wild buckwheat, which are sand-dependent species, as well as the Rosy two-tone beardtongue and the Mokiak milkvetch. Scattered stands of Joshua trees, an emblem of the Mojave Desert, dot the landscape along with Mojave yucca, cacti species, and chaparral species, among others.

The often snowcapped peaks of the Virgin Mountains in the northeastern corner of Gold Butte stand in stark contrast to the desolate desert landscapes found elsewhere in the area. Due to their elevation of almost 8,000 feet, these mountains exhibit a transition between ecosystems in the southwest. At the highest points of the Virgin Mountains, visitors can hike through Ponderosa pine and white fir forests, and visit the southernmost stand of Douglas fir in Nevada. In this area, visitors are also treated to a rare sight: the Silver State's only stand of the Arizona cypress. The lower to middle elevations of the area are home to stands of pinyon pine, Utah juniper, sagebrush, and acacia woodlands, along with occasional mesquite stands. By adding structural complexity to a shrub-dominated landscape, these woodlands provide important breeding, foraging, and resting places for a variety of creatures, including birds and insects, and support a number of plant species.

Gold Butte also provides habitat for a number of wildlife species. It has been designated as critical habitat for the Mojave desert tortoise, which is listed as threatened under the Endangered Species Act. These slow-footed symbols of the American Southwest rely on the creosote-bursage ecosystem that is widespread here. A generally reclusive reptile, the Mojave desert

tortoise uses the protective cover of underground burrows to escape extreme desert conditions and as shelter from predators.

Other amphibians and reptiles also make their homes in Gold Butte. For example, once considered extinct and now a candidate species for listing under the Endangered Species Act, the relict leopard frog has been released into spring sites in the area in a collaborative effort by local, State, and Federal entities to help revive this still very small population. The banded Gila monster, the only venomous lizard in the United States, has also been recorded in Gold Butte. Many other reptile species—including the banded gecko, California kingsnake, desert iguana, desert night lizard, glossy snake, Great Basin collared lizard, Mojave green rattlesnake, sidewinder, Sonoran lyre snake, southern desert horned lizard, speckled rattlesnake, western leaf-nosed snake, western long-nosed snake, and western red-tailed skink—also have populations or potential habitats in the area.

The Gold Butte area serves as an effective corridor between Lake Mead and the Virgin Mountains for large mammals, including desert bighorn sheep and mountain lions. Smaller mammals in Gold Butte include white-tailed antelope squirrel, desert kangaroo rat, and the desert pocket mouse. Several species of bat, including the Pallid bat, Allen's big-eared bat, western pipistrelle bat, and the Brazilian free-tailed bat, are also found here, as well as the northern Mojave blue butterfly.

Bald and golden eagles, red-tailed and Cooper's hawks, peregrine falcons, and white-throated swifts soar above Gold Butte. Closer to the ground, one can spot a variety of birds, including the western burrowing owl, common poorwill, Costa's hummingbird, pinyon jay, Bendire's thrasher, Virginia's warbler, Lucy's warbler, black-chinned sparrow, and gray vireo. Migratory birds, including the Calliope hummingbird, gray flycatcher, sage sparrow, lesser nighthawk, ash-throated flycatcher, and the Brewer's sparrow, also make stop-overs in the area. These birds, and a variety of other avian species, use the diversity of habitats in the area to meet many of their seasonal, migratory, or year-round life cycle needs.

In addition to providing homes to modern species of plants and wildlife, the area shows great potential for continued paleontological research, with resources such as recently discovered dinosaur tracks dating back to the Jurassic Period. These fossil trackways were found in Gold Butte's distinctive Aztec Sandstone and also include prints from squirrel-sized reptilian ancestors of mammals.

The protection of the Gold Butte area will preserve its cultural, prehistoric, and historic legacy and maintain its diverse array of natural and scientific resources, ensuring that the historic and scientific values of this area, and its many objects of historic and of scientific interest, remain for the benefit of all Americans.

WHEREAS, section 320301 of title 54, United States Code (known as the ''Antiquities Act''), authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Federal Government to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected;

WHEREAS, it is in the public interest to preserve the objects of scientific and historic interest on the Gold Butte lands;

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by the authority vested in me by section 320301 of title 54, United States Code, hereby proclaim the objects identified above that are situated upon lands and interests in lands owned or controlled by the Federal Government to be the Gold Butte National Monument (monument) and, for the purpose of protecting those objects, reserve as part thereof

all lands and interests in lands owned or controlled by the Federal Government within the boundaries described on the accompanying map, which is attached to and forms a part of this proclamation. These reserved Federal lands and interests in lands encompass approximately 296,937 acres. The boundaries described on the accompanying map are confined to the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of the monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, or other disposition under the public land laws, from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing.

The establishment of the monument is subject to valid existing rights, including valid existing water rights. If the Federal Government subsequently acquires any lands or interests in lands not owned or controlled by the Federal Government within the boundaries described on the accompanying map, such lands and interests in lands shall be reserved as a part of the monument, and objects identified above that are situated upon those lands and interests in lands shall be part of the monument, upon acquisition of ownership or control by the Federal Government.

The Secretary of the Interior (Secretary) shall manage the monument pursuant to applicable legal authorities, which may include the provisions of section 603 of the Federal Land Policy and Management Act (43 U.S.C. 1782) governing the management of wilderness study areas, to protect the objects identified above. Of the approximately 296,937 acres of Federal lands and interests in lands reserved by this proclamation, approximately 285,158 acres are currently managed by the Secretary through the Bureau of Land Management (BLM) and approximately 11,779 are currently managed by the Secretary through the Bureau of Reclamation (BOR). After issuance of this proclamation, the Secretary shall, consistent with applicable legal authorities, transfer administrative jurisdiction of the BOR lands within the boundaries of the monument to the BLM. The Secretary, through the BLM, shall manage lands within the monument that are subject to the administrative jurisdiction of the BLM as a unit of the National Landscape Conservation System.

For purposes of protecting and restoring the objects identified above, the Secretary, through the BLM, shall prepare and maintain a management plan for the monument and shall provide for maximum public involvement in the development of that plan including, but not limited to, consultation with State, tribal, and local governments.

The Secretary shall establish an advisory committee under the Federal Advisory Committee Act, 5 U.S.C. App., to provide information and advice regarding development of the land use plan and management of the monument.

Except for emergency or authorized administrative purposes, motorized vehicle use in the monument shall be permitted only on roads designated as open to such use as of the date of this proclamation, unless the Secretary decides to reroute roads for public safety purposes or to enhance protection of the objects identified above. Non-motorized mechanized vehicle use shall be permitted only on roads and trails, consistent with the care and management of the objects identified above.

Consistent with the care and management of the objects identified above, nothing in this proclamation shall be construed to preclude the renewal or assignment of, or interfere with the operation, maintenance, replacement, modification, or upgrade within the physical authorization boundary of existing flood control, pipeline, and telecommunications facilities, or other water infrastructure, including wildlife water catchments or water district facilities, that are located within the monument. Except as necessary for the care and management of the objects identified above, no new rights-of-way shall be authorized within the monument.

Nothing in this proclamation shall be deemed to enlarge or diminish the rights or jurisdiction of any Indian tribe. The Secretary shall, to the maximum extent permitted by law and in consultation with Indian tribes, ensure the protection of Indian sacred sites and traditional cultural properties in the monument and provide for access by members of Indian tribes for traditional cultural and customary uses, consistent with the American Indian Religious Freedom Act (42 U.S.C. 1996) and Executive Order 13007 of May 24, 1996 (Indian Sacred Sites).

Livestock grazing has not been permitted in the monument area since 1998 and the Secretary shall not issue any new grazing permits or leases on lands within the monument.

Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of Nevada, including its jurisdiction and authority with respect to fish and wildlife management, including hunting and fishing.

Nothing in this proclamation shall be construed to preclude the traditional tribal collection of seeds, natural materials, salt, or materials for stone tools in the monument for personal noncommercial use consistent with the care and management of the objects identified above.

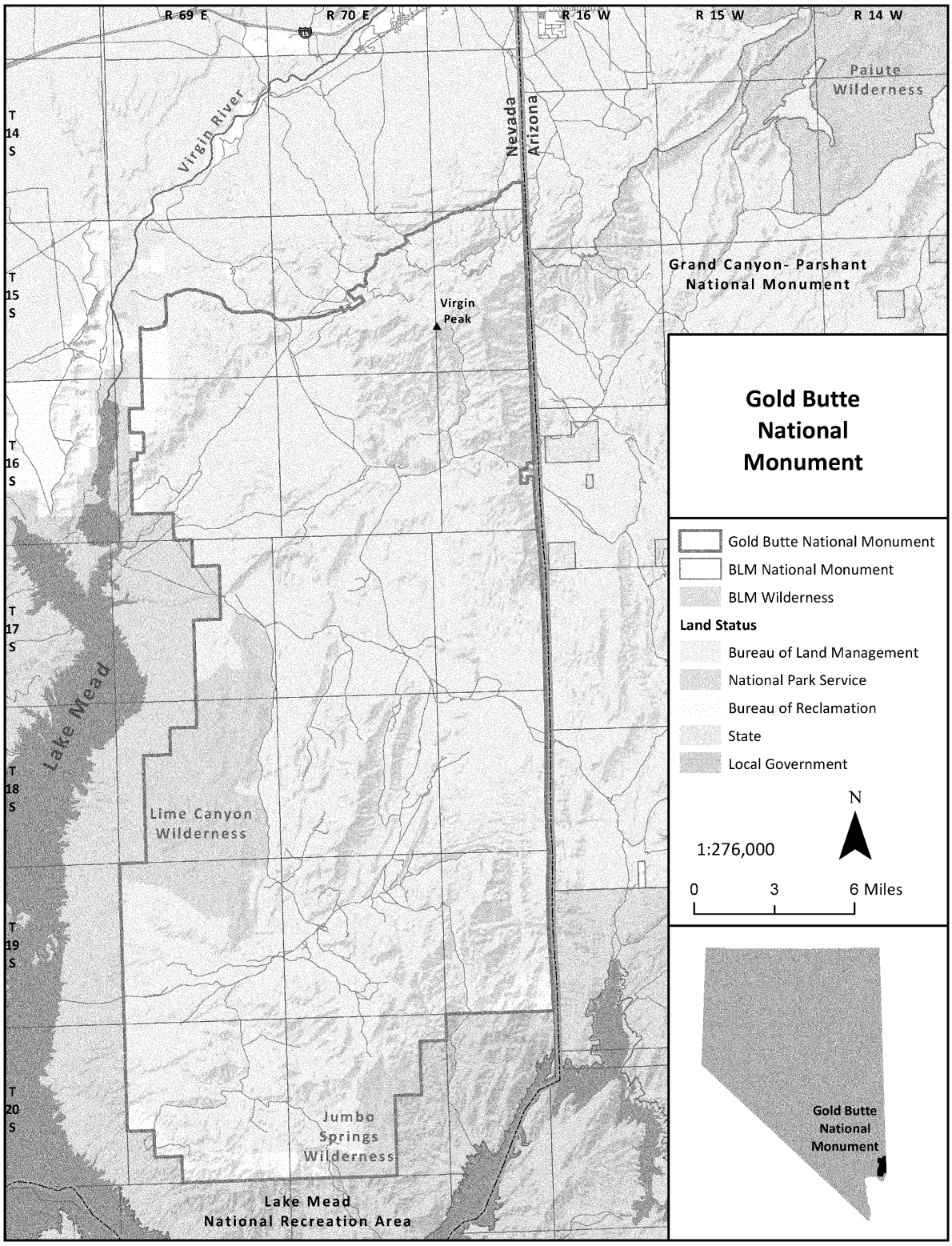
Nothing in this proclamation shall preclude low-level overflights of military aircraft, the designation of new units of special use airspace, or the use or establishment of military flight training routes over the lands reserved by this proclamation consistent with the care and management of the objects identified above. Nothing in this proclamation shall preclude air or ground access to existing or new electronic tracking communications sites associated with the special use airspace and military training routes, consistent with the care and management of such objects.

Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of the monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-eighth day of December, in the year of our Lord two thousand sixteen, and of the Independence of the United States of America the two hundred and forty-first.

Billing code 3295–F7–P



[FR Doc. 2017–00039

Filed 1–4–17; 8:45 am]

Billing code 4310–10–C

Presidential Documents

Proclamation 9560 of December 28, 2016

National Mentoring Month, 2017

By the President of the United States of America

A Proclamation

With every generation, our Nation has expanded the essential idea that no matter who you are or where you come from, America is a place where—with hard work and perseverance—you can make it if you try. Although obstacles and challenges along the way can be discouraging, the mentorship and support of others have always motivated our people to persevere—even in the toughest of times. At the start of each new year, we observe National Mentoring Month to honor the parents, families, teachers, coaches, and mentors who pour their time and their love into lifting up America's daughters and sons.

Nobody succeeds on their own: each young person's strength and resilience is fostered by those who have taught them they can do anything they put their mind to. Whether helping mentees study for a test, learn a new skill, or lift their heads up after a setback, mentors provide them the chance they need to move forward and set their sights even higher. And in helping mentees achieve their goals, mentors can inspire them to reach back and provide the same support to someone else in need of a mentor. To learn how you can mentor others and make a lasting difference, visit www.Serve.gov/Mentor.

In too many communities, many children still have the odds stacked against them, which is why my Administration has striven to increase mentorship opportunities across our country. Among other steps we have taken, we established the My Brother's Keeper initiative, which has inspired private organizations and communities in every State to address opportunity gaps and encourage mentorship as a tool for helping all young people reach their full potential. At the White House, we started our own mentee program and regularly met with local youth to provide leadership and guidance. And our efforts to bring higher education within reach for more Americans and expand apprenticeship initiatives have helped ensure more students can access the educational and career opportunities they need to thrive.

This month, we reflect on the transformative role mentorship can play and acknowledge the many ways that mentors have helped our next generation of leaders and innovators grow. As a Nation, we are stronger when every individual has the opportunity to contribute to our American story. By working to give each person a better chance at success, we can unlock their potential and empower them to serve others in the same way.

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by virtue of the authority vested in me by the Constitution and the laws of the United States, do hereby proclaim January 2017 as National Mentoring Month. I call upon public officials, business and community leaders, educators, and Americans across the country to observe this month with appropriate ceremonies, activities, and programs.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-eighth day of December, in the year of our Lord two thousand sixteen, and of the Independence of the United States of America the two hundred and forty-first.

[FR Doc. 2017–00040
Filed 1–4–17; 8:45 am]
Billing code 3295–F7–P

Presidential Documents

Proclamation 9561 of December 28, 2016

National Slavery and Human Trafficking Prevention Month, 2017

By the President of the United States of America

A Proclamation

Our Nation wrestled with the issue of slavery in a way that nearly tore us apart—its fundamental notion in direct contradiction with our founding premise that we are all created equal. The courageous individuals who rejected such cruelty helped us overcome one of the most painful chapters in our history as we worked to realize the promise of equality and justice for all. But today, in too many places around the world—including right here in the United States—the injustice of modern slavery and human trafficking still tears at our social fabric. During National Slavery and Human Trafficking Prevention Month, we resolve to shine a light on every dark corner where human trafficking still threatens the basic rights and freedoms of others.

From factories and brothels to farms and mines, millions of men, women, and children in the United States and around the world are exploited for their bodies and their labor. Whether through violence, deceit, or the promises of a better life, some of the most vulnerable populations among us—including migrants and refugees fleeing conflict or disaster, homeless LGBT youth, Alaska Native and American Indian women and girls, and children in poverty—are preyed upon by human traffickers. In order to rid the world of modern slavery we must do everything in our power to combat these violations of human decency.

The United States has pursued efforts to address these crimes and lift up individuals who have suffered unspeakable abuse at the hands of traffickers. Through the Interagency Task Force to Monitor and Combat Trafficking in Persons, we have joined with the private sector, faith communities, law enforcement, and advocates to coordinate efforts to prevent trafficking and protect victims. Focusing on an agenda that prioritizes victim services, the rule of law, procurement of supplies, and increasing public awareness, the Task Force has strengthened Federal efforts to end human trafficking. In 2012, I issued an Executive Order to strengthen protections against human trafficking in Federal contracting, and nearly a year ago, I signed legislation that strengthened our ability to prevent products made with forced labor, including child labor, from entering American markets.

We must address the consequences of human trafficking and work to tackle its root causes. This past fiscal year, the Department of Health and Human Services and the Department of Justice provided more than $60 million to community-based organizations and task forces to assist human trafficking victims, and since the beginning of my Administration, we have nearly tripled the number of victims connected to services. The Department of Homeland Security has also taken steps to streamline immigration procedures for trafficking victims and ensure their regulations are consistent with existing law. And through new Victims of Crime Act regulations, Federal funds can now be used to help human trafficking victims with their housing. Through the White House Council on Women and Girls, we have worked to address the sexual abuse-to-prison pipeline that disproportionately affects those especially vulnerable to sex trafficking—including young women and

girls of color. And the U.S. Advisory Council on Human Trafficking—comprised of 11 human trafficking survivors of diverse backgrounds and experiences—recently released its first set of recommendations for combating human trafficking while keeping survivor perspectives in mind.

Every action we take at home, from the clothing we wear to the food we eat, is connected to what happens around the world. As a Nation, we have worked to address the problem of forced labor in our supply chains, and as individuals, we must strive to be conscientious consumers. Working with our friends and allies, we have made this issue an international priority. Just this year we used multilateral fora, including the North American Leaders Summit, the East Asia Summit, and the United Nations, to raise awareness and work with partners around the globe. In addition to urging other countries to develop and expand their anti-trafficking laws and services for victims, we are also stepping up our foreign assistance in this area. Working alongside the international community, we have seen significant increases in trafficking prosecutions and convictions, and we have made great strides in supporting victims.

As leaders in the global undertaking to end the exploitation of human beings for profit, we must always remember that our freedom is bound to the freedom of others. This month, let us find inspiration in America's progress toward justice, opportunity, and prosperity for all and reaffirm our pledge to continue fighting for human rights around the world.

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by virtue of the authority vested in me by the Constitution and the laws of the United States, do hereby proclaim January 2017 as National Slavery and Human Trafficking Prevention Month, culminating in the annual celebration of National Freedom Day on February 1. I call upon businesses, national and community organizations, families, and all Americans to recognize the vital role we must play in ending all forms of slavery and to observe this month with appropriate programs and activities.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-eighth day of December, in the year of our Lord two thousand sixteen, and of the Independence of the United States of America the two hundred and forty-first.

[FR Doc. 2017–00041
Filed 1–4–17; 8:45 am]
Billing code 3295–F7–P

Presidential Documents

Proclamation 9562 of December 28, 2016

National Stalking Awareness Month, 2017

By the President of the United States of America

A Proclamation

Every year, stalkers deny too many people the comfort and safety they deserve, violating our basic expectation of dignity and respect for all. Posing risks to both the physical and emotional health of victims, stalking is recognized as a crime across our Nation. This month, we join together in support of victims to raise awareness of this threat and reaffirm the importance of ensuring every person can live free from fear of violence, harassment, and any form of stalking.

Approximately 1 in 6 women and 1 in 19 men will be victims of stalking. Perpetrators of stalking seek power and control by following, harassing, or pursuing victims in unwanted or repeated ways. Stalking can occur digitally—through cell phones and on social media platforms—as well as in person through repeated threats or acts of physical violence. And whether committed by acquaintances, former partners, or strangers, stalking can cause anxiety, depression, and feelings of helplessness, as well as a wide variety of general health and sleeping problems. Stalking victims live with the fear of not knowing what will happen next, and many are often forced to change their daily activities, move to a different location, or take time off from school or work.

Along with combating domestic violence, dating violence, and sexual assault, confronting stalking and supporting victims is an important part of my Administration's efforts to end violence against women. And to ensure that violence against women, including stalking, is never tolerated, Vice President Biden has also led efforts to help change this culture. In 2013, I signed the reauthorization of the Violence Against Women Act, which identifies stalking as a key focus area in which we can improve support for victims. Because of an Executive Order I signed in 2015, victims employed by Federal contractors can now use paid sick leave for absences related to stalking, and in the past year, many Federal agencies have also increased their support for victims as part of ongoing work to address the effects of domestic violence in the workplace. The Department of Housing and Urban Development recently finalized a new rule that strengthens housing protections for stalking victims, helping to secure their basic right to a safe living environment. And through a new Government-wide training tool designed to educate Federal employees on how to recognize and respond to stalking—and how to support colleagues who may be victims—we have worked to enhance policies that support affected employees.

Nobody should ever feel unsafe in their homes and communities, which is why we must work to lift up victims and survivors who know the distress and anxiety of being stalked. Throughout National Stalking Awareness Month, let us reaffirm the value of privacy and security for all as we continue striving to ensure offenders are held accountable. If we pursue such progress and change with the passion and empathy that victims of stalking deserve, we can build a future where all people are free to live out their dreams.

NOW, THEREFORE, I, BARACK OBAMA, President of the United States of America, by virtue of the authority vested in me by the Constitution

and the laws of the United States, do hereby proclaim January 2017 as National Stalking Awareness Month. I call upon all Americans to learn the signs of stalking, acknowledge stalking as a serious crime, and urge those affected not to be afraid to speak out or ask for help. Let us also resolve to support victims and survivors, and to create communities that are secure and supportive for all Americans.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-eighth day of December, in the year of our Lord two thousand sixteen, and of the Independence of the United States of America the two hundred and forty-first.

[FR Doc. 2017–00042
Filed 1–4–17; 8:45 am]
Billing code 3295–F7–P

Rules and Regulations

Federal Register
Vol. 82, No. 3
Thursday, January 5, 2017

This section of the FEDERAL REGISTER contains regulatory documents having general applicability and legal effect, most of which are keyed to and codified in the Code of Federal Regulations, which is published under 50 titles pursuant to 44 U.S.C. 1510.

The Code of Federal Regulations is sold by the Superintendent of Documents. Prices of new books are listed in the first FEDERAL REGISTER issue of each week.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 23

[Docket No.FAA–2016–9409; Special Conditions No. 23–279–SC]

Special Conditions: Cranfield Aerospace Limited, Cessna Aircraft Company Model 525; Tamarack Load Alleviation System and Cranfield Winglets—Interaction of Systems and Structures

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final special conditions.

SUMMARY: These special conditions are issued for the Cessna Aircraft Company model 525 airplane. This airplane as modified by Cranfield Aerospace Limited will have a novel or unusual design feature associated with the installation of a Tamarack Active Technology Load Alleviation System and Cranfield Winglets. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature. These special conditions contain the additional safety standards the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

DATES: These special conditions are effective January 5, 2017 and are applicable on December 23, 2016.

FOR FURTHER INFORMATION CONTACT: Mike Reyer, Continued Operational Safety, ACE–113, Small Airplane Directorate, Aircraft Certification Service, 901 Locust; Kansas City, Missouri 64106; telephone (816) 329–4131; facsimile (816) 329–4090.

SUPPLEMENTARY INFORMATION:

Background

On January 25, 2016, Cranfield Aerospace Limited (CAL) applied for a supplemental type certificate to install winglets on the Cessna Aircraft Company (Cessna) model 525. The Cessna model 525 twin turbofan engine airplane is certified in the normal category for eight seats, including a pilot, a maximum gross weight of 10,700 pounds, and a maximum altitude of 41,000 feet mean sea level.

Special conditions have been applied on past 14 CFR part 25 airplane programs in order to consider the effects of systems on structures. The regulatory authorities and industry developed standardized criteria in the Aviation Rulemaking Advisory Committee (ARAC) forum based on the criteria defined in Advisory Circular 25.672–1, dated November 15, 1983. The ARAC recommendations have been incorporated in the European Aviation Safety Agency Certification Specifications (CS) 25.302 and CS 25, appendix K. The special conditions used for part 25 airplane programs, can be applied to part 23 airplane programs in order to require consideration of the effects of systems on structures. However, some modifications to the part 25 special conditions are necessary to address differences between parts 23 and 25 as well as differences between parts 91 and 121 operating environments.

Winglets increase aerodynamic efficiency. However, winglets also increase wing design static loads, increase the severity of the wing fatigue spectra, and alter the wing fatigue stress ratio, which under limit gust and maneuvering loads factors, may exceed the certificated wing design limits. The addition of the Tamarack Active Technology Load Alleviation System (ATLAS) mitigates the winglet's adverse structural effects by reducing the aerodynamic effectiveness of the winglet when ATLAS senses gust and maneuver loads above a predetermined threshold.

The ATLAS functions as a load-relief system. This is accomplished by measuring airplane loading via an accelerometer and moving an aileron-like device called a Tamarack Active Control Surface (TACS) that reduces lift at the tip of the wing. The TACS are located outboard and adjacent to the left and right aileron control surfaces. The TACS movement reduces lift at the tip of the wing, resulting in the wing spanwise center of pressure moving inboard, thus reducing bending stresses along the wing span. Because the ATLAS compensates for the increased wing root bending at elevated load factors, the overall effect of this modification is that the required reinforcement of the existing Cessna wing structure due to the winglet installation is reduced. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for this design feature.

The ATLAS is not a primary flight control system, a trim device, or a wing flap. However, several regulations under Part 23, Subpart D—Design and Construction—Control Systems, have applicability to ATLAS, which might otherwise be considered ''Not Applicable'' under a strict interpretation of the regulations. These Control System regulations include §§ 23.672, 23.675, 23.677, 23.681, 23.683, 23.685, 23.693, 23.697, and 23.701.

An airplane designed with a load-relief system must provide an equivalent level of safety to an airplane with similar characteristics designed without a load-relief system. In the following special conditions, an equivalent level of safety is provided by relating the required structural safety factor to the probability of load-relief system failure and the probability of exceeding the frequency of design limit and ultimate loads.

These special conditions address several issues with the operation and failure of the load-relief system. These issues include the structural requirements for the system in the fully operational state; evaluation of the effects of system failure, both at the moment of failure and continued safe flight and landing with the failure annunciated to the pilot; and the potential for failure of the failure monitoring/pilot annunciation function.

The structural requirements for the load-relief system in the fully operational state are stated in special condition 2(e) of these special conditions. In this case, the structure must meet the full requirements of part 23, subparts C and D with full credit given for the effects of the load-relief system.

In the event of a load-relief system failure in-flight, the effects on the structure at the moment of failure must be considered as described in special condition 2(f)(l) of these special

conditions. These effects include, but are not limited to the structural loads induced by a hard-over failure of the load-relief control surface and oscillatory system failures that may excite the structural dynamic modes. In evaluating these effects, pilot corrective actions may be considered and the airplane may be assumed to be in 1g (gravitation force) flight prior to the load-relief system failure. These special conditions allows credit, in the form of reduced structural factors of safety, based on the probability of failure of the load-relief system. Effects of an in-flight failure on flutter and fatigue and damage tolerance must also be evaluated.

Following the initial in-flight failure, the airplane must be capable of continued safe flight and landing. Special condition 2(f)(2) in these special conditions assumes that a properly functioning, monitoring, and annunciating system has alerted the pilot to the load-relief failure. Since the pilot has been made aware of the load-relief failure, appropriate flight limitations, including speed restrictions, may be considered when evaluating structural loads, flutter, and fatigue and damage tolerance. These special conditions allows credit, in the form of reduced structural factors of safety, based on the probability of failure of the load-relief system and the flight time remaining on the failure flight.

Special condition 2(g) of these special conditions addresses the failure of the load-relief system to annunciate a failure to the pilot. These special conditions address this concern with maintenance actions and requirements for monitoring and annunciation systems.

These special conditions have been modified from previous, similar part 25 special conditions because of the differences between parts 23 and 25 as well as to address the part 91 operating and maintenance environment. Paragraph (c)(3) of the part 25 special condition [1] is removed from these special conditions. Special condition 2(h) of these special conditions is modified to require a ferry permit for additional flights after an annunciated failure or obvious system failure.

Type Certification Basis

Under the provisions of § 21.101, Cranfield Aerospace Limited must show that the Cessna model 525, as changed, continues to meet the applicable provisions of the regulations incorporated by reference in Type Certificate No. A1WI, revision 24, or the applicable regulations in effect on the date of application for the change. The regulations incorporated by reference in the type certificate are commonly referred to as the ''original type certification basis.'' The regulations incorporated by reference in Type Certificate No. A1WI, revision 24 are 14 CFR part 23 effective February 1, 1965, amendments 23–1 through 23–38 and 23–40.

If the Administrator finds the applicable airworthiness regulations (*i.e.,* 14 CFR part 23) do not contain adequate or appropriate safety standards for the Cessna model 525 because of a novel or unusual design feature, special conditions are prescribed under the provisions of § 21.16.

In addition to the applicable airworthiness regulations and special conditions, the Cessna 525 must comply with the fuel vent and exhaust emission requirements of 14 CFR part 34 and the noise certification requirements of 14 CFR part 36.

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.101.

Special conditions are initially applicable to the model for which they are issued. Should the applicant apply for a supplemental type certificate to modify any other model included on the same type certificate to incorporate the same or similar novel or unusual design feature, the FAA would apply these special conditions to the other model under § 21.101.

Novel or Unusual Design Features

The Cessna model 525 will incorporate the following novel or unusual design features: Cranfield winglets with a Tamarack Active Technology Load Alleviation System.

Discussion

For airplanes equipped with systems that affect structural performance, either directly or as a result of a failure or malfunction, the applicant must take into account the influence of these systems and their failure conditions when showing compliance with the requirements of part 23, subparts C and D.

The applicant must use the following criteria for showing compliance with these special conditions for airplanes equipped with flight control systems, autopilots, stability augmentation systems, load alleviation systems, flutter control systems, fuel management systems, and other systems that either directly or as a result of failure or malfunction affect structural performance. If these special conditions are used for other systems, it may be necessary to adapt the criteria to the specific system.

Discussion of Comments

Notice of proposed special conditions No. 23–16–03–SC for the Cessna model 525 airplane was published in the **Federal Register** on November 22, 2016 (81 FR 83737). No comments were received, and the special conditions are adopted as proposed.

Applicability

As discussed above, these special conditions are applicable to the Cessna model 525. Should Cranfield Aerospace Limited apply at a later date for a supplemental type certificate to modify any other model included on A1WI, revision 24 to incorporate the same novel or unusual design feature, the FAA would apply these special conditions to that model as well.

Under standard practice, the effective date of final special conditions would be 30 days after the date of publication in the **Federal Register**; however, as the supplemental type certification date for the Cessna model 525 is imminent, the FAA finds that good cause exists to make these special conditions effective upon issuance.

Conclusion

This action affects only certain novel or unusual design features on one model of airplanes. It is not a rule of general applicability and it affects only the applicant who applied to the FAA for approval of these features on the airplane.

List of Subjects in 14 CFR Part 23

Aircraft, Aviation safety, Signs and symbols.

Authority: 49 U.S.C. 106(g), 40113, 44701, 44702, 14 CFR 21.16, 21.101; and 14 CFR 11.38 and 11.19.

The Special Conditions

Accordingly, pursuant to the authority delegated to me by the Administrator, the following special conditions are issued as part of the type certification basis for Cessna Aircraft Company 525 airplanes modified by Cranfield Aerospace Limited.

1. Active Technology Load Alleviation System (ATLAS)

SC 23.672 Load Alleviation System

The load alleviation system must comply with the following:

[1] Special Condition No. 25–164–SC, ''Boeing Model 737–700 IGW, Interaction of Systems and Structures,'' Effective August 30, 2000 (65 FR 55443).

(a) A warning, which is clearly distinguishable to the pilot under expected flight conditions without requiring the pilot's attention, must be provided for any failure in the load alleviation system or in any other automatic system that could result in an unsafe condition if the pilot was not aware of the failure. Warning systems must not activate the control system.

(b) The design of the load alleviation system or of any other automatic system must permit initial counteraction of failures without requiring exceptional pilot skill or strength, by either the deactivation of the system or a failed portion thereof, or by overriding the failure by movement of the flight controls in the normal sense.

(1) If deactivation of the system is used to counteract failures, the control for this initial counteraction must be readily accessible to each pilot while operating the control wheel and thrust control levers.

(2) If overriding the failure by movement of the flight controls is used, the override capability must be operationally demonstrated.

(c) It must be shown that, after any single failure of the load alleviation system, the airplane must be safely controllable when the failure or malfunction occurs at any speed or altitude within the approved operating limitations that is critical for the type of failure being considered;

(d) It must be shown that, while the system is active or after any single failure of the load alleviation system—

(1) The controllability and maneuverability requirements of part 23, subpart D, are met within a practical operational flight envelope (*e.g.,* speed, altitude, normal acceleration, and airplane configuration) that is described in the Airplane Flight Manual (AFM); and

(2) The trim, stability, and stall characteristics are not impaired below a level needed to permit continued safe flight and landing.

SC 23.677 Load Alleviation Active Control Surface

(a) Proper precautions must be taken to prevent inadvertent or improper operation of the load alleviation system. It must be demonstrated that with the load alleviation system operating throughout its operational range, a pilot of average strength and skill level is able to continue safe flight with no objectionable increased workload.

(b) The load alleviation system must be designed so that, when any one connecting or transmitting element in the primary flight control system fails, adequate control for safe flight and landing is available.

(c) The load alleviation system must be irreversible unless the control surface is properly balanced and has no unsafe flutter characteristics. The system must have adequate rigidity and reliability in the portion of the system from the control surface to the attachment of the irreversible unit to the airplane structure.

(d) It must be demonstrated the airplane is safely controllable and a pilot can perform all maneuvers and operations necessary to affect a safe landing following any load alleviation system runaway not shown to be extremely improbable, allowing for appropriate time delay after pilot recognition of the system runaway. The demonstration must be conducted at critical airplane weights and center of gravity positions.

SC 23.683 Operation Tests

(a) It must be shown by operation tests that, when the flight control system and the load alleviation systems are operated and loaded as prescribed in paragraph (c) of this section, the flight control system and load alleviation systems are free from—

(1) Jamming;

(2) Excessive friction; and

(3) Excessive deflection.

(b) The operation tests in paragraph (a) of this section must also show the load alleviation system and associated surfaces do not restrict or prevent aileron control surface movements, or cause any adverse response of the ailerons, under the loading prescribed in paragraph (c) of this section that would prevent continued safe flight and landing.

(c) The prescribed test loads are for the entire load alleviation and flight control systems, loads corresponding to the limit air loads on the appropriate surfaces.

Note: Advisory Circular (AC) 23–17C ''Systems and Equipment Guide to Certification of Part 23 Airplanes'' provides guidance on potential methods of compliance with this section and other regulations applicable to this STC project.

SC 23.685 Control System Details

(a) Each detail of the load alleviation system and related moveable surfaces must be designed and installed to prevent jamming, chafing, and interference from cargo, passengers, loose objects, or the freezing of moisture.

(b) There must be means in the cockpit to prevent the entry of foreign objects into places where they would jam any one connecting or transmitting element of the load alleviation system.

(c) Each element of the load alleviation system must have design features, or must be distinctively and permanently marked, to minimize the possibility of incorrect assembly that could result in malfunctioning of the control system.

SC 23.697 Load Alleviation System Controls

(a) The load alleviation control surface must be designed so that during normal operation, when the surface has been placed in any position, it will not move from that position unless the control is adjusted or is moved by the operation of a load alleviation system.

(b) The rate of movement of the control surface in response to the load alleviation system controls must give satisfactory flight and performance characteristics under steady or changing conditions of airspeed, engine power, attitude, flap configuration, speedbrake position, and during landing gear extension and retraction.

SC 23.701 Load Alleviation System Interconnection

(a) The load alleviation system and related movable surfaces as a system must—

(1) Be synchronized by a mechanical interconnection between the movable surfaces or by an approved equivalent means; or

(2) Be designed so the occurrence of any failure of the system that would result in an unsafe flight characteristic of the airplane is extremely improbable; or

(b) The airplane must be shown to have safe flight characteristics with any combination of extreme positions of individual movable surfaces.

(c) If an interconnection is used in multiengine airplanes, it must be designed to account for unsymmetrical loads resulting from flight with the engines on one side of the plane of symmetry inoperative and the remaining engines at takeoff power. For single-engine airplanes, and multiengine airplanes with no slipstream effects on the load alleviation system, it may be assumed that 100 percent of the critical air load acts on one side and 70 percent on the other.

Sections 23.675, ''Stops;'' 23.681, ''Limit Load Static Tests;'' and 23.693, ''Joints''

The load alleviation system must comply with §§ 23.675, 23.681, and 23.693 as written and no unique special condition will be required for these regulations.

Applicability of Control System Regulations to Other Control Systems

If applicable, other control systems used on the Cessna 525 may require a showing of compliance to §§ 23.672, 23.675, 23.677, 23.681, 23.683, 23.685, 23.693, 23.697 and 23.701 as written for this STC project.

2. Interaction of Systems and Structures

(a) The criteria defined herein only address the direct structural consequences of the system responses and performances and cannot be considered in isolation but should be included in the overall safety evaluation of the airplane. These criteria may in some instances duplicate standards already established for this evaluation. These criteria are only applicable to structure whose failure could prevent continued safe flight and landing. Specific criteria that define acceptable limits on handling characteristics or stability requirements when operating in the system degraded or inoperative mode are not provided in this special condition.

(b) Depending upon the specific characteristics of the airplane, additional studies may be required that go beyond the criteria provided in this special condition in order to demonstrate the capability of the airplane to meet other realistic conditions such as alternative gust or maneuver descriptions for an airplane equipped with a load alleviation system.

(c) The following definitions are applicable to this special condition.

(1) *Structural performance:* Capability of the airplane to meet the structural requirements of 14 CFR part 23.

(2) *Flight limitations:* Limitations that can be applied to the airplane flight conditions following an in-flight occurrence and that are included in the flight manual (*e.g.,* speed limitations, avoidance of severe weather conditions, etc.).

(3) [Reserved]

(4) *Probabilistic terms:* The probabilistic terms (probable, improbable, extremely improbable) used in this special condition are the same as those used in § 23.1309. For the purposes of this special condition, extremely improbable for normal, utility, and acrobatic category airplanes is defined as 10^{-8} per hour. For commuter category airplanes, extremely improbable is defined as 10^{-9} per hour.

(5) *Failure condition:* The term failure condition is the same as that used in § 23.1309, however this special condition applies only to system failure conditions that affect the structural performance of the airplane (*e.g.,* system failure conditions that induce loads, change the response of the airplane to inputs such as gusts or pilot actions, or lower flutter margins).

(d) General. The following criteria (paragraphs (e) through (i)) will be used in determining the influence of a system and its failure conditions on the airplane structure.

(e) System fully operative. With the system fully operative, the following apply:

(1) Limit loads must be derived in all normal operating configurations of the system from all the limit conditions specified in subpart C (or defined by special condition or equivalent level of safety in lieu of those specified in subpart C), taking into account any special behavior of such a system or associated functions or any effect on the structural performance of the airplane that may occur up to the limit loads. In particular, any significant nonlinearity (rate of displacement of control surface, thresholds or any other system nonlinearities) must be accounted for in a realistic or conservative way when deriving limit loads from limit conditions.

(2) The airplane must meet the strength requirements of part 23 (static strength and residual strength for failsafe or damage tolerant structure), using the specified factors to derive ultimate loads from the limit loads defined above. The effect of nonlinearities must be investigated beyond limit conditions to ensure the behavior of the system presents no anomaly compared to the behavior below limit conditions. However, conditions beyond limit conditions need not be considered when it can be shown that the airplane has design features that will not allow it to exceed those limit conditions.

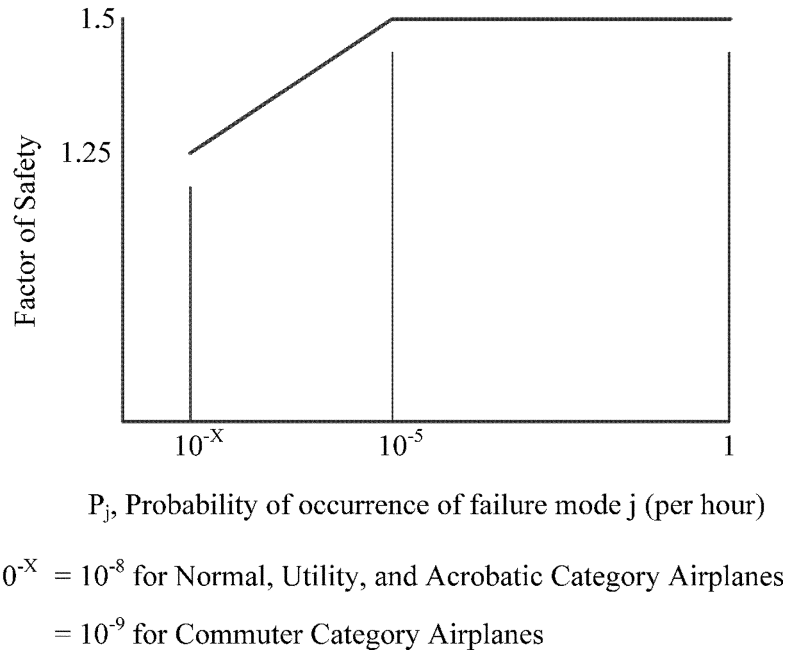
(3) The airplane must meet the aeroelastic stability requirements of § 23.629.

(f) System in the failure condition. For any system failure condition not shown to be extremely improbable, the following apply:

(1) *At the time of occurrence.* Starting from 1-g level flight conditions, a realistic scenario, including pilot corrective actions, must be established to determine the loads occurring at the time of failure and immediately after failure.

(i) For static strength substantiation, these loads, multiplied by an appropriate factor of safety that is related to the probability of occurrence of the failure, are ultimate loads to be considered for design. The factor of safety is defined in figure 1.

Figure 1—Factor of Safety at the Time of Occurrence



(ii) For residual strength substantiation, the airplane must be able to withstand two thirds of the ultimate loads defined in subparagraph (f)(1)(i).

(iii) For pressurized cabins, these loads must be combined with the normal operating differential pressure.

(iv) Freedom from aeroelastic instability must be shown up to the speeds defined in § 23.629(f). For failure conditions that result in speeds beyond V_D/M_D, freedom from aeroelastic instability must be shown to increased speeds, so that the margins intended by § 23.629(f) are maintained.

(v) Failures of the system that result in forced structural vibrations (oscillatory failures) must not produce loads that could result in detrimental deformation of primary structure.

(2) *For the continuation of the flight.* For the airplane, in the system failed state and considering any appropriate reconfiguration and flight limitations, the following apply:

(i) The loads derived from the following conditions (or defined by special condition or equivalent level of safety in lieu of the following conditions) at speeds up to V_C/M_C, or the speed limitation prescribed for the remainder of the flight, must be determined:

(A) The limit symmetrical maneuvering conditions specified in §§ 23.321, 23.331, 23.333, 23.345, 23.421, 23.423, and 23.445.

(B) The limit gust and turbulence conditions specified in §§ 23.341, 23.345, 23.425, 23.443, and 23.445.

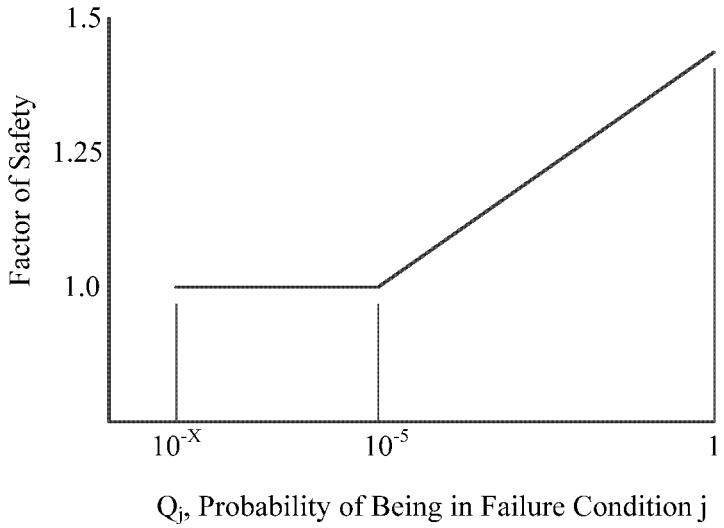
(C) The limit rolling conditions specified in § 23.349 and the limit unsymmetrical conditions specified in §§ 23.347, 23.427, and 23.445.

(D) The limit yaw maneuvering conditions specified in §§ 23.351, 23.441, and 23.445.

(E) The limit ground loading conditions specified in §§ 23.473 and 23.493.

(ii) For static strength substantiation, each part of the structure must be able to withstand the loads in paragraph (f)(2)(i) of this special condition multiplied by a factor of safety depending on the probability of being in this failure state. The factor of safety is defined in figure 2.

Figure 2—Factor of Safety for Continuation of Flight



10^{-X} = 10^{-8} for Normal, Utility, and Acrobatic Category Airplanes

= 10^{-9} for Commuter Category Airplanes

$Q_j = (T_j)(P_j)$ where:

T_j = Average time spent in failure condition j, hours

P_j = Probability of occurrence of failure mode j, per hour

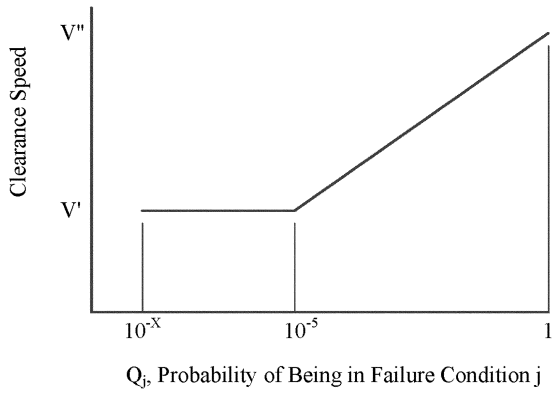
Note: If P_j is greater than 10^{-3} per flight hour then a 1.5 factor of safety must be applied to all limit load conditions specified in part 23 subpart C.

(iii) For residual strength substantiation, the airplane must be able to withstand two thirds of the ultimate loads defined in paragraph (f)(2)(ii) of this special condition. For pressurized cabins, these loads must be combined with the normal operating pressure differential.

(iv) If the loads induced by the failure condition have a significant effect on fatigue or damage tolerance then their effects must be taken into account.

(v) Freedom from aeroelastic instability must be shown up to a speed determined from figure 3. Flutter clearance speeds V′ and V″ may be based on the speed limitation specified for the remainder of the flight using the margins defined by § 23.629.

Figure 3—Clearance Speed



10^{-X} = 10^{-8} for Normal, Utility, and Acrobatic Category Airplanes

= 10^{-9} for Commuter Category Airplanes

V' = Clearance speed as defined by §23.629(f)
V" = Clearance speed as defined by §23.629(b)

$Q_j = (T_j)(P_j)$ where:
T_j = Average time spent in failure condition j, hours
P_j = Probability of occurrence of failure mode j, per hour

Note: If P_j is greater than 10^{-3} per flight hour then the flutter clearance speed must not be less than V"

(vi) Freedom from aeroelastic instability must also be shown up to V′ in figure 3 above, for any probable system failure condition combined with any damage required or selected for investigation by §§ 23.571 through 23.574.

(3) Consideration of certain failure conditions may be required by other sections of 14 CFR part 23 regardless of calculated system reliability. Where analysis shows the probability of these failure conditions to be less than 10^{-8} for normal, utility, or acrobatic category airplanes or less than 10^{-9} for commuter category airplanes, criteria other than those specified in this paragraph may be used for structural substantiation to show continued safe flight and landing.

(g) Failure indications. For system failure detection and indication, the following apply:

(1) The system must be checked for failure conditions, not extremely improbable, that degrade the structural capability below the level required by part 23 or significantly reduce the reliability of the remaining system. As far as reasonably practicable, the flightcrew must be made aware of these failures before flight. Certain elements of the control system, such as mechanical and hydraulic components, may use special periodic inspections, and electronic components may use daily checks, in lieu of detection and indication systems to achieve the objective of this requirement. These certification maintenance requirements must be limited to components that are not readily detectable by normal detection and indication systems and where service history shows that inspections will provide an adequate level of safety.

(2) The existence of any failure condition, not extremely improbable, during flight that could significantly affect the structural capability of the airplane and for which the associated reduction in airworthiness can be minimized by suitable flight limitations, must be signaled to the flightcrew. The probability of not annunciating these failure conditions must be extremely improbable (unannunciated failure). For example, failure conditions that result in a factor of safety between the airplane strength and the loads of subpart C below 1.25, or flutter margins below V″, must be signaled to the flightcrew during flight.

(h) Further flights with known load-relief system failure. Additional flights after an annunciated failure of the load-relief system or obvious failure of the load-relief system are permitted with a ferry permit only. In these cases, ferry permits may be issued to allow moving the airplane to an appropriate maintenance facility. Additional flights are defined as, further flights after landing on a flight where an annunciated or obvious failure of the load-relief system has occurred or after an annunciated or obvious failure of the load-relief system occurs during preflight preparation.

(i) Fatigue and damage tolerance. If any system failure would have a significant effect on the fatigue or damage evaluations required in §§ 23.571 through 23.574, then these effects must be taken into account.

Issued in Kansas City, Missouri, on December 23, 2016.

Barry Ballenger,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–31819 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–9057; Directorate Identifier 2016–NM–055–AD; Amendment 39–18763; AD 2016–26–05]

RIN 2120–AA64

Airworthiness Directives; Airbus Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2014–26–08, for all Airbus Model A330–200, –200F, and –300 series airplanes. AD 2014–26–08 required revising the maintenance or inspection program to incorporate new maintenance requirements and airworthiness limitations. This new AD requires revising the maintenance or inspection program, as applicable, to incorporate new or revised airworthiness limitation requirements. This new AD also removes certain airplanes from the applicability. This AD was prompted by a determination that more restrictive maintenance instructions and airworthiness limitations are necessary. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective February 9, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of February 9, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of March 2, 2015 (80 FR 3866, January 26, 2015).

ADDRESSES: For service information identified in this final rule, contact Airbus SAS, Airworthiness Office—EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 45 80; email *airworthiness.A330@airbus.com;* Internet *http://www.airbus.com.* You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221. It is also available on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9057.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9057; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (telephone 800–647–5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM–116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057–3356; telephone 425–227–1138; fax 425–227–1149.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2014–26–08, Amendment 39–18059 (80 FR 3866, January 26, 2015) (''AD 2014–26–08''). AD 2014–26–08 applied to all Airbus Model A330–200, –200F, and –300 series airplanes. The NPRM published in the **Federal Register** on September 12, 2016 (81 FR 62676) (''the NPRM''). The NPRM was prompted by a determination that more restrictive maintenance instructions and airworthiness limitations are necessary. The NPRM proposed to require revising the maintenance or inspection program to incorporate new maintenance requirements and airworthiness limitations. The NPRM also proposed to remove certain airplanes from the applicability. We are issuing this AD to prevent safety-significant latent failures that would, in combination with one or more other specific failures or events, result in a hazardous or catastrophic failure condition.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2016–0066, dated April 6, 2016 (referred to after this as the Mandatory Continuing Airworthiness Information, or ''the MCAI''), to correct an unsafe condition for all Model A330–200, –200F, and –300 series airplanes. The MCAI states:

> The airworthiness limitations are currently defined and published in the Airbus A330 and A340 Airworthiness Limitations Section (ALS) documents.
>
> The mandatory instructions and airworthiness limitations applicable to the Certification Maintenance Requirements (CMR), which are approved by EASA, are specified in Airbus A330 and A340 ALS Part 3. Failure to comply with these instructions could result in an unsafe condition.
>
> EASA issued AD 2013–0245 (A330 aeroplanes) [which corresponds to FAA AD 2014–26–08] and AD 2013–0021 (A340 aeroplanes) to require the actions as specified in Airbus A330 and A340 ALS Part 3 at Revision 04 and Revision 02, respectively.
>
> Since those [EASA] ADs were issued, Airbus issued Revision 05 and Revision 03, respectively, of Airbus A330 and A340 ALS Part 3, to introduce more restrictive maintenance requirements.
>
> For the reason described above, this [EASA] AD retains the requirements of EASA AD 2013–0245 and [EASA] AD 2013–0021, which are superseded, and requires accomplishment of the actions specified in Airbus A330 ALS Part 3 Revision 05, or A340 ALS Part 3 Revision 03, as applicable * * *.

You may examine the MCAI in the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9057.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

We reviewed the available data and determined that air safety and the public interest require adopting this AD as proposed, except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Related Service Information Under 1 CFR Part 51

We reviewed Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 04, dated August 17, 2013; and Revision 05, dated October 19, 2015. The service information describes updated inspections and intervals to be incorporated into the maintenance or inspection program. These documents are distinct because each revision contains unique changes to be incorporated into the maintenance or inspection program.

This service information is reasonably available because the interested parties

have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Costs of Compliance

We estimate that this AD affects 104 airplanes of U.S. registry.

The actions required by AD 2014–26–08, and retained in this AD take about 1 work-hour per product, at an average labor rate of $85 per work-hour. Based on these figures, the estimated cost of the actions that are required by AD 2014–26–08 is $85 per product.

We also estimate that it takes about 2 work-hours per product to comply with the basic requirements of this AD. The average labor rate is $85 per work-hour. Based on these figures, we estimate the cost of this AD on U.S. operators to be $17,680, or $170 per product.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. ''Subtitle VII: Aviation Programs,'' describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in ''Subtitle VII, Part A, Subpart III, Section 44701: General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a ''significant regulatory action'' under Executive Order 12866;

2. Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

3. Will not affect intrastate aviation in Alaska; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2014–26–08, Amendment 39–18059 (80 FR 3866, January 26, 2015), and adding the following new AD:

2016–26–05 Airbus: Amendment 39–18763; Docket No. FAA–2016–9057; Directorate Identifier 2016–NM–055–AD.

(a) Effective Date

This AD is effective February 9, 2017.

(b) Affected ADs

This AD replaces AD 2014–26–08, Amendment 39–18059 (80 FR 3866, January 26, 2015) (''AD 2014–26–08'').

(c) Applicability

This AD applies to Airbus Model A330–201, –202, –203, –223, –223F –243, –243F, –301, –302, –303, –321, –322, –323, –341, –342, and –343 airplanes, certificated in any category, with an original certificate of airworthiness or original export certificate of airworthiness issued on or before October 19, 2015.

(d) Subject

Air Transport Association (ATA) of America Code 05, Periodic inspections.

(e) Reason

This AD was prompted by a determination that more restrictive maintenance instructions and airworthiness limitations are necessary. We are issuing this AD to prevent safety-significant latent failures that would, in combination with one or more other specific failures or events, result in a hazardous or catastrophic failure condition.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Retained: Revision of the Maintenance or Inspection Program, With No Changes

This paragraph restates the requirements of paragraph (k) of AD 2014–26–08, with no changes.

(1) Within 90 days after March 2, 2015 (the effective date of AD 2014–26–08): Revise the maintenance or inspection program, as applicable, to incorporate Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 04, dated August 27, 2013. Within the applicable compliance time defined in the ''Record of Revisions'' section of Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 04, dated August 27, 2013, except as provided by paragraph (g)(2) of this AD, accomplish all applicable maintenance tasks. Accomplishing the actions specified in paragraph (i) of this AD terminates the requirements of this paragraph.

(2) Where paragraph 3 of the ''Record of Revisions'' section of Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 04, dated August 27, 2013, specifies accomplishing the actions ''from 27 August 2013,'' this AD requires compliance within the specified compliance time after March 2, 2015 (the effective date of AD 2014–26–08).

(h) Retained: No Alternative Inspections or Intervals, With No Changes

This paragraph restates the requirements of paragraph (l) of AD 2014–26–08, with no changes. After accomplishment of the action required by paragraph (g)(1) of this AD, no alternative inspections or inspection intervals may be used, other than those specified in Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 04, dated August 27, 2013, except as provided by paragraphs (g)(2) and (i) of this AD, unless the inspections or intervals are approved as an AMOC in accordance with the procedures specified in paragraph (k)(1) of this AD.

(i) New: Revision of the Maintenance or Inspection Program

Within 90 days after the effective date of this AD: Revise the maintenance or inspection program, as applicable, to incorporate Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 05, dated October 19, 2015. Accomplishing the actions specified in this paragraph terminates the requirements of paragraph (g) of this AD.

(j) New: No Alternative Inspections or Intervals

After the action required by paragraph (i) of this AD has been done, no alternative inspections or inspection intervals may be used, other than those specified in Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 05, dated October 19, 2015, unless the inspections or intervals are approved as an AMOC in accordance with the procedures specified in paragraph (k)(1) of this AD.

(k) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, International Branch, ANM–116, Transport Airplane

Directorate, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to ATTN: Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM–116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057–3356; telephone 425–227–1138; fax 425–227–1149. Information may be emailed to: *9-ANM-116-AMOC-REQUESTS@faa.gov.* Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(2) *Contacting the Manufacturer:* As of the effective date of this AD, for any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Branch, ANM–116, Transport Airplane Directorate, FAA; or the European Aviation Safety Agency (EASA); or Airbus's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(l) Related Information

Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2016–0066, dated April 6, 2016, for related information. This MCAI may be found in the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9057.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(3) The following service information was approved for IBR on February 9, 2017.

(i) Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 05, dated October 19, 2015. The revision level of this document is identified on only the title page and in the Revision Status and the Record of Revisions.

(ii) Reserved.

(4) The following service information was approved for IBR on March 2, 2015 (80 FR 3866, January 26, 2015).

(i) Airbus A330 Airworthiness Limitations Section ALS Part 3—Certification Maintenance Requirements, Revision 04, dated August 27, 2013. The revision level of this document is identified on only the title page and in the Record of Revisions. The revision date is not identified on the title page of this document.

(ii) Reserved.

(5) For service information identified in this AD, contact Airbus SAS, Airworthiness Office—EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 45 80; email *airworthiness.A330@airbus.com;* Internet *http://www.airbus.com.*

(6) You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221.

(7) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal-register/cfr/ibr-locations.html.*

Issued in Renton, Washington, on December 15, 2016.

Victor Wicklund,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–31239 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–7003; Directorate Identifier 2016–CE–015–AD; Amendment 39–18766; AD 2016–26–08]

RIN 2120–AA64

Airworthiness Directives; PILATUS AIRCRAFT LTD. Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2014–22–01 for all PILATUS AIRCRAFT LTD. Models PC–12, PC–12/45, PC–12/47, and PC–12/47E airplanes. This AD results from mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as a need to incorporate new revisions into the Limitations section, Chapter 4, of the FAA-approved maintenance program (*e.g.,* maintenance manual). The limitations were revised to include repetitive inspections of the main landing gear (MLG) attachment bolts. We are issuing this AD to require actions to address the unsafe condition on these products.

DATES: This AD is effective February 9, 2017.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of February 9, 2017.

ADDRESSES: You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–7003; or in person at the Docket Management Facility, U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.

For service information identified in this AD, contact PILATUS AIRCRAFT LTD., Customer Service Manager, CH–6371 STANS, Switzerland; telephone: +41 (0) 41 619 33 33; fax: +41 (0) 41 619 73 11; Internet: *http://www.pilatus-aircraft.com* or email: *SupportPC12@pilatus-aircraft.com.* You may view this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329–4148. It is also available on the Internet at *http://www.regulations.gov* by searching for Docket No. FAA–2016–7003.

FOR FURTHER INFORMATION CONTACT: Doug Rudolph, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329–4059; fax: (816) 329–4090; email: *doug.rudolph@faa.gov.*

SUPPLEMENTARY INFORMATION:

Discussion

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 by adding an AD that would apply to all PILATUS AIRCRAFT LTD. Models PC–12, PC–12/45, PC–12/47, and PC–12/47E airplanes. That SNPRM was published in the **Federal Register** on August 31, 2016 (81 FR 59919), and proposed to supersede AD 2014–22–01, Amendment 39–18005 (79 FR 67343, November 13, 2014).

The SNPRM proposed to correct an unsafe condition for the specified products and was based on mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country. The MCAI states:

> The airworthiness limitations are currently defined and published in the Pilatus PC–12 Aircraft Maintenance Manual(s) (AMM) under Chapter 4, Structural, Component and Miscellaneous—Airworthiness Limitations Section (ALS) documents. The limitations contained in these documents have been identified as mandatory for continued airworthiness.
>
> Failure to comply with these instructions could result in an unsafe condition.

EASA issued AD 2014–0170 requiring the actions as specified in ALS, Chapter 4 of AMM report 02049 issue 28, for PC–12, PC–12/45 and PC–12/47 aeroplanes, and Chapter 4 of AMM report 02300 issue 11, for PC–12/47E aeroplanes.

Since that AD was issued, Pilatus issued Chapter 4 of PC–12 AMM report 02049 issue 31, and Chapter 4 of PC–12 AMM report 02300 issue 14 (hereafter collectively referred to as 'the applicable ALS' in this AD), to incorporate new six-year and ten-year inspection intervals for several main landing gear (MLG) attachment bolts, and an annual inspection interval for the MLG shock absorber attachment bolts, which was previously included in the AMM Chapter 5 annual inspection. After a further review of the in-service data, Pilatus issued Service Letter (SL) 186, extending the special compliance time applicable for the MLG bolts inspection.

For the reasons described above, this AD retains the requirements of EASA AD 2014–0170, which is superseded, and requires the accomplishment of the new maintenance tasks, as described in the applicable ALS.

The MCAI can be found in the AD docket on the Internet at *https://www.regulations.gov/document?D=FAA-2016-7003-0002.*

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and the FAA's response to each comment.

Request To Incorporate Requirements of the New Revisions to the Limitations Section of the FAA-Approved Maintenance Program Into This AD

Fernando Campos of KACALP Flight Operations requested that the requirements of the new revisions to the Limitations section of the FAA-approved maintenance program (*e.g.,* maintenance manual) be written into the AD instead of requiring operators to insert these new revisions into the Limitations section of the FAA-approved maintenance program (*e.g.,* maintenance manual).

The commenter stated that most operators do not own a maintenance library subscription (hardcopy of the maintenance manual) from PILATUS AIRCRAFT LTD. (Pilatus). Therefore, it would be impossible to comply with paragraph (f)(1) of the proposed AD.

The commenter also stated that Pilatus PC–12 airplane operators are not subject to 14 CFR 91.409(e) and/or 14 CFR 91.409(f)(3) ''Inspection Program'' and operators can maintain their airplane in accordance with the operating rules of 14 CFR 91.409(a) and 14 CFR 91.409(b) only.

We do not agree with the commenter. Although some operators may or may not own a current hardcopy subscription of the Pilatus PC–12 maintenance library (*e.g.,* maintenance manual), 14 CFR 21.50 requires that a complete set of instructions for continued airworthiness (ICA) be delivered with the airplane. Therefore, it is possible for an operator to comply with paragraph (f)(1) of this AD using the set of ICA delivered with the airplane. Pilatus PC–12 airplanes are bound by 14 CFR 91.409(a) and 14 CFR 91.409(b) if operated for hire. An option for 14 CFR 135 operators, if they desire to use an ''Approved Aircraft Inspection Program'' is 14 CFR 91.409(c). An option for using a ''Progressive Inspection'' is 14 CFR 91.409(d), and the Pilatus PC–12 ICA has such a program already in it. Operators of a Pilatus PC–12 airplane are not normally subject to 14 CFR 91.409(e) or 14 CFR 91.409(f)(3); however, if an exemption to 14 CFR 91.409(e) is granted to an operator, then 14 CFR 409(f)(3) is an option as well. Incorporating the limitation requirements into the AD could potentially cause confusion and/or unintended new unsafe conditions if there were any inadvertent changes when rewriting the limitations into this AD. In addition, this deviates from the method utilized by the foreign airworthiness authority in the MCAI and could cause confusion with future rulemaking.

We have not changed the AD based on this comment.

Request To Allow All A&P Mechanics To Do the Supplemental Structural Inspection Document (SSID) Program

Fernando Campos of KACALP Flight Operations requested that the AD be revised to allow all A&P mechanics to do the SSID program.

The commenter stated that paragraph (f)(3) of the proposed AD states that ''only authorized Pilatus Service Centers can do the SSID.'' The commenter stated that this is illegal and contrary to U.S. antitrust laws. Properly certificated repair stations and A&P mechanics cannot be prevented from engaging in aircraft commerce, especially if they have the appropriate ratings from the FAA under 14 CFR parts 65 and 145.

The FAA does not agree with the commenter that the requirements in this AD are illegal and contrary to U.S. antitrust laws. There is little margin for error on the safety risk presented in the SSID. Although the FAA believes that the requirement to use only Pilatus services centers appropriately addresses this risk, we will also consider an alternative method of compliance (AMOC), as stated in the AD. The FAA can issue an AMOC that allows properly certified mechanics to do the actions in the SSID, providing we believe the additional risk presented in the SSID is appropriately addressed. For such an AMOC, you should contact the FAA at the contact specified in paragraph (g)(1) of this AD.

We have not changed this AD based on this comment at this time, although we will consider AMOCs as indicated above.

Request Compliance Credit for Using Electronic Versus Hardcopy Maintenance Manual

Fernando Campos of KACALP Flight Operations requested compliance be allowed for operators who subscribe to the Pilatus maintenance library electronically (instead of hardcopy).

We agree with the commenter. Although we have to account for the actual paper document due to the fact that we have to incorporate by reference the documents referenced in this AD and make it part of the regulation, we understand the concerns. We added language to this AD stating that compliance with the electronic version of the Limitations sections to the FAA-approved maintenance program (*e.g.,* maintenance manual) is acceptable provided the specifically referenced section is followed even though there may be differences with the pagination.

We have changed this AD based on this comment.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the change described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the SNPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the SNPRM.

Related Service Information

PILATUS AIRCRAFT LTD. has issued Structural, Component and Miscellaneous—Airworthiness Limitations, document 12–A–04–00–00–00A–000A–A, dated July 12, 2016, and Structural and Component Limitations—Airworthiness Limitations, document 12–B–04–00–00–00A–000A–A, dated July 19, 2016. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section of the AD.

Costs of Compliance

We estimate that this AD will affect 770 products of U.S. registry. We also estimate that it will take about 1.5 work-hours per product to comply with the basic requirements of this AD. The average labor rate is $85 per work-hour. Based on these figures, we estimate the cost of this AD on U.S. operators to be $98,175, or $127.50 per product. This breaks down as follows:

- Incorporating new revisions into the Limitations section, Chapter 4, of the FAA-approved maintenance program (*e.g.,* maintenance manual): .5 work-hour for a fleet cost of $32,725, or $42.50 per product.
- New inspections of the MLG attachment bolts: 1 work-hour with no parts cost for fleet cost of $65,450 or $85 per product.

In addition, we estimate that any necessary corrective actions (on-condition costs) that must be taken based on the inspections will take about 1 work-hour and require parts costing approximately $100 for a cost of $185 per product. We have no way of determining the number of products that may need these necessary corrective actions.

The only costs that will be imposed by this AD over that already required by AD 2014–22–01 is the costs associated with the insertion of the revised Limitation section and the MLG attachment bolts inspection and replacement as necessary.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. ''Subtitle VII: Aviation Programs,'' describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in ''Subtitle VII, Part A, Subpart III, section 44701: General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–7003; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by removing 39–18005 (79 FR 67343, November 13, 2014) and adding the following new AD:

2016–26–08 PILATUS AIRCRAFT LTD.: Amendment 39–18766; Docket No. FAA–2016–7003; Directorate Identifier 2016–CE–015–AD.

(a) Effective Date

This airworthiness directive (AD) becomes effective February 9, 2017.

(b) Affected ADs

This AD replaces AD 2014–22–01, 39–18005 (79 FR 67343, November 13, 2014).

(c) Applicability

This AD applies to PILATUS AIRCRAFT LTD. Models PC–12, PC–12/45, PC–12/47, and PC–12/47E airplanes, all manufacturer serial numbers (MSNs), certificated in any category.

(d) Subject

Air Transport Association of America (ATA) Code 5: Time Limits.

(e) Reason

This AD was prompted by mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as a need to incorporate new revisions into the Limitations section, Chapter 4, of the FAA-approved maintenance program (*e.g.,* maintenance manual). The limitations were revised to include repetitive inspections of the main landing gear (MLG) attachment bolts. These actions are required to ensure the continued operational safety of the affected airplanes.

(f) Actions and Compliance

Unless already done, do the actions in paragraphs (f)(1) through (6) of this AD:

(1) Before further flight after February 9, 2017 (the effective date of this AD), insert the following revisions into the Limitations section of the FAA-approved maintenance program (*e.g.,* maintenance manual). Compliance with an electronic version of the Limitations section is acceptable provided the specifically referenced sections are followed even though there may be differences with the pagination:

(i) STRUCTURAL, COMPONENT AND MISCELLANEOUS—AIRWORTHINESS LIMITATIONS, Data module code 12–A–04–00–00–00A–000A–A, dated July 12, 2016, of the Pilatus Model type—PC–12, PC–12/45, PC–12/47 MSN–101–888, Aircraft Maintenance Manual (AMM), Document No. 02049, 12–A–AM–00–00–00–I, revision 32, dated July 18, 2016; and

(ii) STRUCTURAL AND COMPONENT LIMITATIONS—AIRWORTHINESS LIMITATIONS, Data module code 12–B–04–00–00–00A–000A–A, dated July 19, 2016, of the Pilatus Model type—PC–12/47E MSN–1001–UP, Aircraft Maintenance Manual (AMM), Document No. 02300, 12–B–AM–00–00–00–I, revision 15, dated July 30, 2016.

(2) The new limitations section revisions listed in paragraphs (f)(1)(i) and (ii) of this AD specify the following:

(i) Establish inspections of the MLG attachment bolts,

(ii) Specify replacement of components before or upon reaching the applicable life limit, and

(iii) Specify accomplishment of all applicable maintenance tasks within certain thresholds and intervals.

(3) Only authorized Pilatus Service Centers can do the Supplemental Structural Inspection Document (SSID) as required by

the documents in paragraphs (f)(1)(i) and (ii) of this AD because deviations from the type design in critical locations could make the airplane ineligible for this life extension.

(4) If no compliance time is specified in the documents listed in paragraphs (f)(1)(i) and (ii) of this AD when doing any corrective actions where discrepancies are found as required in paragraph (f)(2)(iii) of this AD, do these corrective actions before further flight after doing the applicable maintenance task.

(5) During the accomplishment of the actions required in paragraph (f)(2) of this AD, including all subparagraphs, if a discrepancy is found that is not identified in the documents listed in paragraphs (f)(1)(i) and (ii) of this AD, before further flight after finding the discrepancy, contact PILATUS AIRCRAFT LTD. at the address specified in paragraph (h) of this AD for a repair scheme and incorporate that repair scheme.

(6) Before or upon accumulating 6 years time-in-service (TIS) on the MLG attachment bolts or within the next 3 months TIS after February 9, 2017 (the effective date of this AD), whichever occurs later, inspect the MLB attachment bolts for cracks and corrosion and before further flight take all necessary corrective actions.

(g) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, Standards Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Doug Rudolph, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329–4059; fax: (816) 329–4090; email: *doug.rudolph@faa.gov.*

(i) Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(ii) AMOCs approved for AD 2014–22–01, 39–18005 (79 FR 67343, November 13, 2014) are not approved as AMOCs for this AD.

(2) *Airworthy Product:* For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(h) Related Information

Refer to MCAI European Aviation Safety Agency (EASA) AD No. 2016–0083, dated April 28, 2016, for related information. You may examine the MCAI on the Internet at *https://www.regulations.gov/document?D=FAA-2016-7003-0002.*

(i) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) STRUCTURAL, COMPONENT AND MISCELLANEOUS—AIRWORTHINESS LIMITATIONS, Data module code 12–A–04–00–00–00A–000A–A, dated July 12, 2016, of the Pilatus Model type—PC–12, PC–12/45, PC–12/47 MSN–101–888, Aircraft Maintenance Manual (AMM), Document No. 02049, 12–A–AM–00–00–00–I, revision 32, dated July 18, 2016.

(ii) STRUCTURAL AND COMPONENT LIMITATIONS—AIRWORTHINESS LIMITATIONS, Data module code 12–B–04–00–00–00A–000A–A, dated July 19, 2016, of the Pilatus Model type—PC–12/47E MSN–1001–UP, Aircraft Maintenance Manual (AMM), Document No. 02300, 12–B–AM–00–00–00–I, revision 15, dated July 30, 2016.

(3) For PILATUS AIRCRAFT LTD. service information identified in this AD, contact PILATUS AIRCRAFT LTD., Customer Service Manager, CH–6371 STANS, Switzerland; telephone: +41 (0) 41 619 33 33; fax: +41 (0) 41 619 73 11; Internet: *http://www.pilatus-aircraft.com* or email: *SupportPC12@pilatus-aircraft.com.*

(4) You may view this service information at FAA, FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329–4148. In addition, you can access this service information on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–7003.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal-register/cfr/ibr-locations.html.*

Issued in Kansas City, Missouri, on December 21, 2016.

Melvin Johnson,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–31600 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–7424; Directorate Identifier 2015–NM–173–AD; Amendment 39–18756; AD 2016–25–30]

RIN 2120–AA64

Airworthiness Directives; Airbus Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Airbus Model A330–200, –200 Freighter, and –300 series airplanes; and Model A340–200, –300, –500, and –600 series airplanes. This AD was prompted by certain anomalies of the flight guidance computers. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective February 9, 2017.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of February 9, 2017.

ADDRESSES: For service information identified in this final rule, contact Airbus SAS, Airworthiness Office—EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone: +33 5 61 93 36 96; fax: +33 5 61 93 45 80; email: *airworthiness.A330-A340@airbus.com;* Internet: *http://www.airbus.com.* You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221. It is also available on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–7424.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–7424; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone: 800–647–5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM 116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057–3356; telephone: 425–227–1138; fax: 425–227–1149.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would

apply to all Airbus Model A330–200, –200 Freighter, and –300 series airplanes; and Model A340–200, –300, –500, and –600 series airplanes. The NPRM published in the **Federal Register** on July 7, 2016 (81 FR 44235) (''the NPRM'').

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2015–0124R2, dated August 31, 2016 (referred to after this as the Mandatory Continuing Airworthiness Information, or ''the MCAI''), to correct an unsafe condition for all Airbus Model A330–200, –200 Freighter, and –300 series airplanes; and Model A340–200, –300, –500, and –600 series airplanes. The MCAI states:

It was determined that, when there are significant differences between all airspeed sources, the flight controls of an Airbus A330 or A340 aeroplane will revert to alternate law, the autopilot (AP) and the auto-thrust (A/THR) automatically disconnect, and the Flight Director (FD) bars are automatically removed. Further analyses have shown that, after such an event, if two airspeed sources become similar while still erroneous, the flight guidance computers will display the FD bars again, and enable the re-engagement of AP and A/THR. However, in some cases, the AP orders may be inappropriate, such as an abrupt pitch command.

This condition, if not corrected, may, under specific circumstances, result in reduced control of the aeroplane.

In order to prevent such events, EASA issued AD 2010–0271 [which corresponds to FAA AD 2011–02–09, Amendment 39–16583 (76 FR 4219, January 25, 2011)] to require an amendment of the Airplane Flight Manual (AFM) to ensure that flight crews apply the appropriate operational procedure.

Since EASA AD 2010–0271 was issued, new Flight Control Primary Computer (FCPC) software standards were developed that inhibit autopilot engagement under unreliable airspeed conditions. Consequently, EASA issued AD 2011–0199 (later revised) [which corresponds to FAA AD 2013–19–14, Amendment 39–17596 (78 FR 68347, November 14, 2013)] for A330 and A340–200/300 aeroplanes, and [EASA] AD 2013–0107 [which also corresponds to FAA AD 2013–19–14] for A340–500/600 aeroplanes, to require a software standard upgrade of the three FCPCs by either modification or replacement.

Since EASA AD 2011–0199R1 and [EASA] AD 2013–0107 were issued, new FCPC software standards were developed to correct aeroplane behaviour in case of undetected erroneous (Radio Altimeter) RA information and to introduce other improvements. In addition, the new FCPC software standards also implement enhanced Angle of Attack (AOA) monitoring in order to better detect cases of AOA blockage, including multiple AOA blockage.

Prompted by these developments, EASA issued AD 2015–0124 (later revised) to require the latest software standard upgrade of the three FCPCs, either by modification or replacement. At the time, some of the Airbus SBs as specified in Table 1 (originally, Appendix 1) of this [EASA] AD were not yet available.

Since EASA AD 2015–0124R1 was issued, Airbus published SB A340–27–5064, and for this reason, this [EASA] AD is revised to introduce the date of publication of this SB. This [EASA] AD also contains some editorial changes to meet the latest [EASA] AD writing standards, without changes to the technical content.

There is still one SB that remains unavailable at this time. It is expected that this [EASA] AD will be revised again when this SB is published.

You may examine the MCAI in the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–7424.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

Support for the NPRM

The Air Line Pilots Association, International stated that it had no objection to the NPRM.

Request To Include Certain Service Information in the NPRM

Airbus requested that Airbus Service Bulletin A340–27–5064, dated June 1, 2016, (''SB A340–27–5064, Revision 0''), which is applicable to Airbus Model A340–500 and –600 series airplanes, be included in the NPRM. Airbus noted that SB A340–27–5064, Revision 0, was issued after the NPRM was published and that EASA planned to issue a revision to EASA AD 2015–0124R1, dated February 2, 2016, to include SB A340–27–5064, Revision 0.

We agree with the commenter's request to include SB A340–27–5064, Revision 0, in this final rule. Paragraph (g) of the proposed AD instructed operators of Model A340–500 and –600 series airplanes to upgrade the three FCPCs in accordance with a method approved by the Manager, International Branch, ANM–116, Transport Airplane Directorate, FAA; or EASA; or Airbus's EASA Design Organization Approval (DOA). Now that SB A340–27–5064, Revision 0, is available, we have revised paragraph (g) of this AD to require the upgrade to be done in accordance with the Accomplishment Instructions of the applicable service information specified in paragraphs (h)(1), (h)(2), (h)(3), (h)(4), and (h)(5) of this AD. We have added a new paragraph (h)(5) to this AD, which identifies the service information for Model A340–541 and A340–642 series airplanes with hardware standard FCPC 2K2 as Airbus Service Bulletin A340–27–5064, dated June 1, 2016.

In addition, the commenter is correct that EASA has revised AD 2015–0124 R1, dated February 2, 2016, to include SB A340–27–5064, Revision 0. We have revised the Discussion section of this final rule and paragraph (p)(1), Related Information, of this AD to refer to the revised EASA AD 2015–0124R2, dated August 31, 2016.

Request To Include Certain Airplane Models in the NPRM

Airbus stated that the NPRM addressed Model A330–200, –200 Freighter, and –300 series airplanes; and Model A340–200 and –300 airplanes; but not Model A340–500 and –600 series airplanes. Airbus commented that there were inconsistencies in the NPRM because if Model A340–500 and –600 series airplanes are not included in the applicability then paragraph (l) of the NPRM was incorrect because it referred to AD 2013–19–14, which includes all Model A340–541 and –642 airplanes in its applicability.

We infer that Airbus is requesting that Model A340–541 and –642 airplanes be included in the applicability of the NPRM, or requesting that this AD be revised to remove all text that is associated with Model A340–541 and –642 airplanes.

We agree to clarify. Model A340–541 and –642 airplanes were included in the applicability of the proposed AD and continue to be included in the applicability of this AD. The **SUMMARY** section of the NPRM included Model A340–500 and –600 series airplanes, and paragraphs (c)(6) and (c)(7) of the proposed AD included Model A340–541 and –642 airplanes, respectively. In addition, paragraph (g) of the proposed AD specified that operators of Model A340–500 and –600 airplanes must upgrade the FCPCs in accordance with a method approved by the Manager, International Branch, ANM–116 Transport Airplane Directorate, FAA; or the EASA; or Airbus's EASA DOA. For clarification we have revised the header of paragraph (g) of this AD to include Model A340–500 and –600 series airplanes.

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. We have determined that these minor changes:

• Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and

• Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

Related Service Information Under 1 CFR Part 51

We reviewed the following service information:

• Airbus Service Bulletin A330–27–3205, Revision 02, dated March 23, 2016.

• Airbus Service Bulletin A330–27–3207, dated June 30, 2015.

• Airbus Service Bulletin A340–27–4195, dated November 24, 2015.

• Airbus Service Bulletin A340–27–4196, dated November 24, 2015.

• Airbus Service Bulletin A340–27–5064, dated June 1, 2016.

The service information describes procedures for upgrading (replacing or modifying) the software standards for the FCPCs. These documents are distinct since they apply to different airplane models. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Costs of Compliance

We estimate that this AD affects 92 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Modification/replacement	3 work-hours × $85 per hour = $255.	Not available	$255	$23,460

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. ''Subtitle VII: Aviation Programs,'' describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in ''Subtitle VII, Part A, Subpart III, Section 44701: General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a ''significant regulatory action'' under Executive Order 12866;

2. Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

3. Will not affect intrastate aviation in Alaska; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2016–25–30 Airbus: Amendment 39–18756; Docket No. FAA–2016–7424; Directorate Identifier 2015–NM–173–AD.

(a) Effective Date

This AD is effective February 9, 2017.

(b) Affected ADs

This AD affects the ADs identified in paragraphs (b)(1), (b)(2), (b)(3), and (b)(4) of this AD:

(1) AD 2012–08–02, Amendment 39–17018 (77 FR 24829, April 26, 2012) (''AD 2012–08–02'').

(2) AD 2013–03–06, Amendment 39–17341 (78 FR 15279, March 11, 2013) (''AD 2013–03–06'').

(3) AD 2013–05–08, Amendment 39–17380 (78 FR 27015, May 9, 2013; corrected August 29, 2013 (78 FR 53237)) (''AD 2013–05–08'').

(4) AD 2013–19–14, Amendment 39–17596 (78 FR 68347, November 14, 2013) (''AD 2013–19–14'').

(c) Applicability

This AD applies to the Airbus airplanes, certificated in any category, identified in paragraphs (c)(1) through (c)(7) of this AD, all manufacturer serial numbers.

(1) Model A330–223F and –243F airplanes.

(2) Model A330–201, –202, –203, –223, and –243 airplanes.

(3) Model A330–301, –302, –303, –321, –322, –323, –341, –342, and –343 airplanes.

(4) Model A340–211, –212, and –213 airplanes.

(5) Model A340–311, –312, and –313 airplanes.

(6) Model A340–541 airplanes.

(7) Model A340–642 airplanes.

(d) Subject

Air Transport Association (ATA) of America Code 27, Flight Controls.

(e) Reason

This AD was prompted by a determination that, due to significant differences among all airspeed sources, the flight controls will revert to alternate law, the autopilot (AP) and the auto-thrust (A/THR) will automatically disconnect, and the flight director (FD) bars will be automatically removed. Then, if two airspeed sources become similar while still erroneous, the flight guidance computers will display the FD bars again, and enable the re-engagement of the AP and A/THR. In some

cases, however, the AP orders may be inappropriate, such as a possible abrupt pitch command. We are issuing this AD to prevent AP engagement under unreliable airspeed conditions, which could result in reduced control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) New Software Standard Upgrade for Model A330 Series Airplanes, and Model A340–200, –300, –500, and –600 Series Airplanes

At the applicable time specified in table 1 to paragraph (g) of this AD: Upgrade (by modification or replacement, as applicable) the three flight control primary computers (FCPCs), as specified in table 1 to paragraph (g) of this AD, in accordance with the Accomplishment Instructions of the applicable service information specified in paragraphs (h)(1), (h)(2), (h)(3), (h)(4), and (h)(5) of this AD.

TABLE 1 TO PARAGRAPH (g) OF THIS AD—SOFTWARE STANDARD UPDATES AND COMPLIANCE TIMES

Software standard	Hardware standard	Compliance time after effective date of this AD
P13/M22	FCPC 2K2	Within 9 months.
P14/M23	FCPC 2K1	Within 9 months.
M23	FCPC 2K0	Within 9 months.
L24	FCPC 2K1 or 2K0	Within 15 months.
L23	FCPC 2K2	Within 15 months.
W13	FCPC 2K2	Within 15 months.

(h) Service Information

For the upgrade required by paragraph (g) of this AD, applicable service information is identified in paragraphs (h)(1), (h)(2), (h)(3), (h)(4), and (h)(5) of this AD.

(1) For Model A330 airplanes with hardware standard FCPC 2K2: Airbus Service Bulletin A330–27–3205, Revision 02, dated March 23, 2016.

(2) For Model A330 airplanes with hardware standard FCPC 2K1 or FCPC 2K0: Airbus Service Bulletin A330–27–3207, dated June 30, 2015.

(3) For Model A340–200 and –300 series airplanes with hardware standard FCPC 2K0 or FCPC 2K1: Airbus Service Bulletin A340–27–4195, dated November 24, 2015.

(4) For Model A340–200 and –300 series airplanes with hardware standard FCPC 2K2: Airbus Service Bulletin A340–27–4196, dated November 24, 2015.

(5) For Model A340–500 and A340–600 series airplanes with hardware standard FCPC 2K2: Airbus Service Bulletin A340–27–5064, dated June 1, 2016.

(i) Removal of Certain Airplane Flight Manual (AFM) Requirements

After accomplishing the FCPC upgrade required by paragraph (g) of this AD, the AFM operational procedures required by the AFM revisions identified in paragraphs (i)(1), (i)(2), and (i)(3) of this AD are no longer required and can be removed from the AFM for that airplane only.

(1) The AFM revision required by paragraph (g) of AD 2013–19–14.

(2) The AFM revision required by paragraph (h) of AD 2013–19–14.

(3) The AFM revision required by paragraph (g) of AD 2013–03–06.

(j) Removal of Certain Other AFM Requirements

Accomplishing the FCPC upgrade required by paragraph (g) of this AD terminates the dispatch limitations required by paragraphs (g), (h), and (i) of AD 2012–08–02 for that airplane only, and after accomplishing the FCPC upgrade, those dispatch limitations can be removed from the AFM for that airplane only.

(k) Certain Actions Required by AD 2013–05–08 Affected by This AD

Accomplishing the FCPC upgrade required by paragraph (g) this AD constitutes compliance with the requirements of paragraph (l) and paragraphs (o)(1) through (o)(4) of AD 2013–05–08.

(l) Certain Actions Required by AD 2013–19–14 Affected by This AD

Accomplishing the FCPC upgrade required by paragraph (g) this AD constitutes compliance with the requirements of paragraphs (i) and (j) of AD 2013–19–14.

(m) Airplanes Excluded From Certain Requirements

For Airbus Model A330 series airplanes having Airbus Modification 202680 (installation of FCPC 2K2 with software standard P13/M22) incorporated in production: The actions specified in paragraph (g) of this AD are not required, provided it can be positively determined that since the date of issuance of the original certificate of airworthiness or the original export certificate of airworthiness, no FCPC has been replaced on that airplane with an FCPC having an earlier standard.

(n) Credit for Previous Actions

This paragraph provides credit for the actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A330–27–3205, dated March 9, 2015; or Airbus Service Bulletin A330–27–3205, Revision 01, dated July 3, 2015.

(o) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, International Branch, ANM–116, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to ATTN: Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM–116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057–3356; telephone: 425–227–1138; fax: 425–227–1149. Information may be emailed to: *9-ANM-116-AMOC-REQUESTS@faa.gov.* Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Branch, ANM–116, Transport Airplane Directorate, FAA; or EASA; or Airbus's EASA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

(3) *Required for Compliance (RC):* If any service information contains procedures or tests that are identified as RC, those procedures and tests must be done to comply with this AD; any procedures or tests that are not identified as RC are recommended. Those procedures and tests that are not identified as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the procedures and tests identified as RC can be done and the airplane can be put back in an airworthy condition. Any substitutions or changes to procedures or tests identified as RC require approval of an AMOC.

(p) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA AD 2015–0124R2, dated August 31, 2016, for related information. This MCAI may be found in the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–7424.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (q)(3) and (q)(4) of this AD.

(q) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Airbus Service Bulletin A330–27–3205, Revision 02, dated March 23, 2016.

(ii) Airbus Service Bulletin A330–27–3207, dated June 30, 2015.

(iii) Airbus Service Bulletin A340–27–4195, dated November 24, 2015.

(iv) Airbus Service Bulletin A340–27–4196, dated November 24, 2015.

(v) Airbus Service Bulletin A340–27–5064, dated June 1, 2016.

(3) For service information identified in this AD, contact Airbus SAS, Airworthiness Office—EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone: +33 5 61 93 36 96; fax: +33 5 61 93 45 80; email: *airworthiness.A330-A340@airbus.com;* Internet: *http://www.airbus.com.*

(4) You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal-register/cfr/ibr-locations.html.*

Issued in Renton, Washington, on December 7, 2016.

Dionne Palermo,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–30411 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–9160; Directorate Identifier 2016–CE–022–AD; Amendment 39–18767; AD 2016–26–09]

RIN 2120–AA64

Airworthiness Directives; B–N Group Ltd. Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are superseding an airworthiness directive (AD) 2016–06–01 for B–N Group Ltd. Models BN–2, BN–2A, BN–2A–2, BN–2A–3, BN–2A–6, BN–2A–8, BN–2A–9, BN–2A–20, BN–2A–21, BN–2A–26, BN–2A–27, BN–2B–20, BN–2B–21, BN–2B–26, BN–2B–27, BN–2T–4R, BN–2T, BN2A MK. III, BN2A MK. III–2, and BN2A MK. III–3 (all models on Type Certificate Data Sheets A17EU and A29EU) airplanes. This AD results from mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as cracks in the inner shell of certain pitot/static pressure heads. This AD changes model applicability due to errors found in AD 2016–06–01. We are issuing this AD to require actions to address the unsafe condition on these products.

DATES: This AD is effective February 9, 2017.

The Director of the Federal Register approved the incorporation by reference of a certain other publication listed in this AD as of April 19, 2016 (81 FR 13717; March 15, 2016).

ADDRESSES: You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9160; or in person at the Docket Management Facility, U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.

For service information identified in this AD, contact Britten-Norman Aircraft Limited, Commodore House, Mountbatten Business Centre, Millbrook Road East, Southampton SO15 1HY, United Kingdom; telephone: +44 20 3371 4000; fax: +44 20 3371 4001; email: *info@bnaircraft.com;* Internet: *http://www.britten-norman.com/customer-support/.* You may view this referenced service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329–4148. It is also available on the Internet at *http://www.regulations.gov* by searching for Docket No. FAA–2016–9160.

FOR FURTHER INFORMATION CONTACT: Raymond Johnston, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329–4159; fax: (816) 329–3047; email: *raymond.johnston@faa.gov.*

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to B–N Group Ltd. Models BN–2, BN–2A, BN–2A–2, BN–2A–3, BN–2A–6, BN–2A–8, BN–2A–9, BN–2A–20, BN–2A–21, BN–2A–26, BN–2A–27, BN–2B–20, BN–2B–21, BN–2B–26, BN–2B–27, BN–2T–4R, BN–2T, BN2A MK. III, BN2A MK. III–2, and BN2A MK. III–3 (all models on Type Certificate Data Sheets A17EU and A29EU) airplanes. That NPRM was published in the **Federal Register** on September 23, 2016 (81 FR 65581), and proposed to supersede AD 2016–06–01, Amendment 39–18432 (81 FR 13717; March 15, 2016).

Since we issued AD 2016–06–01, errors were discovered in the model applicability after issuance. This AD adds Models BN–2T and BN–2T–4R, removes nonexistent Model BN2B, and removes duplicate listings of BN2A and BN2A MK.III.

The NPRM proposed to correct an unsafe condition for the specified products and was based on mandatory continuing airworthiness information (MCAI) originated by an aviation authority of another country. The MCAI states that:

> In 2005, occurrences were reported of finding cracks in the inner shell of certain pitot/static pressure heads, Part Number (P/N) DU130–24.
>
> This condition, if not detected and corrected, could lead to incorrect readings on the pressure instrumentation, *e.g.* altimeters, vertical speed indicators (rate-of-climb) and airspeed indicators, possibly resulting in reduced control of the aeroplane.
>
> To address this potential unsafe condition, B–N Group issued Service Bulletin (SB) 310 to provide inspection and test instructions. Consequently, CAA UK issued AD G–2005–0034 (EASA approval 2005–6447) to require repetitive inspections and leak tests and, depending on findings, accomplishment of applicable corrective action(s).
>
> Subsequently, B–N Group published SB 310 issue 2, prompting EASA to issue AD 2006–0143 making reference to SB 310 at issue 2, while the publication of BNA SB 310 issue 3 prompted EASA AD 2006–0143R1, introducing BNA modification (mod) NB–M–1728 (new pitot/static pressure head not affected by the AD requirements) as optional terminating action for the repetitive inspections and leak tests.
>
> Since that AD was issued, operators have reported a number of premature failures of the affected P/N DU130–24 pitot-static probes.
>
> Prompted by these reports, BNA issued SB 310 issue 4 to reduce the interval for the inspections and leak tests.

The MCAI can be found in the AD docket on the Internet at: *https://*

www.regulations.gov/document?D=FAA-2016-9160-0002.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

We reviewed the relevant data and determined that air safety and the public interest require adopting the AD as proposed except for minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Related Service Information

We reviewed B–N Group Ltd. Britten-Norman Service Bulletin Number SB 310, Issue 4, dated September 25, 2015. The service information describes procedures for inspections, and if necessary, replacement of the pitot/static pressure head. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section of the AD.

Costs of Compliance

We estimate that this AD will affect 93 products of U.S. registry. We also estimate that it would take about 1 work-hour per product to comply with the basic requirements of this AD. The average labor rate is $85 per work-hour.

Based on these figures, we estimate the cost of this AD on U.S. operators to be $7,905, or $85 per product.

In addition, we estimate that any necessary follow-on actions would take about 2 work-hours and require parts costing $10,000, for a cost of $10,170 per product. We have no way of determining the number of products that may need these actions.

The cost impact of this AD is the same as that presented in AD 2016–06–01.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. ''Subtitle VII: Aviation Programs,'' describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in ''Subtitle VII, Part A, Subpart III, Section 44701: General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9160; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains the NPRM, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone (800) 647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by removing Amendment 39–18432 (81 FR 13717; March 15, 2016) and adding the following new AD:

2016–26–09 B–N Group Ltd.: Amendment 39–18767; Docket No. FAA–2016–9160; Directorate Identifier 2016–CE–022–AD.

(a) Effective Date

This airworthiness directive (AD) becomes effective February 9, 2017.

(b) Affected ADs

This AD supersedes AD 2016–06–01, Amendment 39–18432 (81 FR 13717; March 15, 2016) (''AD 2016–06–01'').

(c) Applicability

This AD applies to B–N Group Ltd. Models BN–2, BN–2A, BN–2A–2, BN–2A–3, BN–2A–6, BN–2A–8, BN–2A–9, BN–2A–20, BN–2A–21, BN–2A–26, BN–2A–27, BN–2B–20, BN–2B–21, BN–2B–26, BN–2B–27, BN–2T–4R, BN–2T, BN2A MK. III, BN2A MK. III–2, and BN2A MK. III–3 (all models on Type Certificate Data Sheets A17EU and A29EU) airplanes, all serial numbers, certificated in any category.

(d) Subject

Air Transport Association of America (ATA) Code 34: Navigation.

(e) Reason

This AD was prompted by mandatory continuing airworthiness information (MCAI) issued by an aviation authority of another country to identify and correct an unsafe condition on an aviation product. The MCAI describes the unsafe condition as cracks in the inner shell of certain pitot/static pressure heads, which could cause incorrect readings on the pressure instrumentation, possibly resulting in reduced control of the airplane. We are issuing this AD to change the model applicability due to errors found in AD 2016–06–01.

(f) Actions and Compliance

Unless already done, do the following actions in paragraphs (f)(1) through (5) of this AD:

(1) *For all airplanes that are equipped with pitot/static pressure head part number (P/N) DU130–24, except Models BN–2T and BN–2T–4R:* Within 50 hours time-in-service (TIS) after April 19, 2016 (the effective date retained from AD 2016–06–01) and repetitively thereafter at intervals not to exceed 50 hours TIS, inspect the pitot/static pressure head for cracks and/or separation and perform a leak test following the procedures in the action section of Britten-Norman Service Bulletin SB 310, Issue 4, dated September 25, 2015.

(2) *For Models BN–2T and BN–2T–4R that are equipped with pitot/static pressure head*

part number (P/N) DU130–24: Within 50 hours TIS after February 9, 2017 (the effective date of this AD) and repetitively thereafter at intervals not to exceed 50 hours TIS, inspect the pitot/static pressure head for cracks and/or separation and perform a leak test following the procedures in the action section of Britten-Norman Service Bulletin SB 310, Issue 4, dated September 25, 2015.

(3) *For all airplanes equipped with pitot/static pressure head part number (P/N) DU130–24:* If any discrepancies are found during an inspection or test required in paragraph (f)(1) or (2) of this AD, before further flight, replace the pitot/static pressure head with an airworthy part.

(4) *For all airplanes equipped with pitot/static pressure head part number (P/N) DU130–24:* Corrections performed on airplanes as required in paragraph (f)(3) of this AD do not constitute terminating action for the repetitive actions required in paragraph (f)(1) or (2) of this AD.

(5) *For all airplanes not equipped with a pitot/static pressure head P/N DU130–24 on* February 9, 2017 *(the effective date of this AD):* After April 19, 2016 (the effective date retained from AD 2016–06–01), do not install a pitot/static pressure head P/N DU130–24.

(g) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, Standards Office, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Raymond Johnston, Aerospace Engineer, FAA, Small Airplane Directorate, 901 Locust, Room 301, Kansas City, Missouri 64106; telephone: (816) 329–4159; fax: (816) 329–3047; email: *raymond.johnston@faa.gov.* Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(2) *Airworthy Product:* For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(h) Related Information

Refer to MCAI European Aviation Safety Agency (EASA) AD No.: 2015–0184, dated September 1, 2015; for related information. You may examine the MCAI in the AD docket on the Internet at: *https://www.regulations.gov/document?D=FAA-2016-9160-0002.*

(i) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on April 19, 2016.

(i) Britten-Norman Service Bulletin SB 310, Issue 4, dated September 25, 2015.

(ii) Reserved.

(4) For Britten-Norman Aircraft Limited service information identified in this AD, contact Britten-Norman Aircraft Limited, Commodore House, Mountbatten Business Centre, Millbrook Road East, Southampton SO15 1HY, United Kingdom; telephone: +44 20 3371 4000; fax: +44 20 3371 4001; email: *info@bnaircraft.com;* Internet: *http://www.britten-norman.com/customer-support/.*

(5) You may view this service information at the FAA, Small Airplane Directorate, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329–4148. In addition, you can access this service information on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9160.

(6) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal-register/cfr/ibr-locations.html.*

Issued in Kansas City, Missouri, on December 22, 2016.

Pat Mullen,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–31699 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2015–1345; Airspace Docket No. 14–AWP–13]

RIN 2120–AA66

Establishment of an Air Traffic Service (ATS) Route; Western United States

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action establishes one low altitude Area Navigation (RNAV) T-route in the western United States. The route establishes a transition from the San Diego area to points east. This route promotes operational efficiencies for users and provides connectivity to current and proposed RNAV en route and terminal procedures.

DATES: Effective date 0901 UTC, March 2, 2017. The Director of the Federal Register approves this incorporation by reference action under title 1 Code of Federal Regulations, part 51, subject to the annual revision of FAA Order 7400.11 and publication of conforming amendments.

ADDRESSES: FAA Order 7400.11A, Airspace Designations and Reporting Points, and subsequent amendments can be viewed online at *http://www.faa.gov/air_traffic/publications/.* For further information, you can contact the Airspace Policy Group, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone: (202) 267–8783. The Order is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of FAA Order 7400.11A at NARA, call (202) 741–6030, or go to *http://www.archives.gov/federal_register/code_of_federal-regulations/ibr_locations.html.*

FAA Order 7400.11, Airspace Designations and Reporting Points, is published yearly and effective on September 15.

FOR FURTHER INFORMATION CONTACT: Kenneth Ready, Airspace Policy Group, Office of Airspace Services, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone: (202) 267–8783.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority. This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This regulation is within the scope of that authority as it modifies the air traffic service route structure in the north central United States to maintain the efficient flow of air traffic.

History

On June 5, 2015, the FAA published in the **Federal Register** a notice of proposed rulemaking (NPRM) (80 FR 32074), Docket No. FAA–2015–1345, to establish 13 RNAV Q-routes and one T-route originating in Los Angeles Air Route Traffic Control Center's (ARTCC) airspace. Interested parties were invited to participate in this rulemaking effort by submitting written comments on the proposal. No comments were received.

A final rule was published in the **Federal Register** February 4, 2016 (81 FR 5898), Docket No. FAA–2015–1345, addressing the 13 RNAV Q-routes. The T-Route was not addressed in that final rule because it required more coordination due to it being part of the Southern California Metroplex Environmental Assessment.

The development of new RNAV Standard Instrument Departure (SID) and Standard Terminal Arrival (STAR) routes requires incorporation of this T-Route into the National Airspace System route structure in order to maximize the benefits of increased safety in high volume enroute sectors.

The Los Angeles Air Route Traffic Control Center (ARTCC) currently does not have routes that join the Performance Based Navigation (PBN) arrival and departure procedures. The existing conventional jet route structure does not serve the new SID/STAR designs. Routes made up of ground based navigational aids are not capable of delivering aircraft onto the RNAV based arrival and departure procedures in an efficient manner. Developing these predictable and repeatable flight paths through a complex area confined by restricted areas will improve throughput and safety for Los Angeles ARTCC.

This first phase of a two-phase project will align a network of Q-Routes with the new SIDs and STARs. The Q-Route structure is projected to optimize descent/climb profiles to/from several airports in southern California and create segregated arrival/departure paths to reduce airspace complexity. The T-Route in this final rule de-conflicts current airway traffic from southern California to de-conflict with the newly established Q-Routes and provides a route east bound along mountainous terrain and Mexico's border.

Low altitude United States RNAV routes are published in paragraph 6011 of FAA Order 7400.11A dated August 3, 2016, and effective September 15, 2016, which is incorporated by reference in 14 CFR 71.1. The low altitude United States RNAV T-route listed in this document will be subsequently published in the Order.

Availability and Summary of Documents for Incorporation by Reference

This document amends FAA Order 7400.11A, Airspace Designations and Reporting Points, dated August 3, 2016, and effective September 15, 2016. FAA Order 7400.11A is publicly available as listed in the **ADDRESSES** section of this document. FAA Order 7400.11A lists Class A, B, C, D, and E airspace areas, air traffic service routes, and reporting points.

Differences From the NPRM

A previous rule published in the **Federal Register** of February 4, 2016 (81 FR 5898), Docket No. 2015–1345, had several changes from the NPRM which were addressed in the February 4, 2016, final rule. This rule establishes RNAV T-route T–326, which was proposed in the NPRM but was not finalized in the rule. The route required additional coordination within the Southern California Metroplex Environmental Assessment with no changes made to the proposed route. The environmental study has been finalized with no comments addressing the establishment of T–326.

The Rule

The FAA is amending Title 14, Code of Federal Regulations (14 CFR) part 71 by establishing U.S. RNAV T-route T–326 beginning at the Mission Bay, CA, VORTAC (MZB) to the Imperial, CA, VORTAC (IPL) to transition from the San Diego area to the east. The route will be used to de-conflict airway traffic from arrivals and departures at San Diego International Airport. The route enhances safety through de-confliction of airway traffic and provides routing in limited airspace between mountainous terrain and Mexico's border

Regulatory Notices and Analyses

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore: (1) Is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under Department of Transportation (DOT) Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that only affects air traffic procedures and air navigation, it is certified that this rule, when promulgated, does not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Environmental Review

The FAA has determined that this action establishing one low altitude RNAV T-route in the western U.S. to function as a transition from the San Diego area to points east, qualifies for categorical exclusion from full environmental impact review under the National Environmental Policy Act in accordance with FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, Paragraph 5–6.5a for Rulemaking actions that designate or modify classes of airspace areas, airways, routes, and reporting points (see 14 CFR part 71, Designation of Class A, B, C, D, and E Airspace Areas; Air Traffic Service Routes; and Reporting Points). This action is not expected to cause any potentially significant environmental impacts. In accordance with FAAO 1050.1F, paragraph 5–2 regarding Extraordinary Circumstances, this action has been reviewed for factors and circumstances in which a normally categorically excluded action may have a significant environmental impact requiring further analysis, and it is determined that no extraordinary circumstances exist that warrant preparation of an environmental assessment.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

Adoption of the Amendment

In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for part 71 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of FAA Order 7400.11A, Airspace Designations and Reporting Points, dated August 3, 2016, and effective September 15, 2016, is amended as follows:

Paragraph 6011 United States Area Navigation Routes.

* * * * *

T–326 Mission Bay, CA to Imperial, CA (New)

Mission Bay, CA (MZB)	VORTAC	(Lat. 32°46′55.93″ N., long. 117°13′31.49″ W.)
HAILE, CA	WP	(Lat. 32°46′45.70″ N., long. 117°00′51.71″ W.)

BLLYJ, CA	WP	(Lat. 32°49′38.06″ N., long. 116°45′56.45″ W.)
STAXS, CA	WP	(Lat. 32°52′16.70″ N., long. 116°32′17.69″ W.)
GILYY, CA	WP	(Lat. 32°52′12.12″ N., long. 116°21′05.24″ W.)
KUMBA, CA	WP	(Lat. 32°45′43.18″ N., long. 116°03′13.37″ W.)
Imperial, CA (IPL)	VORTAC	(Lat. 32°44′55.92″ N., long. 115°30′30.90″ W.)

Issued in Washington, DC, on December 21, 2016.

Leslie M. Swann,

Acting Manager, Airspace Policy Group.

[FR Doc. 2016–31901 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

18 CFR Parts 375 and 388

[Docket Nos. RM16–15–000, RM15–25–001]

Regulations Implementing FAST Act Section 61003—Critical Electric Infrastructure Security and Amending Critical Energy Infrastructure Information; Availability of Certain North American Electric Reliability Corporation Databases to the Commission; Correction

AGENCY: Federal Energy Regulatory Commission.

ACTION: Final rule; correction.

SUMMARY: This document contains corrections to the final rule (RM16–15–000, RM15–25–001) which published in the **Federal Register** on Wednesday, December 21, 2016 (81 FR 93732). The final rule amended the Commission's regulations to implement provisions of the Fixing America's Surface Transportation Act that pertain to the designation, protection and sharing of Critical Electric Infrastructure Information.

DATES: Effective January 5, 2017, and is applicable beginning December 21, 2016.

FOR FURTHER INFORMATION CONTACT:

Nneka Frye, Office of the General Counsel, Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426, (202) 502–6029, *Nneka.frye@ferc.gov*

Christopher MacFarlane, Office of the General Counsel, Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426, (202) 502–6761, *Christopher.macfarlane@ferc.gov*

Mark Hershfield, Office of the General Counsel, Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426, (202) 502–8597, *Mark.hershfield@ferc.gov*

SUPPLEMENTARY INFORMATION: On November 17, 2016, the Commission issued a final rule in the above-captioned proceeding. This document corrects Footnote 6 in FR Doc 2016–28322, published in the **Federal Register** of December 21, 2016 (81 FR 93732), by adding the following citation on page 93733, in the first column: FERC Stats. & Regs. ¶ 32,715.

Issued: December 22, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–31541 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF COMMERCE

International Trade Administration

19 CFR Part 360

RIN 0625–AB09

Steel Import Monitoring and Analysis System

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

ACTION: Final rule.

SUMMARY: The Department of Commerce (the Department) is extending the Steel Import Monitoring and Analysis (SIMA) system until March 21, 2022. The purpose of the SIMA system is to provide to the public statistical data on steel imports entering the United States roughly five weeks earlier than it would otherwise be available. Aggregate data collected from the steel import licenses are made available to the public on a weekly basis following review by the Department.

DATES: Effective March 21, 2017.

FOR FURTHER INFORMATION CONTACT: For information about the SIMA system, please contact Julie Al-Saadawi (202) 482–1930 or Michael Rollin (202) 482–4978.

SUPPLEMENTARY INFORMATION:

Background

The SIMA system has operated under its current authority since March 21, 2005. Prior to that date, authority for steel import licensing and monitoring was derived from Proclamation 7529 of March 5, 2002 (67 FR 10553). Pursuant to sections 201 and 203 of the 1974 Trade Act, 19 U.S.C. 2251, 2253, Proclamation 7529 implemented safeguard measures with respect to certain imported steel products, placing temporary tariffs on these steel imports and providing the steel industry time to restructure. The monitoring system outlined in Proclamation 7529 required all importers of steel products to obtain a license from the Department prior to completing their customs entry summary documentation. This provided a monitoring tool to ensure that the effectiveness of the steel safeguard measures was not undermined by large quantities of imports originating from countries that were excluded from the tariffs.

In Proclamation 7741 of December 4, 2003 (68 FR 68483), the President terminated the steel safeguard measures, but directed the Secretary of Commerce to continue the monitoring system until the earlier of March 21, 2005, or such time as the Secretary of Commerce established a replacement program. On December 9, 2003, the Department published a notice stating that the system would continue in effect as described in Proclamation 7741 until March 21, 2005 (68 FR 68594). On August 25, 2004, the Department published an advance notice of proposed rulemaking soliciting comments from the public on whether to continue the monitoring system beyond March 21, 2005 (69 FR 52211). The Department changed the program's name from the Steel Import Licensing and Surge Monitoring program to the Steel Import Monitoring and Analysis (SIMA) system. The name change was notified in the publication of the August 2004 advance notice (69 FR 52211). On March 11, 2005, the Department published an interim final rule responding to the comments received from the public and implementing a slightly expanded version of SIMA until March 21, 2009. That interim final rule was followed by the publication of the final rule on December 5, 2005 (70 FR 72373).

On December 12, 2008, a proposed rule was published in the **Federal Register** (73 FR 75624) seeking an extension of the SIMA system through March 21, 2013 and asking for comments from the public. The Department received twelve submissions, all of which expressed support for the extension. On March 18,

2009, the Department issued the final rule (74 FR 11474) to extend the application of the SIMA system until March 21, 2013. On November 13, 2012 (77 FR 67593), the Department published a proposed rule seeking comments on an extension of the SIMA system through March 21, 2017. The Department received three submissions, all of which expressed support for the extension. The Department issued the final rule to extend the application of the SIMA system until March 21, 2017 (78 FR 11090). On October 13, 2016, the Department published a proposed rule seeking comments on an extension of the SIMA system through March 21, 2022 (81 FR 70650). The Department received two submissions, both of which expressed support for the extension. The Department is issuing this final rule to extend the application of the SIMA system until March 21, 2022. The sole change included in this final rule was extending the program's lifespan to five years (the program's previous lifespan was four years—at which time an extension of the program must be proposed).

The purpose of the SIMA system is to provide steel producers, steel consumers, importers, and the general public with accurate and timely information on anticipated imports of certain steel products. Import licenses, obtained through the Internet-based SIMA licensing system, are required for U.S. imports of basic steel mill products. Aggregate import data obtained from the licenses are updated weekly and posted on the SIMA Web site monitor. Details of the current system can be found at *http://enforcement.trade.gov/steel/license/.*

Response to Comments

Submissions received during the public comment period established in the proposed rule have been considered in preparing this final rule. Two submissions were received, one from a coalition of nine steel trade groups (referred to as the ''industry''), and one from a large steel-producing company in the United States, AK Steel Corporation. Both of the submissions supported the five-year extension and agreed that the system is a critical tool that helps the industry closely monitor steel imports. The comments are summarized below. The two submissions received are posted on the Federal rulemaking portal at *www.Regulations.gov* as well as on the SIMA Web site at *http://enforcement.trade.gov/steel/license/.*

Comment 1: Commenters strongly support the extension of the SIMA system for an additional five years. They state that given the current global overcapacity in steel that is fueling surges in steel imports, the SIMA system gives the public access to the timeliest information possible regarding import patterns and changes, particularly increases in volumes. They also view the system as an important and transparent tool to support rational decision-making by all interested parties—steel producers, steel consumers, importers and U.S. government officials.

Response: The Department agrees that the SIMA system provides the public valuable and timely information on steel mill imports. The Department also agrees that making aggregate import volume and pricing data drawn from the licenses publicly available provides all interested stakeholders with a more informed understanding of changing market conditions in a transparent manner.

Comment 2: Commenters state that there is no significant burden on the steel importing community to comply with the licensing requirements of the SIMA system, and that this has been confirmed over the last 12 years in its current format, which remains unchanged by the proposed rule.

Response: The Department agrees that there is no significant burden on steel importers arising out of SIMA system licensing requirements. The web-based licensing system is automatic and free of charge. The Department estimates that it continues to take no longer than ten minutes to complete the automated license form, and for most applicants, the time spent is much less.

Comment 3: Commenters suggest that the Department make the SIMA system permanent rather than extend it for another five years. They state that the system has proven its effectiveness as an important analytical tool for both steel producers and consumers.

Response: Broad authority to collect information on imports is granted to the Secretary of Commerce and delegated to the Director of the Bureau of the Census. When the original safeguard authority for the SIMA system granted by the President expired in March 2005, the system was continued pursuant to this Department of Commerce information collection authority (13 U.S.C. 301(a) and 302). For purposes of administering the SIMA system, this authority was temporarily transferred from the Director of the Census Bureau to the Under Secretary for International Trade for four years. One of the conditions of the temporary transfer of authority to the Under Secretary for International Trade was that any future periodic extension of the SIMA system be notified to the Secretary and subject to review. Therefore, establishment of a permanent system is not possible under current authority.

For the reasons discussed above, the proposed rule (19 CFR part 360) is made final without changes.

Classification

Executive Order 12866

This rule has been determined to be not significant for purposes of Executive Order 12866.

Executive Order 13132

This rule does not contain policies with federalism implications as that term is defined in Executive Order 13132.

Regulatory Flexibility Act.

The Chief Counsel for Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration at the proposed rule stage, that this rule, if adopted, would not have a significant economic impact on a substantial number of small entities as that term is defined in the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.* The factual basis for the certification is found in the proposed rule and is not repeated here. No comments were received on the certification or the economic impacts of this action. As a result, no final regulatory flexibility analysis is required and none was prepared.

Paperwork Reduction Act

This final rule contains collection-of-information requirements subject to review and approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA). These requirements have been approved by OMB (OMB No. 0625–0245; Expiration Date: 1/31/2018). Public reporting for this collection of information is estimated to be less than ten minutes per response, including the time for reviewing instructions and completing and reviewing the collection of information. All responses to this collection of information are voluntary, and will be provided confidentially to the extent allowed by law.

Notwithstanding any other provision of law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the Paperwork Reduction Act unless that collection displays a currently valid OMB Control Number.

List of Subjects in 19 CFR Part 360

Administrative practice and procedure, Business and industry,

Imports, Reporting and recordkeeping requirements, Steel.

Dated: December 23, 2016.

Paul Piquado,

Assistant Secretary for Enforcement & Compliance.

For reasons discussed in the preamble, 19 CFR part 360 is amended as follows:

PART 360—STEEL IMPORT MONITORING AND ANALYSIS SYSTEM

■ 1. The authority citation for part 360 continues to read as follows:

Authority: 13 U.S.C. 301(a) and 302.

■ 2. Section 360.105 is revised to read as follows:

§ 360.105 Duration of the steel import licensing requirement.

The licensing program will be in effect through March 21, 2022, but may be extended upon review and notification in the **Federal Register** prior to this expiration date. Licenses will be required on all subject imports entered during this period, even if the entry summary documents are not filed until after the expiration of this program. The licenses will be valid for 10 business days after the expiration of this program to allow for the final filing of required Customs documentation.

[FR Doc. 2016–31667 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

PEACE CORPS

22 CFR Part 305

RIN 0420–AA26

Eligibility and Standards for Peace Corps Volunteer Service

AGENCY: Peace Corps.

ACTION: Final rule.

SUMMARY: The Peace Corps issues this final rule to restate and update the requirements for eligibility for Peace Corps Volunteer service, and the factors considered in the assessment and selection of eligible applicants for training and service. The requirements and factors for eligibility and selection were last published in 1984. A revision of the regulation is necessary to conform to changes in Federal laws and regulations, particularly with respect to those prohibiting discrimination on the basis of disability, and to reflect policy changes made by the Peace Corps.

DATES: The final rule is effective on January 5, 2017.

FOR FURTHER INFORMATION CONTACT: Anthony F. Marra, Associate General Counsel, Peace Corps, 1111 20th Street NW., Washington, DC 20526.

SUPPLEMENTARY INFORMATION:

I. Background

Under the Peace Corps Act (22 U.S.C. 2501 *et seq.*), the Peace Corps is authorized to enroll qualified U.S. citizens and nationals as Volunteers to serve abroad, under conditions of hardship if necessary, (i) to help the people of interested countries meet their need for trained manpower, particularly in meeting the basic needs of those living in the poorest areas of such countries, (ii) to help promote a better understanding of the American people on the part of the people served, and (iii) to help promote a better understanding of other peoples on the part of the American people. The Peace Corps is authorized to establish the terms and conditions of enrollment of Volunteers, as well as the terms and conditions of service. The Peace Corps published a proposed rule on July 31, 2015 (80 FR 45620) to revise and update the 30 year-old regulation concerning eligibility and selection standards for Peace Corps Volunteer service. The comment period for the proposed rule ended on August 31, 2015, and the Peace Corps received three comments.

II. Summary of Rulemaking

The revised rule will make the following changes:

(1) Introduction. The introductory section (22 CFR 305.1) provides new definitions for the three stages (Applicant, Trainee, and Volunteer) that an individual who is interested in service as a Volunteer passes through. It also provides a definition of the term ''enrollment'', which is used in connection with an individual's service as a Volunteer. The section includes a general statement explaining the process the Peace Corps follows in the selection of Volunteers and provides notice to applicants regarding the importance of submitting complete and accurate information in the application process. The section eliminates the recitation of the various anti-discrimination statutes that the Peace Corps is obligated to follow and replaces it with a clear statement that the Peace Corps does not discriminate on various grounds in the selection of Volunteers. Note that with regard to prohibiting discrimination on the basis of disability in the programs and activities of the Peace Corps, the agency is in the process of developing its section 504 implementing regulation and plans to coordinate the regulation's development with the Department of Justice pursuant to the requirements of Executive Order 12250. The section advises that applicants may be disqualified, and Volunteers and Trainees may be separated, if the Peace Corps determines they provided materially false, misleading, inaccurate, or incomplete information during the Peace Corps application process.

(2) Eligibility. The eligibility section (22 CFR 305.2) is simplified to address only the existing citizenship and age criteria for Volunteer applicants. Other eligibility factors in the current § 305.2 are moved to succeeding sections, where they are updated and expanded.

(3) Selection Standards. A revised § 305.3 incorporates the selection factors that previously appeared in § 305.4. The revision restates the attributes that an applicant must meet for Volunteer service. It revises the description of the various personal attributes that are taken into account when evaluating applicants. The revised § 305.3 explains that the Peace Corps assesses each applicant's personal, professional, educational, and legal qualifications in order to select those applicants most likely to be successful in a Peace Corps assignment, serving under conditions of hardship if necessary, to achieve the goals of the Peace Corps. Meeting the several qualifications does not in and of itself entitle any individual to serve in the Peace Corps, because the revision states that the Peace Corps endeavors to select the best qualified individuals from among all eligible applicants.

(4) Medical Status. The revised part 305 creates a new § 305.4 that replaces the provision on the medical qualifications of applicants that previously appeared in § 305.2. The revised section implements, in relation to applications for Volunteer service, Section 504 of the Rehabilitation Act. It states that an applicant must have the physical and mental capacity required to meet the essential eligibility requirements for a Volunteer and sets out those essential eligibility requirements, which include the capability to:

A revised § 305.4(a)(1)(i)–(iii) addresses medical stat.

It also requires that, in order for an applicant to be medically qualified for Volunteer service, the Peace Corps must have the capability to provide necessary or appropriate health care for the applicant. It includes a requirement that the Peace Corps consider reasonable accommodations in determining whether an applicant has the physical and mental capacity required to meet the essential eligibility requirements for a Volunteer and whether the Peace Corps has the capability to provide necessary or appropriate health care for the applicant.

A new provision provides that an applicant must not pose a direct threat, which is defined as a significant risk to the health and safety of others that cannot be eliminated by reasonable accommodation, removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids or services.

The revisions include a requirement that an applicant's medical eligibility be based on an individualized assessment of the factors applicable to reasonable accommodations. An applicant determined not to be medically qualified for Volunteer service has a right to obtain a further review of the determination by a physician and, ultimately, by a review panel. In any case involving review of issues of mental health, at least one professional staff person from the Counseling and Outreach Unit also participates as a voting member of the review panel. The decision of the review panel, which is reviewed by the General Counsel for legal sufficiency, constitutes a final agency action and is not subject to further appeal.

(5) Legal Status. A new § 305.5 changes the eligibility qualifications for an applicant who is on parole or probation, previously covered in § 305.2(d), and reframes the eligibility standard in terms of the existence of an arrest or conviction record. The revision provides the Peace Corps with greater flexibility to consider the nature of the offense, how long ago the offense occurred, whether the applicant was acquitted of the offense, the terms of any applicable parole or probation, and other relevant facts or indications of rehabilitation. Specific standards will be established for drug and alcohol related offenses. An applicant rejected because of an arrest or conviction will have a right to have a review of the rejection by a more senior Peace Corps official outside of the office that made the original eligibility determination. The new provision will also eliminate the requirement that an applicant not have any court established financial or other obligation that cannot be satisfied or postponed during a Peace Corps service period.

(6) Intelligence Background. The Peace Corps has a longstanding policy to exclude from Volunteer service individuals who have engaged in intelligence activity or related work or who have been employed by or connected with an intelligence agency, either for a specific period of time or permanently (depending on the agency). This policy is founded on the premise that it is crucial to the Peace Corps in carrying out its mission that there be a complete and total separation of the Peace Corps from the intelligence activities of the United States Government or any foreign government, both in reality and appearance.

The previous regulation contained a one-sentence statement in § 305.2(e) regarding the eligibility of applicants having a background with an intelligence agency or intelligence activities. It referred applicants to provisions of the Peace Corps Manual for more details. The new § 305.6 provides greater transparency for applicants regarding this policy.

The policy covers both employment (defined broadly) by an intelligence agency and engagement in intelligence activities. It applies to an employee of an intelligence agency even if the employee was not engaged in intelligence activities for the intelligence agency. An applicant who was employed by an intelligence agency (other than the CIA) or engaged in intelligence activities is barred from Peace Corps service for a minimum of 10 years. An applicant who was employed by the CIA is barred from Peace Corps service permanently.

The policy also applies to an applicant whose background discloses a relationship to an intelligence agency or intelligence activity, but who was not employed by an intelligence agency or engaged in intelligence activities. Such a relationship might be one based on familial, personal or financial connections to an intelligence agency or intelligence activities. In these cases, the period of ineligibility will be determined by the General Counsel based on a number of stated factors.

Serious doubts about an applicant's connection with intelligence agencies or activities are to be resolved in favor of exclusion. An applicant rejected based on an intelligence background criteria has a right to appeal the rejection to the Peace Corps Director.

(7) Special Circumstances. A new § 305.7 addresses special circumstances involving some applicants, which were previously covered in § 305.2(f), (g) and (h).

The former § 305.2(f) placed restrictions on Peace Corps Volunteer service for applicants who are married and who wish to serve without their spouse. These restrictions have been removed as they are no longer relevant to eligibility for Volunteer service. In addition, a new § 305.7(a) expressly provides that two applicants who are married or are in a same sex or opposite sex domestic partnership or committed relationship may apply to serve together. This codifies in regulation the Peace Corps policy on placement of couples, including its recent policy to accept same-sex and opposite-sex couple applicants on an equal basis whether married, or unmarried and in a committed relationship/domestic partnership.

The former § 305.2(g) places restrictions on the ability of an applicant who has dependent children under the age of 18 to serve as a Peace Corps Volunteer. These restrictions have been removed because they are not relevant to the ability of an individual to serve as a Volunteer. However, a new provision has been added that generally prohibits dependents and other family members from accompanying a Volunteer during service. This provision permits the Peace Corps to make exceptions from time to time either on a case-by-case basis or for particular categories of Volunteers to the extent permitted by Federal law.

The previous policy on military service obligations of applicants that was contained in § 305.2(h) is continued in § 305.7(c), but the written statement from a commanding officer is no longer required.

(8) Background Investigation. Section 22 of the Peace Corps Act requires that applicants be investigated to ensure that their assignment ''is consistent with the national interest.'' The Peace Corps previously satisfied this statutory requirement under § 305.3, which required a National Agency Check (NAC) and background investigation for all applicants. A NAC is a clearance conducted by the Federal Investigations Services of the U.S. Office of Personnel Management (OPM) and is the minimum clearance required for all civilian Federal employees. Peace Corps has required that Volunteer applicants be cleared through a NAC investigation for many years, in large part because it was initially the only feasible way to comply with Section 22 of the Peace Corps Act. However, there are now other commercial, non-governmental investigative entities approved by the General Services Administration that can provide equivalent clearance services for Volunteer applicants.

The revision of part 305 includes a new § 305.8, replacing the former § 305.3. It retains the requirement that all an appropriate background investigation be completed for all Applicants who are invited to serve in the Peace Corps. However, it does not specify that the background investigation be OPM's Federal Investigations Services background investigation for Federal employment positions. This change gives Peace Corps flexibility to use other contractors to conduct background investigations,

as well OPM's Federal Investigative Services.

III. Changes From Proposed to Final Rule

The Peace Corps has made the following non-substantive changes to the final rule.

(1) It has eliminated the provision for the enrollment of persons who are non-citizens but who have made satisfactory arrangements to be naturalized. This provision of the proposed rule aligns with the Peace Corps Act, which stipulates that enrollment as a Volunteer is limited to U.S. citizens and nationals. Furthermore, this provision has not in practice been necessary or appropriate, as all applicants are required to have U.S. passports prior to travel overseas for pre-service training.

(2) It has amended the age requirement to make clear that Applicants must reach the age of 18 prior to becoming a Trainee (as opposed to at the time of enrollment). This correction is needed for the eligibility requirement so that only adults can become Trainees. The age of 18 is the standard for adulthood under the laws of most states.

(3) The specific number of medical personnel required to staff the Pre-Service Review Board has been deleted as unnecessarily detailed and overly constraining on the Peace Corps' decisions on how to staff the Board.

(4) The requirement for an affidavit in connection with applying for service as a member of an unmarried couple has been replaced with a requirement for a sworn statement, to allow for greater ease in electronic submission of this information.

IV. Responses to Comments

The Peace Corps received three comments on the proposed rule.

Comment 1: One commenter had a number of thoughtful suggestions about the order of the presentation of various topics in the Peace Corps application for Volunteer service, presumably on the assumption that the order of the topics in the proposed rule would be the same order in the application.

Response: The application is a separate document and is periodically revised and does not necessarily follow the order of presentation of topics in the proposed rule. The commenter's suggestions will be useful for a future revision of the application.

Comment 2: Another commenter objected to the provision in the proposed rule that would give the Peace Corps the flexibility to have the statutorily required background investigation performed by outside contractors, rather than the Federal Investigations Services of the U.S. Office of Personnel Management. The commenter cited concerns about the reliability of investigations performed by outside contractors.

Response: The Peace Corps recognizes the commenter's concerns and will address them by limiting the use of outside contractors to those approved to conduct background investigations by the General Services Administration.

Comment 3: A third commenter recommended that any Volunteer who ends service, before completion of the full 27 months of service, except for medical reasons, should have to pay back to the Peace Corps some proportionate amount related to the actual amount spent by the Peace Corps to train and transport the Volunteer to the country of service.

Response: The Peace Corps appreciates the commenter's position, but does not view the proposal as workable. Peace Corps service is entirely voluntary and there are many valid reasons, in additional to medical, for a Volunteer to terminate his or her service before the normal 27 month service period. Furthermore, the threat of the imposition of an exit fee would likely reduce interest in Peace Corps service.

Statement of Effects

Executive Order 12866

The Office of Management and Budget (OMB) has reviewed the proposed regulatory action under Executive Order 12866 and has determined that it is not a significant regulatory action within the meaning of the Executive Order. Consistent with the Executive Order, the Peace Corps is providing an explanation of the need for the regulatory action and an assessment of the potential costs and benefits of the regulatory action.

(1) Need for Regulatory Action. Under Section 5(a) of the Peace Corps Act (22 U.S.C. 2504(a)), the Peace Corps is entitled to enroll qualified citizens and nationals into Peace Corps service and is delegated authority to establish the terms and conditions of enrollment. The Peace Corps last published its terms and conditions of enrollment in 1984 and those rules are outdated and need to reflect current laws and policies that have been implemented over the past 30 years. In addition, the structure of the current regulation needs to be revised to simplify the description of the information required in order to apply to the Peace Corps, as well as the explanation of the Peace Corps selection process as described in the Supplementary Information section.

(2) Potential Costs and Benefits. It is difficult to precisely quantify the costs and benefits of the new regulation that is designed to reflect current law and regulations and to make it easier for American citizens to apply for service as a Peace Corps Volunteer. However, the Peace Corps has concluded that the current regulatory structure, and the accompanying application form, is seen as a daunting, confusing and time-consuming process, which has discouraged many Americans who might otherwise be interested in and well-qualified for Volunteer service. The new regulation will improve the possibility of the most suitable candidates being selected as a Volunteer, decrease the barriers to service and broaden the rights of applicants. This will be a substantial benefit to all Americans who want to serve as Volunteers, as well as being a benefit to the Peace Corps which is interested in creating a large, diverse pool of qualified, suitable candidates to serve abroad as Volunteers. The Peace Corps estimates that agency staff will spend less time reviewing each individual application, because the application itself will be shorter. For 2016, the Peace Corps anticipates that use of the new application will result in a savings of $95.00 per application, compared to the former application. With 22,000 expected applications for the year, the new application is expected to provide a savings of $1,384,000 resulting from the reduction in staff time spent reviewing applications. However, the agency expects that the total number of completed applications will increase, and that the agency will not realize immediate cost savings from these changes.

The former regulation listed nine factors as relevant to the determination of eligibility. These factors include citizenship, age, medical status, legal status, intelligence background, marital status, dependents, military service, and failure to disclose requested information. This listing combined factors that are basic, clear-cut requirements for Peace Corps service, such as the citizenship requirement (under the Peace Corps Act only citizens and nationals can be Volunteers), with factors that are more relevant to whether an applicant is suitable for Volunteer service, where an applicant could effectively serve, or whether the applicant has the requisite qualifications to serve as a Volunteer, which involve more judgmental and situational issues. As a result, the Peace Corps has found that many potential

applicants, after reviewing the nine requirements, make self-judgments that they are not eligible to apply for Volunteer service. In addition, the application form that had been in use until June 30, 2014 was over 61 Web pages long and took approximately eight hours to complete. This was an added deterrence to many potential applicants. Approximately 75 percent of the annual 40,000 individuals who started the application never finished it due to its length and density. The Peace Corps has recently introduced a new application, which is 9 Web pages rather than the former 61 pages. It is estimated that each applicant will save approximately 7 hours with the shorter application form. The shorter application will clearly benefit applicants, because it will result in a reduced paperwork burden on applicants. The Peace Corps estimates that the shorter application form will result in a savings to the public of approximately $5,840,000. This is based on (i) an assumed hourly wage equivalent of $37.94 derived from the median wage earnings, including overhead and benefits, for persons age 25 or over who have attained a bachelor's degree, (ii) the reduction of 7 hours spent on the application, and (iii) 22,000 applications in 2015.

The shorter application should also increase the pool of individuals who complete an application from the current 10,000 per year to over 20,000 per year. Although the Peace Corps is able to simplify the application form without regard to a regulatory change, the new regulation is needed to accurately reflect the current laws and policies that relate to the Volunteer selection process.

The new regulatory action addresses deficiencies in the current regulation that have deterred potential applicants and reduced the applicant pool. The new regulation specifies only two baseline eligibility requirements for applying to the Peace Corps. An applicant must be a citizen or national of the United States and at least 18 years of age. The regulation clearly enumerates the suitability and qualification standards that are used by the Peace Corps in determining who should be invited to enroll as a Volunteer. It explains that an applicant must demonstrate suitability for Peace Corps service generally and for the particular assignment for which the applicant is being considered. It describes the medical qualifications that are applied, taking into account Section 504 of the Rehabilitation Act of 1973.

The new regulation gives the Peace Corps greater flexibility in accepting applicants with arrest or conviction records. It provides a more complete description of how the Peace Corps considers applicants who have worked for intelligence agencies or engaged in intelligence activities. The former regulation merely stated that an applicant with an intelligence background may be disqualified, without an explanation of the criteria for disqualification in the regulation. As a result, applicants could have initiated and completed the lengthy application process only to be informed that they are not eligible for Volunteer service because of having worked for intelligence agencies or having engaged in intelligence activities. Other applicants may have been deterred from applying because they concluded that any connection to an intelligence background disqualifies an applicant. By explaining the intelligence background criteria front-end, applicants will be more informed about whether they meet Peace Corps selection standards and whether it is worth their time to initiate the application process.

The new regulation also reflects the new policy of the Peace Corps to accept same sex and opposite sex couple applicants on an equal basis whether married or unmarried in a committed relationship. It removes some of the restrictions on applicants who have dependent children under the age of 18. Finally, the new regulation incorporates appeal rights when an applicant has been rejected on grounds relating to medical status, an arrest or conviction record, or for having a background in intelligence activities. Any applicant in an expanded list of protected categories who thinks that he or she had been discriminated against is given the option for review and consideration by the Office of Civil Rights and Diversity at the Peace Corps. These changes to the Volunteer application process will provide an easier, clearer, faster and more equitable and consistent process for potential applicants, and result in a greater number of well-qualified applicants available for Peace Corps Volunteer service.

Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b))

The Director of the Peace Corps certifies that this regulatory action will not have a significant adverse impact on a substantial number of small entities. The regulation only applies to individuals who are interested in service as a Volunteer and has no application to small entities.

Unfunded Mandates Act of 1995 (Sec. 202, Pub. L. 104–4)

This regulatory action does not contain a Federal mandate that will result in the expenditure by State, local, and tribal governments, in aggregate, or by the private sector of $100 or more in any one year.

Paperwork Reduction Act of 1995 (44 U.S.C., Chapter 35)

This regulatory action does not contain any paperwork or recordkeeping requirements and does not require clearance under the Paperwork Reduction Act. The Peace Corps Volunteer application form for Volunteer service referenced in the regulation has been approved by the Office of Management and Budget (Control Number 0420–0005).

Federalism (Executive Order 13132)

This regulatory action does not have Federalism implications, as set forth in Executive Order 13132. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

Executive Order 12291

This document is not a major rule as described in Executive Order 12291.

Lists of Subjects in 22 CFR Part 305

Aged, Citizenship and naturalization, Civil rights, Discrimination, Equal employment opportunity, Foreign aid, Health, Individuals with disabilities, Intelligence, Nondiscrimination, Political affiliation, Volunteers.

■ For the reasons set out in the preamble, the Peace Corps revises 22 CFR Part 305 to read as follows:

PART 305—ELIGIBILITY AND STANDARDS FOR PEACE CORPS VOLUNTEER SERVICE

Sec.
305.1 Purpose and general guidelines.
305.2 Eligibility.
305.3 Selection standards.
305.4 Medical status eligibility standards.
305.5 Legal status eligibility standards.
305.6 Applicants with an intelligence background.
305.7 Special circumstances.
305.8 Background investigation.

Authority: 22 U.S.C. 2503, 2504 2521; 29 U.S.C. 794; E.O. 12137, 44 FR 29023, 3 CFR, 1979 Comp., p. 389; E.O. 13160, 65 FR 39775, 3 CFR, 2000 Comp., p. 1461.

§ 305.1 Purpose and general guidelines.

This part states the requirements for eligibility for Peace Corps Volunteer

service and the factors considered in the assessment and selection of eligible applicants for Peace Corps Volunteer service.

(a) *Definitions.* For purposes of this part:

(1) *Applicant* means an individual for enrollment as a Volunteer, who has completed and submitted the Peace Corps Volunteer application form.

(2) *Trainee* means an individual for enrollment as a Volunteer during any period of training occurring prior to such enrollment.

(3) *Volunteer* means an individual who has taken the prescribed oath and enrolled for service in the Peace Corps.

(4) *Enrollment* means the act by which an individual becomes a Volunteer upon successful completion of training and taking the prescribed oath of office pursuant to Section 5 of the Peace Corps Act, 22 U.S.C. 2504.

(5) *Dependent* means an individual for whom an applicant or Volunteer has a legal or familial obligation to provide financial support.

(6) *Family member* means any individual related by blood or affinity whose close association with the applicant or Volunteer is the equivalent of a family relationship.

(b) *Selection.* Invitations to serve in the Peace Corps are the result of a highly competitive application process. Many more individuals apply for Peace Corps Volunteer service than can be accepted. Because the Peace Corps cannot accept all eligible and qualified applicants who wish to serve, it evaluates applicants to select the best qualified among eligible applicants. The Peace Corps determines Applicants' eligibility, and assesses their relative skills, qualifications, and personal attributes, such as motivation, aptitude, fitness for service, emotional maturity, adaptability, productive competence, and ability to serve effectively as a Volunteer in a foreign country and culture.

(c) *Authority.* Under section 5(a) of the Peace Corps Act, 22 U.S.C. 2504(a), the President may enroll in the Peace Corps for service abroad qualified citizens and nationals of the United States. The terms and conditions of the enrollment of Volunteers are exclusively those set forth in the Peace Corps Act and those consistent therewith which the President may prescribe. The President has delegated his authority under section 5(a) of the Peace Corps Act to the Director of the Peace Corps pursuant to Executive Order 12137 (May 16, 1979), as amended.

(d) *Non-discrimination.* The Peace Corps does not discriminate against any person on account of race, color, religion, sex (including but not limited to gender identity and gender expression), national origin, age (40 and over), disability, sexual orientation, gender identity, gender expression, pregnancy, marital status, parental status, political affiliation, union membership, genetic information, or history of participation in the EEO process, any grievance procedure or any authorized complaint procedure. Anyone who feels he or she has been discriminated against should contact the Office of Civil Rights and Diversity, 202.692.2139, *ocrd@peacecorps.gov,* Peace Corps, 1111 20th Street NW., Washington, DC 20526.

(e) *Failure to disclose requested information.* In order for the Peace Corps to be able to make appropriate selection and placement decisions, it is critical that Applicants provide complete and accurate information throughout the application process, including information provided for a mandatory background investigation. The Peace Corps may disqualify an Applicant or separate a Volunteer or Trainee from Peace Corps service at any time if the Peace Corps determines that the Applicant, Volunteer, or Trainee provided materially false, misleading, inaccurate or incomplete information during the Peace Corps application process.

§ 305.2 Eligibility.

In order to be eligible for enrollment as a Volunteer, Applicants must meet mandatory citizenship and age requirements.

(a) *Citizenship.* The Applicant must be a citizen or national of the United States prior to entering on duty as a Trainee.

(b) *Age.* The Applicant must be at least 18 years old at the time of entry on duty as a Trainee.

§ 305.3 Selection standards.

(a) *General.* To qualify for selection for overseas service as a Volunteer, an Applicant must demonstrate that he or she is suitable, possessing the requisite personal and professional attributes required for Peace Corps service generally, and for the particular Volunteer assignment for which he or she is considered. The Peace Corps assesses each Applicant's personal, professional, educational, and legal qualifications in order to select those Applicants most likely to be successful in a Peace Corps assignment, serving under conditions of hardship if necessary to achieve the goals of the Peace Corps. Meeting these qualifications does not in and of itself entitle any individual to serve in the Peace Corps. The Peace Corps endeavors to select the best qualified individuals from among all eligible Applicants.

(b) *Personal attributes.* Applicants must adequately demonstrate the following personal attributes to Peace Corps:

(1) *Motivation.* A sincere desire to carry out the goals of Peace Corps service, and a commitment to serve a full term as a Volunteer.

(2) *Productive competence.* The intelligence and professional experience or educational background to meet the needs of the individual's assignment.

(3) *Emotional maturity and adaptability.* The maturity, flexibility, cultural sensitivity, and self-sufficiency to adapt successfully to life in another culture, and to interact and communicate with other people regardless of cultural, social, and economic differences.

(4) *Skills.* In addition to any educational, professional or other qualifications and prerequisites that an individual must possess in order to be selected for a given assignment, a Trainee must demonstrate competence in the following areas by the end of pre-service training:

(i) *Language.* The ability to communicate effectively in the appropriate language or languages of the country of service with the fluency required to meet the needs of the overseas assignment.

(ii) *Technical competence.* Proficiency in the technical skills needed to carry out the Trainee's assignment as a Volunteer.

(iii) *Knowledge.* Adequate knowledge of the culture and history of the country of assignment to ensure a successful adjustment to, and acceptance by, the host country society, as well as an appropriate understanding of the history and government of the United States which qualifies the individual to represent the United States abroad.

(c) *Failure to meet standards.* Failure to meet initial selection standards, failure to attain any of the selection standards by the completion of training, or failure to maintain these standards during service, may be grounds for de-selection and disqualification from Peace Corps service.

§ 305.4 Medical status eligibility standard.

(a) *Requirements.* Under the Peace Corps Act (22 U.S.C. 2504(e)), the Peace Corps is responsible for ensuring that Peace Corps Volunteers receive all necessary or appropriate health care during their service. To ensure that the Peace Corps will be capable of doing so, Applicants must be medically qualified for Peace Corps Volunteer service. An

Applicant who is otherwise qualified must meet the following requirements:

(1) The Applicant, with or without reasonable accommodation, removal of architectural, communication or transportation barriers, or the provision of auxiliary aids or services, must have the physical and mental capacity required to meet the essential eligibility requirements for a Volunteer. In this context, the essential eligibility requirements for a Volunteer include, without limitation, the capability to:

(i) Live and work independently in an isolated location overseas at the same socio-economic level and in similar conditions as members of the community to which the Applicant is assigned;

(ii) Perform the job to which the Applicant is assigned; and

(iii) Complete a specified tour of service without undue disruption.

(2) The Peace Corps must be capable of providing the Applicant with such health care as the Peace Corps deems to be necessary or appropriate.

(3) The Applicant must not pose a direct threat (as defined in paragraph (c) of this section).

(b) *Individualized assessment.* In determining whether an Applicant is medically qualified, an individualized assessment is required regarding each of the requirements set forth in paragraph (a) of this section.

(c) *Direct threat.* (1) A ''direct threat'' is a significant risk to the health or safety of others that cannot be eliminated by a reasonable accommodation to policies, practices or procedures, removal of architectural, communication or transportation barriers, or the provision of auxiliary aids or services.

(2) In determining whether an applicant poses a direct threat, the Peace Corps will make an individualized assessment based on reasonable judgment that relies on current medical knowledge or on the best available objective evidence to ascertain:

(i) The nature, duration and severity of the risk;

(ii) The probability that the potential injury will actually occur; and

(iii) Whether reasonable accommodations, removal of architectural, communication or transportation barriers, or the provision of auxiliary aids or services will mitigate the risk.

(d) *Reasonable accommodation.* (1) The term ''accommodation'' means modifications to the Peace Corps' policies, practices or procedures.

(2) An accommodation is not reasonable if:

(i) It would modify the essential eligibility requirements for a Volunteer;

(ii) It would modify, among other things, the Applicant's Volunteer assignment or the Peace Corps' medical program in a way that would result in a fundamental alteration in the nature of the service, program, or activity; or

(iii) It would impose an undue financial and administrative burden on the operations of the Peace Corps, including its medical program.

(3) In determining whether an accommodation would impose an undue financial and administrative burden on the operations of the Peace Corps, the Peace Corps may take into account, among other things:

(i) The size and composition of the Peace Corps staff at the post of assignment;

(ii) The adequacy of local medical facilities and the availability of other medical facilities;

(iii) The nature and cost of the accommodation compared to the overall number of Volunteers and the overall size of the Peace Corps budget; and

(iv) The capacities of the host country agency and of the host community to which the Applicant would be assigned.

(e) *Medical status eligibility review.* (1) An Applicant who is determined by medical screening staff not to be medically qualified for Peace Corps Volunteer service may request review of that decision by submitting any relevant information to the Office of Medical Services (OMS). The information submitted by the Applicant will be reviewed by a physician, and, unless the physician determines that the Applicant is medically qualified, by a Pre-Service Review Board (PSRB) composed of medical personnel in OMS and advised by the General Counsel. Procedures for such review are subject to approval by the General Counsel.

(2) The PSRB will include as voting members at least one physician as well as other medical professionals in OMS. In any case involving review of issues involving mental health, at least one mental health professional from the Counseling and Outreach Unit will also participate as a voting member.

(3) The decision of the PSRB will be reviewed by the General Counsel for legal sufficiency. Subject to that review, it will constitute the final agency action.

§ 305.5 Legal status eligibility standard.

(a) *General requirements.* The existence of an arrest or conviction record may, but will not automatically, exclude an Applicant from consideration for Peace Corps service. The Peace Corps will consider the nature of the offense, how long ago the offense occurred, whether the Applicant was acquitted of the offense, the terms of any applicable parole or probation, and other relevant facts or indications of rehabilitation.

(b) *Drug and alcohol related offenses.* (1) An Applicant with any drug-related conviction, with a conviction for public intoxication, driving under the influence (DUI), or driving while intoxicated (DWI), with a conviction for reckless driving after having been initially charged with DUI or DWI, or with a similar alcohol-related conviction, is not eligible to have his or her application for Peace Corps service considered until 12 months has passed from the date of the incident.

(2) An Applicant who, at any time on or prior to the day of departure for Peace Corps service, is arrested for any drug offense or for public intoxication, DUI, DWI or any similar alcohol-related offense will have any pending application or invitation for Peace Corps service withdrawn. If the charges are dismissed, an Applicant whose application or invitation for Peace Corps service was terminated may immediately reapply. If the applicant is convicted of the offense, he or she may reapply after 12 months from the date of the incident.

(c) *Review process.* An Applicant who is rejected for a Volunteer position because of an arrest or conviction may request a review of that decision by submitting any relevant information to the Associate Director of the Office of Volunteer Recruitment and Selection (VRS). The Associate Director will review the information submitted and consult with the General Counsel. The decision of the Associate Director will be the final agency decision. The Associate Director may delegate authority to conduct such a review to another senior member of VRS, but not to the supervisor of the office making the original eligibility determination.

(d) *Subsequent application.* An Applicant rejected for service due to failure to meet the legal status eligibility standard may reapply at a later date, but not sooner than 12 months after the final agency decision.

§ 305.6 Applicants with an intelligence background.

(a) *General.* It has been the longstanding policy of the Peace Corps to exclude from Volunteer service any individuals who have engaged in intelligence activity or related work or who have been employed by or connected with an intelligence agency, either for a specific period of time or permanently (depending on the agency). This policy is founded on the premise

that it is crucial to the Peace Corps in carrying out its mission that there be a complete and total separation of Peace Corps from the intelligence activities of the United States Government or any foreign government, both in reality and appearance. Any semblance of a connection between the Peace Corps and the intelligence community would seriously compromise the ability of the Peace Corps to develop and maintain the trust and confidence of the people of the host countries. To ensure that there is not the slightest basis for the appearance of any connection between the Peace Corps and the intelligence community, this policy contains certain temporary and permanent bars to Peace Corps service. Serious doubts about an Applicant's connection with intelligence activities are to be resolved in favor of exclusion.

(b) *Definitions.* For purposes of this section:

(1) *Intelligence activity* includes any activities or specialized training involving or related to the clandestine collection of information, or the analysis or dissemination of such information, intended for use by the United States Government or any foreign government in formulating or implementing political or military policy in regard to other countries. The term ''intelligence activity'' includes any involvement in covert actions designed to influence events in foreign countries. The fact that the name of an employer or the description of a person's work uses or does not use the term ''intelligence'' does not, in and of itself, mean that the person has or has not engaged in intelligence activity or related work.

(2) *Intelligence agency* includes:

(i) Any agency, division of an agency, or instrumentality of the United States Government that is a member of the United States Intelligence Community; and

(ii) Any other agency, division of an agency, or instrumentality of the United States Government or any foreign government, a substantial part of whose mission has been determined by the General Counsel to include intelligence activities.

(3) *Employment, employee or employed* refer to the existence of a relationship of employer and employee, whether full-time or part-time, permanent or temporary, whether or not the individual is engaged in intelligence activity for an employer, without regard to the length of time the relationship existed or is proposed to exist, and includes individuals performing duties as volunteers, fellows, interns, consultants, personal services contractors, contractors (non-personal services contractors), and employees of contractors who were assigned to work for an intelligence agency or to engage in intelligence activities. Employees of contractors who were or are not themselves assigned to work for an Intelligence Agency or to engage in intelligence activities are not considered to have been or to be employed by an intelligence agency.

(c) *Employment by an intelligence agency or engagement in intelligence activities.* (1) An Applicant currently or formerly employed by the Central Intelligence Agency (CIA) is permanently ineligible for Peace Corps Volunteer service.

(2) An Applicant who has been employed by an intelligence agency other than the CIA is ineligible for a minimum of 10 years from the last day of employment by such intelligence agency. This bar on an Applicant who is or was employed by an intelligence agency applies whether or not the Applicant was engaged in intelligence activity for the intelligence agency.

(3) An Applicant who has been engaged in intelligence activities is ineligible for service as a Volunteer for a period of 10 years from the last date on which the Applicant engaged in intelligence activities.

(4) An Applicant may be ineligible for service for a period in excess of 10 years if the General Counsel determines that the Applicant's background or work history with regard to intelligence activities warrants such action.

(d) *Relationship to intelligence agency or activity.* (1) An Applicant whose background discloses a relationship to an intelligence agency or intelligence activity may be ineligible to serve as a Peace Corps Volunteer. The term ''relationship'' means any association with an intelligence agency or with an intelligence activity, if such association could be the basis for an inference or the appearance that an Applicant was engaged in an intelligence activity. The association could include, but not be limited to, one based upon a familial, personal or financial connection to an intelligence agency or with an intelligence activity.

(2) Determinations of the eligibility or periods of ineligibility of such Applicants will be made by the General Counsel on a case by case basis using the criteria set forth below. Examples of the type of relationships among others that could lead to ineligibility are Applicants whose spouses, domestic partners, or parents are or were involved in actual intelligence activities, or members of the immediate family of prominent highly placed officials in an intelligence agency who might be the target of harassment or violence overseas as the result of family connections. Employment by an organization that has been funded by an intelligence agency may also lead to ineligibility.

(3) In determining whether an Applicant's relationship to an intelligence agency or intelligence activity makes the Applicant ineligible for service, or in determining the duration of any ineligibility, the General Counsel will consider the following factors as appropriate:

(i) Nature of the relationship.

(ii) The intelligence agency with which the Applicant has the relationship.

(iii) Duration of the relationship.

(iv) Length of time that has elapsed since the last connection to the intelligence agency.

(v) Where the intelligence activity or work was performed.

(vi) Nature of the connection with intelligence activity or work.

(vii) Whether or not the intelligence activity or work involved contact with foreign nationals.

(viii) Whether the connection was known or unknown to the Applicant at the time it occurred.

(ix) Training received, if any.

(x) Regularity of the contact with foreign nationals, and nature of duties, if any.

(xi) Public knowledge of the activity or connection.

(xii) Any other information which bears on the relationship of the Applicant to an intelligence agency or intelligence activity.

(e) *Determination.* VRS is responsible for the initial screening of Peace Corps Volunteer applications for compliance with the provisions of this policy. In cases where that office is unable to make a decision regarding the eligibility of an Applicant under this policy, the individual's application will be referred to the General Counsel, who will make the determination on eligibility.

(f) *Appeal.* VRS will inform all Applicants promptly and in writing of any decision to disqualify them based on an intelligence background and the reasons for that decision. Applicants have 15 days from the date of receipt of the letter from VRS to appeal the decision to the Director of the Peace Corps. The decision of the Director of the Peace Corps will be the final agency decision.

(g) *Post Peace Corps employment by United States intelligence agencies.* Pursuant to agreements between the Peace Corps and certain intelligence agencies, those intelligence agencies will not employ former Volunteers for a

specified period after the end of their Peace Corps service and will not use former Volunteers for certain purposes or in certain positions. Information regarding such agreements may be obtained from the Office of the General Counsel.

§ 305.7 Special circumstances.

(a) *Couples.* Two Applicants who are married to one another or two unmarried Applicants who are in a same-sex or opposite-sex domestic partnership or other committed relationship are eligible to apply for service as a couple. In the case of an unmarried couple, each member of the couple must provide a sworn statement, in a form acceptable to the Peace Corps, attesting to their domestic partnership status or committed relationship (as the case may be) and their request to be considered for assignment as a couple. In all cases, both members of the couple must apply and qualify for assignment at the same location.

(b) *Serving with dependents and other family members.* In general, dependents and other family members may not accompany a Volunteer during service. However, the Peace Corps may from time to time make exceptions either on a case-by-case basis or for particular categories of Volunteers to the extent permitted by Federal law.

(c) *Military service.* The Peace Corps welcomes applications from veterans, reservists, and active duty military personnel who are interested in Peace Corps service after completion of their military service. After receiving an invitation for Peace Corps service, applicants with reserve obligations are reminded to comply with all requirements to notify their reserve component that they will be unavailable for drills and annual training because of their Peace Corps service. Such applicants are urged to obtain written confirmation from their reserve component that they have complied with these requirements.

§ 305.8 Background investigation.

Section 22 of the Peace Corps Act requires that each Applicant be investigated to ensure that enrollment of the Applicant as a Volunteer is consistent with the national interest. The Peace Corps therefore obtains an appropriate background investigation for all Applicants who are invited to serve in the Peace Corps. Information revealed by the background investigation may be grounds for disqualification from Peace Corps service. Under the Peace Corps Act, if a background investigation regarding an Applicant develops any data reflecting that the Applicant is of questionable loyalty or is a questionable security risk, the Peace Corps must refer the matter to the Federal Bureau of Investigation for a full field investigation. The results of that full field investigation will be furnished to the Peace Corps for information and appropriate action.

Dated: December 13, 2016.

William Stoppel,

Acting Associate Director, Management.

[FR Doc. 2016–30442 Filed 1–4–17; 8:45 am]

BILLING CODE 6051–01–P

DEPARTMENT OF DEFENSE

Office of the Secretary

32 CFR Part 154

[Docket ID: DOD–2016–OS–0121]

RIN 0790–AJ55

Department of Defense Personnel Security Program Regulation

AGENCY: Office of the Under Secretary for Intelligence, DoD.

ACTION: Final rule.

SUMMARY: This final rule removes DoD's regulation concerning personnel security. The codified rule is outdated and no longer accurate or applicable as written. The rule does not impose obligations on members of the public that are not already imposed by statute. It paraphrases and summarizes relevant sources of law and does not substantively deviate from them.

DATES: This rule is effective on January 5, 2017.

FOR FURTHER INFORMATION CONTACT: Patricia Toppings at 571–372–0485.

SUPPLEMENTARY INFORMATION: DoD internal guidance concerning personnel security will continue to be published in DoD Manual 5200.02. Once the revision of DoD Manual 5200.02 is signed, a copy will be made available at *http://www.dtic.mil/whs/directives/corres/pub1.html.*

It has been determined that publication of this CFR part removal for public comment is impracticable, unnecessary, and contrary to public interest since it is based on removing DoD internal policies and procedures that are publically available on the Department's issuance Web site.

The removal of this rule will be reported in future status updates of DoD's retrospective review plan in accordance with the requirements in Executive Order 13563. DoD's full plan can be accessed at: *http://www.regulations.gov/#!docketDetail;D=DOD-2011-OS-0036.*

List of Subjects in 32 CFR Part 154

Classified information, Government employees, Investigations, Security measures.

PART 154—[REMOVED]

■ Accordingly, by the authority of 5 U.S.C. 301, 32 CFR part 154 is removed.

Dated: December 27, 2016.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2016–31756 Filed 1–4–17; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Office of the Secretary

32 CFR Part 286

[DOD–2007–OS–0086; 0790–AI24]

DoD Freedom of Information Act (FOIA) Program

AGENCY: Department of Defense.

ACTION: Interim final rule.

SUMMARY: This part revises the Department of Defense (DoD) Freedom of Information Act (FOIA) regulation to implement the FOIA and incorporate the provisions of the OPEN Government Act of 2007 and the FOIA Improvement Act of 2016. This part promotes uniformity in the Department of Defense (DoD) FOIA Program. It takes precedence over all DoD Component issuances that supplement and implement the DoD FOIA Program.

DATES: *Effective date:* This rule is effective January 5, 2017. *Comment date:* Comments must be received by March 6, 2017.

FOR FURTHER INFORMATION CONTACT: James Hogan, 571–372–0462.

SUPPLEMENTARY INFORMATION:

Executive Summary

This rule revises 32 CFR part 286 to implement section 552 of title 5, United States Code (U.S.C.) and incorporate the provisions of the OPEN Government Act of 2007 and the FOIA Improvement Act of 2016. This part promotes uniformity in the DoD FOIA Program across the entire Department.

The FOIA, 5 U.S.C. 552, requires agencies to ''promulgate regulations, pursuant to notice and receipt of public comment, specifying the schedule of fees applicable to the processing of requests [the FOIA] and establishing procedures and guidelines for determining when such fees should be waived or reduced.'' Additionally,

according to the FOIA, an agency may, in its regulation, designate those components that can receive FOIA requests, provide for the aggregation of certain requests, and provide for multitrack processing of requests. Finally, the FOIA requires agencies to ''promulgate regulations . . . providing for expedited processing of requests for records.''

This rule implements changes to conform to the requirements of the following amendments to the FOIA: The OPEN Government Act of 2007, Public Law 110–175 and the FOIA Improvement Act of 2016, Public Law 114–185. These changes include the roles of the FOIA Public Liaison in § 286.4, § 286.5, § 286.8, § 286.9, and § 286.12; the roles of the FOIA Requesters Service Centers in § 286.3, § 286.4, § 286.5, § 286.8, § 286.9, § 286.11, and § 286.12; the processing of FOIA requests, § 286.7; the timing of responses to FOIA requests, § 286.8; and the fees schedules, Subpart E.

This regulatory action imposes monetary costs to the DoD and the public. The average cost to the DoD to implement the FOIA for the past five years is over $82,000,000. The benefit of this regulatory action to the public is that it promotes uniformity in the DoD FOIA Program across the entire Department and provides notice of DoD's FOIA policies and procedures to the public.

The revisions to this rule will be reported in future status updates as part of DoD's retrospective plan under Executive Order 13563 completed in August 2011. DoD's full plan can be accessed at: *http://www.regulations.gov/#!docketDetail;D=DOD-2011-OS-0036.*

Justification for Interim Final Rule

The DoD is issuing this rule as an interim final rule with a request for comments to comply with a statutory deadline in the FOIA Improvement Act of 2016. Section 3 of the Act requires agencies to review and issue regulations in accordance with the amendments in the Act no later than 180 days after the enactment of the Act. The FOIA Improvement Act of 2016 was signed by the President on June 30, 2016; therefore, agencies need to issue regulations no later than the end of December 2016.

Additionally, this rule implements amendments made in the OPEN Government Act of 2007. The DoD's issuance of its revised FOIA regulation was previously delayed due to reorganization, process changes, and re-coordination requirements based on the inclusion of the new legislative amendments and Presidential guidance.

Public Comments on Proposed Rule

The DoD published a proposed FOIA rule for comment on September 3, 2014 (79 FR 52500–52524) that was not promulgated as a final rule. Just after that time, the Office of Information Policy, Department of Justice (DOJ) published its Guidance for Agency FOIA Regulations along with a recommended template to be used by agencies in the development of their regulations. Accordingly, the DoD made the decision to revise its regulation at 32 CFR part 286 so that, to the practical extent possible, it aligned with the template recommended by DOJ. The sections of the previous proposed rule that are not included in this interim rule will be in a separate internal manual, DoD Manual 5400.07. This manual contains DoD FOIA processing guidance that is internal to the department and is not legally required to be in this rule.

During the previous public comment period on the proposed rule, the DoD received a number of comments that are related to this interim rule and our incorporation of the OPEN Government Act of 2007 amendments. Those comments, and the Department's adjudication of those comments, follow.

Comment: The previous proposed rule contained the following definition of consultation: The ''process whereby a federal agency transfers a FOIA responsive document to another federal agency or non-government entity, in certain situations, to obtain recommendations on the releasability of the document.'' One commenter states that this definition fails to set parameters for determining when consultation is appropriate.

This commenter ''believes that a 'consultation' should occur only when another agency, agency component, or non-government entity has a 'substantial interest' in any of the responsive records or portions thereof. While FOIA is silent as to the meaning of the term 'substantial interest,' the Office of Information Policy ('OIP') suggests a 'substantial interest' exists when records either 'originate[] with another agency' or the records contain 'information that is of interest to another agency or component.' For its part, the Department of Justice's FOIA regulations provide that 'consultation' (or 'referral') is appropriate when another agency originated the record or, more generally, is 'better able to determine whether the record is exempt from disclosure.' ''

This commenter further ''proposes that DoD redefine 'consultation' accordingly: *Consultation.* The process whereby a federal agency transfers a FOIA responsive record to another federal agency, agency component, or non-government entity, when such party has a substantial interest in the responsive record, in order to obtain recommendations on the releasability of the record. After review, the record is returned to the original agency for response to the FOIA requester or further review.''

This commenter also asks the DoD to introduce a definition of ''substantial interest'' as follows: ''*Substantial interest.* Another agency, agency component, or nongovernment entity possesses a 'substantial interest' in a FOIA responsive record, such that consultation may be appropriate, whenever (1) the responsive record originates with that same agency, agency component, or non-government entity, or (2) when the agency, agency component, or non-government entity is better positioned to judge the proper application of the FOIA exemptions, given the circumstances of the request or its familiarity with the facts necessary to judge the proper withholding of exempt material.''

Response: Our interim rule adopts the definition of ''consultation'' from the DOJ FOIA rule template, and we believe this is the appropriate definition. It does not contain the phrase ''substantial interest.'' Furthermore, we are not adding a definition of ''substantial interest.'' The proposed definition is too narrow and unnecessarily restricts the discretionary decision-making authority of DoD officials when determining what other agencies or DoD Components should review a requested document prior to release under the FOIA.

Comment: One commenter appreciates our definition because it tracks the new statutory definition codified by the OPEN Government Act of 2007 and explicitly abandons the outdated ''organized and operated'' standard proposed in guidance by the Office of Management and Budget in 1987. They go on to say that the proposed definition could be improved by explaining the manner in which ''alternative media shall be considered to be news-media entities.'' Accordingly, they requested we amend the definition of ''representative of the news media'' by incorporating the entirety of the statutory standard or by adding some short indication of the application of the fee category to non-traditional news media forms and requesters. They believe that the proposed definition itself should refer to the important role of technology vis-a-vis the news media requester fee category, potentially utilizing as a

starting point the examples provided in the statute.

Response: We appreciate the comment concerning the definition of ''representative of the news media''. With our new interim rule, we are now adopting the definition as published in the DOJ FOIA regulation template. We believe that this definition accurately reflects the Act.

Comment: Another commenter claims our proposed definition is deeply flawed because it states that news is information that is about current events or that would be of current interest to the public.

They go on to say that ''news can and frequently does concern historic past events. For example, there are any number of news stories that unveil the truth about important events of the past, perhaps because they were classified or restricted or secret in some manner. There are reporters who focus on important news stories about previously unknown aspects of World War II or Korea or Vietnam or the Persian Gulf Conflicts. There is important reporting on atomic veterans, Agent Orange exposure, chemical weapons testing, and so on. Why would important reporting on those past events not be considered news?''

''Limiting the definition to current events means that the government agency would be taking on the role of editor to decide what is important, and suggests that any news coverage about past events is not newsworthy. This definition is particularly disturbing because many of the important news stories involving DoD records concern past events and are precisely the type of news reporting that should be recognized as news for purposes of the Freedom of Information Act.''

''I understand that the definition could be interpreted to stretch to cover past events. But unless it is stated explicitly, there are components which may misinterpret the definition, and adhere to a narrower definition of news.''

''Therefore, I propose that the definition be amended to include the sentence: 'This may include historic past events.' ''

Response: Because we believe the phrase ''would be of current interest to the public'' adequately addresses the commenter's concern, we did not accept this recommendation. Furthermore, this section of the definition of ''representative of the news media'' mirrors the Act and the DOJ FOIA regulation template word for word.

Comment: One commenter mentions that the list of tasks for the FOIA Public Liaison omits two important tasks for the FOIA Public Liaison. ''First, there is explaining the status of an overdue request. Second, the Public Liaison can help to coordinate opportunities for a requester to clarify or narrow the scope of a request. This clarification or narrowing may require some two way discussion for the requester to understand how they may best clarify or narrow the request, including a discussion of specific impediments to the processing of the request.''

Response: We rejected this recommendation because it is our intention here to list only the statutory duties of the FOIA Public Liaison. We agree this list is not all-inclusive, and accordingly there could be a number other duties that FOIA Public Liaisons will perform. However, these other duties, to include those that the commenter mentions, are included within the scope of the statutory duties of the FOIA Public Liaison.

Comment: One commenter recommends a change to the section concerning Confidential Commercial Information. Specifically, the DoD mirrors the language of Executive Order 12600, which says that when providing the submitter of commercial information the opportunity to provide comment on the agency's release of its information under the FOIA, DoD Components should provide the submitter with a reasonable amount of time to comment. The commenter recommends, instead, that the submitter be given ten business days to respond to the notice with reasons for withholding disclosure. If the submitter fails to respond within the allotted ten days, the Agency must conclude that the submitter has no objection to disclosure of the requested information.

Response: We appreciate this comment, and agree that ten business days is a very reasonable time frame. However, because of the wide diversity of acquisition environments within the Department of Defense, it may be the case a longer period of time would be more reasonable. The DoD Components have very different acquisition environments; we have contracts concerning, for example, uniforms, office supplies, landscaping, complex information technology systems, satellites, healthcare, construction, and food. Accordingly, we believe that the individual components are best situated to determine the reasonable time for submitter response for their unique situations.

Comment: Once commenter recommends that upon submission of confidential information by the submitter to the DoD, the DoD should require the submitter to designate with good-faith effort any portions of the submission the submitter considers to be exempt under Exemption 4. A good-faith effort designation can be useful because it allows the DoD to work with information submitted beforehand that would help in its determination on whether to disclose information submitted by the submitter. They further suggest that the submitter's designation expire ten years after the date of submission unless the submitter requests, and provides justification for, a longer designation period. They state that the proposed section should be added as follows: ''*Designation of confidential business information.* In the event a FOIA request is made for confidential business information previously submitted to the Government by a commercial entity or on behalf of it (referred to as a 'submitter'), the regulations in this section apply. When submitting confidential business information, the submitter must use a good-faith effort to designate, by use of appropriate markings, at the time of submission or at a reasonable time thereafter (generally, within 30 days), any portions of the submitter's submission the submitter considers to be exempt from disclosure under FOIA Exemption 4, 5 U.S.C. 552(b)(4). The submitter's designation will expire ten years after the date of submission unless the submitter requests, and provides justification for, a longer designation period.''

Response: Some DoD Components have adopted a similar practice, and we believe that given the wide variety of DoD contracts (as described in the previous response), this procedure is best left with the components to determine whether it's appropriate for them. Additionally, this is actually an acquisition and not a FOIA policy recommendation; therefore, this rule is not the appropriate place for the policy. Furthermore, this policy (of proactively determining the confidential business information without a FOIA request) suffers from a defect. When a FOIA request is received for this type of information, the FOIA provides the ''push'' to the Agency to release the information, and Executive Order 12600 provides the submitter the opportunity to protect it. With the FOIA, the Agency has the legal authority to release information over the objections of the submitter, and with the Executive Order the submitter can prevent such a release under the Administrative Procedures Act. However, in the process recommended by this commenter, if the submitter asks the Agency to protect information that the Agency clearly

believes is not protectable under Exemption 4, it has no recourse to persuade or convince the submitter to made a more reasonable determination. The inevitable, yet unintended, consequence would be less contract information being released to the public; in effect, less transparency.

Comment: A commenter discussed our proposed rule's reference to the FOIA exclusions, 5 U.S.C. 552(c)(1)–(3). They believe that this allows the DoD to make a misrepresentation regarding the actual existence of records to the requester. Specifically, they objected to the following wording: Because of the possibility of the existence of excluded records, DoD law enforcement components will respond to all FOIA requests when no records are located or when located records fall within an exclusion by stating that no records responsive to the FOIA were found.

This commenter believes ''the justification the proposed regulation provides for misrepresentation—'the possibility of the existence of excluded records'—is insufficient. The FOIA contemplates a need for nondisclosure in cases of records the release of which could threaten the efficacy of law enforcement, but in no way does it countenance lying to requesters. Law enforcement may reasonably demand flexibility in the principles of open government that the FOIA seeks to advance, but it cannot require complete abdication of those principles. It is also unclear from the proposed regulations whether the DoD would believe itself authorized to make misrepresentations to Legislatures as to the existence of (b)(7) records.''

This commenter recommends instead that the agency follow the approach set out in the Department of Justice's guidelines regarding exclusions. The agency should have internal accountability mechanisms to ensure that exclusions are not overused. It should also include language in all FOIA responses informing the requester of the existence of exclusions and should also post information about exclusions on its public Web site.

Response: The procedures that we had in the proposed rule were appropriate and in accordance with the Act and DOJ procedural guidance. However, we have deleted much of the procedural guidance for exclusions and now our section on this topic mirrors the DOJ FOIA regulation template.

Comment: One commenter appreciated the requirement that a FOIA Requester Service Center must provide a requester with an estimated date of completion for their FOIA request when the requester enquires about the status of a request. However, the commenter also indicated that there is not a good accountability measure listed to ensure that dates given are given in good faith.

Response: We are not sure what the commenter means by ''accountability measure,'' or how it would apply to this rule. Therefore, we did not adopt their recommendation.

Comment: One commenter recommend that in the section concerning expedited processing, we should provide examples of compelling need, imminent loss of due process rights, and humanitarian need.

Response: We appreciate this comment; however, for the sake of brevity, we are not including examples. Furthermore, in this case the use of examples risks the possibility of adding confusion to the understanding of the issue.

Comment: One commenter is concerned that we were separating the definition of compelling need from the main body of the regulation.

Response: We appreciate this comment. Our previous proposed rule had a definitions section separate from the body of the rule. Now that we are publishing our rule according to the DOJ FOIA regulation template, the definition is located within the body of the rule.

Comment: In the fees section of our proposed rule, and in our current rule, we have a ''business as usual approach'' concerning the costs associated with the processing of electronic records. Specifically, the proposed rule said that a ''business as usual approach exists when the DoD Component has the capability to process a FOIA request for electronic records without a significant expenditure of monetary or personnel resources. DoD Components are not required to conduct a search that does not meet this business as usual criterion.'' A commenter mentions that this has no foundation in law, and obfuscates the true reasonableness standard for electronic searches set out in 5 U.S.C. 552(a)(3)(C). They propose that it should be eliminated.

Response: We agree with the commenter and have removed the ''business as usual'' criterion.

Comment: One commenter is concerned about the absence of ''substantial interest'' in the discussion of consultations with and referrals to other agencies, agency components, or non-government entities. They mention the proposed rule contains varying references to ''substantial interest,'' ''equity interest,'' and ''interest or equity.'' This commenter recommends that DoD standardize its language by using ''substantial interest'' to avoid confusion. It also should provide a clear statement that consultation ought never to occur with an entity that does not possess a substantial interest in responsive records.

Response: Because we have adopted the DOJ FOIA regulation template, we have standardized the use of the word ''interest,'' it is not further modified by ''substantial'' or ''equity''.

Comment: One commenter recommends that DoD revise the practice of not advising FOIA requesters that a consultative process has been undertaken ''unless information is withheld by the consulted agency.'' This commenter believes that ''transparency and an open government—hallmarks of FOIA—mandate that agencies provide requesters with this information.''

Response: Because we have adopted the DOJ FOIA regulation template, which does not include this practice, the interim final rule also does not include guidance to not inform FOIA requesters of consultations.

Comment: Concerning the procedure of advising FOIA requesters of their appeal rights, one commenter states that the time limits on submission of administrative appeals should recognize the Justice Department's statements on the possibility of lengthy delays on mail reaching government agencies due to security screening. They suggest that the postmark of the letter can be used to satisfy the appeal deadline for an administrative appeal, as is permitted in most legal situations.

Response: With our adoption of the DOJ FOIA regulation template, we have now adopted this procedure.

Comment: One commenter mentions the language in our proposed rule which concerns commercial requesters. It indicates that a ''representative of the news media could make a FOIA request that is for commercial use (*e.g.,* a magazine publisher asking for duty addresses of DoD personnel to solicit them to buy subscriptions to the magazine).'' The commenter notes that while it is theoretically possible that if a FOIA request could be submitted to DoD by a member of the news media for such a purpose, such a scenario is unlikely and, at the very least, uncommon. This commenter further contents that a FOIA request is submitted by a member of the news media, there should be a strong presumption that the requestor is entitled to classification as a ''representative of the news media'' for fee purposes.

Response: We agree, and with our adoption of the DOJ FOIA regulation template, this subsection was deleted.

Comment: One commenter mentions that our proposed subsection on fees

discusses examples of news media entities such as publishers of periodicals who make their products available for purchase or subscription by the general public. This commenter believes that this requirement fails to include the large variety and number of online news organizations, many of which provide their products free of charge to internet readers. Therefore, they propose that the subsection should be adjusted to recognize this reality. They ask that we ''remove the requirement that a publisher of periodicals must make their products available for purchase or subscription, as that requirement unnecessarily impedes the qualification of many legitimate news media entities at the present time.''

Response: Because we are adopting the DOJ FOIA regulation template, this phrase is no longer in our regulation.

Comment: Another commenter had a similar issue with this section. ''[The] FOIA states that examples of news-media entities include 'publishers of periodicals . . . who make their products available for purchase by or subscription by *or free distribution to the general public.*' The Proposed Rule, on the other hand, inexplicably truncates the definition to exclude publishers that make their publications available for 'free distribution to the general public.' There are countless media entities that provide their services to the public for free or through an advertisement-based model, including the overwhelming majority of broadcast and online news outlets. ABC News, National Public Radio, CBS News, Slate, NBC News, Politico, Pro Publica, and PBS are just a handful of examples of organizations that provide news to the public for free. It would be absurd for the DoD not to recognize these and other news organizations that provide free or advertising-supported journalism as representatives of the news media.''

''Furthermore, the authority under which the DoD is empowered to promulgate regulations regarding its implementation of FOIA, 5 U.S.C. 552(a)(4)(A)(i), states that [s]uch agency regulations *shall* provide that . . . [e]xamples of news-media entities are . . . publishers of periodicals (but only if such entities qualify as disseminators of 'news') who make their products available for purchase by or subscription by or free distribution to the general public.''

''While the statute says such examples are 'not all-inclusive,' the DoD cannot promulgate regulations that are *less* inclusive than what Congress has indicated. As the Supreme Court has held with regard to an agency's construction of a statute which it administers, '[i]f the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.' Therefore, [we urge] the DoD to expand its definition of news-media entities to include publishers who make their products available for free to the public, in accordance with the express direction of Congress in the 2007 OPEN Government Act.''

Response: Our adoption of the DOJ FOIA regulation template revises this subsection to satisfactorily adopt this commenter's recommendation.

Comment: One commenter requests that DoD elaborate on the meaning of ''alternative media.'' Specifically, they state: ''While DoD has followed FOIA's instruction to consider evolving 'methods of news delivery' and 'alternative media' formats when defining a news media entity, the proposed section would benefit from some examples that could provide guidance to FOIA officers when considering fee category requests. Specifically, [we are] concerned that nascent news media organizations, which have yet to demonstrate a large readership or a history of reporting and dissemination, could be excluded.''

''Ensuring an expanded definition of 'alternative media' is entirely consistent with judicial precedent. For example, the U.S. Court of Appeals for the District of Columbia Circuit has noted that FOIA's legislative history demonstrates 'it is critical that the phrase 'representative of the news media' be broadly interpreted if the act is to work as expected. . . . In fact, any person or organization which regularly publishes or disseminates information to the public . . . should qualify . . . as a 'representative of the news media.' The U.S. District Court for the District of Columbia has similarly construed DoD's current fee category regulation, 32 CFR 286.28(e)(7)(i), to include, for example, regular publishers of periodicals, even when those periodicals are simply disseminated by email or posted on a frequently visited Web site.''

''The legislative history of FOIA also suggests the need for improvement in the treatment of 'alternative media.' Senator Patrick Leahy, co-sponsor of the OPEN Government Act, stated that the changes to the definition of 'representative of the news media' would ensur[e] that anyone who gathers information to inform the public, including . . . bloggers, may seek a fee waiver[.]' He also stated that the new definition covered 'Internet blogs and other Web-based forms of media . . . free newspapers and individuals performing a media function who do not necessarily have a prior history of publication.' Co-sponsor Senator John Cornyn affirmed Senator Leahy's view that the new definition 'grants the same privileged FOIA fee status currently enjoyed by traditional media outlets to bloggers and others who publish reports on the Internet.' ''

''Accordingly, [we request] that DoD expand the proposed definition of 'representative of the news media' by incorporating the entirety of the statutory standard and by adding some short indication of the application of fee category to non-traditional news media forms and requesters.''

Response: We understand and appreciate this recommendation; however, we are not revising this subsection as requested. We do not believe that an expanded definition of ''alternative media'' is necessary. Any such elaboration or definition risks excluding some types of alternative media. Additionally, the DOJ FOIA regulation template, which we have adopted, does not contain any such expanded definition.

Comment: This same commenter requests ''that DoD provide further explanation of how it will determine whether potential news media requesters possess the editorial skill to use responsive records to create a 'distinct work' and the sufficient intent to 'distribute[] that work to an audience.' News media requesters often prove this skill and intent with varying levels of specificity. DoD should clarify the standard of proof it will apply to these requests. Moreover, it should clarify the extent to which information about the requester that is not contained in the request will be used to determinate the veracity of a requester's claims. For example, DoD should explain whether it is appropriate to examine the history of an organization, its past practices with regard to FOIA records, and the detail of its planned use of responsive records, subject to editorial considerations and the content of the production. [We recommend] that DoD permit after-the-fact factual considerations, but that it remind FOIA offices that news media requester status is not static, so as to accommodate nascent news media persons or entities and others transitioning into news reporting.''

Response: We appreciate this recommendation; however, we do not believe that this rule is the appropriate place for a further explanation of how we should determine whether a potential news media requester meets

the statutory standard or not. DOJ has not provided guidance in this area, and if they do we will pass it to the DoD Components.

Comment: This commenter also points out that the proposed rule states, in part, that ''[f]reelance journalists may be regarded as working for a news organization. . . .'' This commenter contends that ''this language appears to largely mirror the language in the 2007 OPEN Government Act, which was codified at 5 U.S.C. 552(a)(4)(A)(iii). However, the language of the Proposed Rule changes the imperative 'shall' of FOIA to a permissive 'may.' As stated above, the authority under which the DoD is empowered to promulgate regulations regarding its implementation of FOIA, 5 U.S.C. 552(a)(4)(A)(i), states that '[s]uch agency regulations *shall* provide that . . . [a] freelance journalist *shall* be regarded as working for a news-media entity. . . .' The DOD has no power to modify a clear and essential term contained in a statute through the regulatory process. The Proposed Rule must be changed such that it properly reflects the will of Congress.''

Response: The DOJ FOIA regulation template, which we adopted, uses the term ''will'' which we believe has the same imperative force as ''shall''.

Comment: This commenter also is concerned that a subsection of the proposed rule may be interpreted too narrowly by FOIA officers. The proposed rule states that ''[a] person or entity that merely disseminates documents received pursuant to the FOIA to an audience would not qualify as a representative of the news media because, in this case, the person or entity is not using editorial skills to turn raw materials into a distinct work.'' The commenter contends ''While it is true that FOIA defines 'a representative of the news media' as a person or entity that gathers information and uses its editorial skills to turn such information into a distinct work for distribution, the Proposed Rule would benefit from clarifying language instructing FOIA officers that it should be interpreted liberally in favor of the requestor. A person or entity that meets the definition of 'a representative of the news media' may, in certain circumstances, disseminate documents received pursuant to a FOIA request in full, oftentimes publishing such documents online alongside or as a supplement to a news article or other commentary. This practice is beneficial, and should not lead to the denial of media fee status.''

Response: We believe that this paragraph does not contradict the FOIA; it is very clear that the Act requires a representative of the news media to use ''editorial skills.'' However, since this sentence is not in the DOJ FOIA regulation template, we do not have it in our interim rule.

Regulatory Procedures

Executive Order 12866, ''Regulatory Planning and Review'' and Executive Order 13563, ''Improving Regulation and Regulatory Review''

Executive Orders 13563 and 12866 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distribute impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This interim final rule has been designated a ''significant regulatory action,'' although not economically significant, under section 3(f) of Executive Order 12866. Accordingly, the rule has been reviewed by the Office of Management and Budget (OMB) under the requirements of these Executive Orders.

Public Law 104–4, ''Unfunded Mandates Reform Act'' (2 U.S.C. Ch. 25)

This interim final rule is not subject to the Unfunded Mandates Reform Act because it does not contain a federal mandate that may result in the expenditure by state, local, and tribal governments, in the aggregate, or by the private sector, of $100M or more in any one year.

Public Law 96–354, ''Regulatory Flexibility Act'' (5 U.S.C. Ch. 6)

It has been certified that this interim final rule is not subject to the Regulatory Flexibility Act because it does not have a significant economic impact on a substantial number of small entities. The rule implements the procedures for processing FOIA requests within the Department of Defense, which do not create such an impact.

Public Law 96–511, ''Paperwork Reduction Act'' (44 U.S.C. Ch. 35)

This interim final rule does not impose reporting or recordkeeping requirements under the Paperwork Reduction Act of 1995.

Executive Order 13132, ''Federalism''

Executive Order 13132 establishes certain requirements that an agency must meet when it promulgates a rule that imposes substantial direct requirement costs on state and local governments, preempts state law, or otherwise has federalism implications. This interim final rule will not have a substantial effect on state and local governments, or otherwise have federalism implications.

List of Subjects in 32 CFR Part 286

Freedom of Information Act.

■ Accordingly, 32 CFR part 286 is revised to read as follows:

Subpart A—General Provisions

Sec.
286.1 Purpose.
286.2 Applicability.

Subpart B—FOIA Requests

286.3 General information.
286.4 FOIA Public Liaisons and the Office of Government Information Services.
286.5 Description of records sought.
286.6 Preservation of records.

Subpart C—FOIA Request Processing

286.7 General provisions.
286.8 Timing of responses to requests.
286.9 Responses to requests.
286.10 Confidential Commercial Information.

Subpart D—Appeals

286.11 Processing of appeals.

Subpart E—Fees

286.12 Schedule of fees.
286.13 Fees for technical data.

Authority: 5 U.S.C. 552.

PART 286—DOD FREEDOM OF INFORMATION ACT (FOIA) PROGRAM

Subpart A—General Provisions

§ 286.1 Purpose.

This part contains the rules that the public follows in requesting information from the Department of Defense (DoD) in accordance with the FOIA, as amended, 5 U.S.C. 552, and how those requests will be processed by the DoD. These rules should be read in conjunction with the text of the FOIA and the Uniform Freedom of Information Fee Schedule and Guidelines published by the Office of Management and Budget (''OMB Guidelines''). Requests made by individuals for records about themselves under the Privacy Act of 1974, as amended, 5 U.S.C. 552a, are processed in accordance with 32 Code of Federal Regulations (CFR) part 310. Additionally, the Directorate for Oversight and Compliance maintains a DoD FOIA Handbook for the public to use in obtaining information from the DoD. This handbook contains information about specific procedures particular to the DoD with respect to the

public requesting DoD records. This handbook includes descriptions of DoD Components and the types of records maintained by different DoD Components. It is available at *http://open.defense.gov/Transparency/FOIA/FOIAHandbook.aspx.*

§ 286.2 Applicability.

This part applies to the Office of the Secretary of Defense (OSD), the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this part as the ''DoD Components'').

Subpart B—FOIA Requests

§ 286.3 General information.

(a) The DoD has a decentralized system for responding to FOIA requests, with each DoD Component designating at least one FOIA Requester Service Center (RSC) to process records from that component. All DoD RSCs have the capability to receive requests electronically either through email or a web portal. To make a request for records, a requester should write directly to the DoD Component that maintains the records being sought. A request will receive the quickest possible response if it is addressed to the RSC of the DoD Component that maintains the records sought. Addresses and contact information for the RSCs are available at *http://www.foia.gov/report-makerequest.html.* This Web site has the contact information for the following DoD Components: The OSD and the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, Department of the Army, Department of the Navy, Department of the Air Force, Armed Services Board of Contract Appeals, Defense Commissary Agency, Defense Contract Audit Agency, Defense Contract Management Agency, Defense Finance and Accounting Service, Defense Health Agency, Defense Information Systems Agency, Defense Intelligence Agency, Defense Logistics Agency, Defense Security Service, Defense Technical Information Center, Defense Threat Reduction Agency, Joint Personnel Recovery Agency, DoD Education Activity, National Geospatial-Intelligence Agency, National Guard Bureau, National Reconnaissance Office, National Security Agency/Central Security Service, Office of the Inspector General of the Department of Defense, United States Africa Command, United States Central Command, United States European Command, United States Northern Command, United States Pacific Command, United States Special Operations Command, United States Strategic Command, and United States Transportation Command.

(b) The OSD/Joint Staff FOIA RSC also processes FOIA requests for the Criminal Investigation Task Force, Defense Acquisition University, Defense Advanced Research Projects Agency, Defense Equal Opportunity Management Institute, Defense Legal Services Agency, Defense Microelectronics Activity, Defense Media Activity, Defense POW/MIA Accounting Agency, Defense Security Cooperation Agency, Defense Technology Security Administration, Defense Travel Management Office, DoD Human Resources Activity, DoD Test Resource Management Center, Joint Improvised-Threat Defeat Agency, Missile Defense Agency, National Defense University, Office of Economic Adjustment, Pentagon Force Protection Agency, Uniform Services University of the Health Sciences, Washington Headquarters Services and White House Military Office.

(c) A requester who is making a request for records about himself or herself, regardless of whether the records are in a Privacy Act system of records, must comply with the verification of identity requirements as determined by the DoD Component in accordance with 32 CFR part 310.

§ 286.4 FOIA Public Liaisons and the Office of Government Information Services.

(a) Each DoD Component has at least one FOIA Public Liaison. FOIA Public Liaisons are responsible for working with requesters that have any concerns about the service received from a FOIA RSC, reducing delays in the processing of FOIA requests, increasing transparency and understanding of the status of requests, and assisting in the resolution of disputes. Contact information for DoD Component FOIA Public Liaisons is available at *http://www.foia.gov/report-makerequest.html.*

(b) Engaging in dispute resolution services provided by OGIS. Mediation is a voluntary process. If a requester seeks dispute resolution services from the Office of Government Information services (OGIS), the DoD will actively engage as a partner to the process in an attempt to resolve the dispute.

§ 286.5 Description of records sought.

(a) Requesters must reasonably describe the records sought and provide sufficient detail to enable personnel to locate those records with a reasonable amount of effort. To the extent possible, requesters should include specific information that may assist personnel in identifying the requested records, such as the date, title or name, author, recipient, subject matter of the record, case number, file designation, or reference number. Before submitting their requests, requesters may contact the DoD Component's FOIA RSC or FOIA Public Liaison to discuss the records they are seeking and to receive assistance in describing the records. If after receiving a request the DoD Component determines that it does not reasonably describe the records sought, the DoD Component shall inform the requester what additional information is needed or why the request is otherwise insufficient. Requesters who are attempting to reformulate or modify such a request may discuss their request with the DoD Component's FOIA contact or FOIA Public Liaison. Requesters are encouraged to make every effort to reasonably describe the requested records in order to avoid any delays in the processing of their requests.

(b) Requesters may specify the preferred form or format (including electronic formats) for the requested records. DoD Components will accommodate the request if the record is readily reproducible in that form or format.

(c) Requesters must provide contact information, such as a telephone number, email address, and/or mailing address, to assist the DoD Component in communicating and providing released records.

§ 286.6 Preservation of records.

Each DoD Component shall preserve all correspondence pertaining to the requests that it receives under this part, as well as copies of all requested records, until disposition or destruction is authorized pursuant to title 44 of the United States Code or the General Records Schedule 4.2 of the National Archives and Records Administration (NARA). Records shall not be disposed of or destroyed while they are the subject of a pending request, appeal, or lawsuit under the FOIA.

Subpart C—FOIA Request Processing

§ 286.7 General provisions.

(a) *Responsibilities.* The DoD Component receiving a FOIA request for a record that it maintains is responsible for making a determination on the request and responding to the FOIA requester. In determining which records are responsive to a request, a DoD Component ordinarily will include only records in its possession as of the date

that it begins its search. If any other date is used, the DoD Component shall inform the requester of that date. A record that is excluded from the requirements of the FOIA pursuant to 5 U.S.C. 552(c), is not considered responsive to a request.

(b) *Authority to deny requests.* DoD Components will designate one or more Initial Denial Authorities (IDA) with the authority to deny any requests for records that are maintained by that agency.

(c) *Re-routing of misdirected requests.* DoD Components receiving a misdirected FOIA request for records clearly originating with another DoD Component (*e.g.* the Air Force receives a FOIA request for a Navy contract) will route the FOIA request to the appropriate DoD Component and inform this DoD Component of the date the FOIA request was initially received. Additionally, it will advise the FOIA requester of the routing of the request. This routing requirement only applies to those FOIA requests directed to a DoD Component that seek documents for which the DoD is responsible. If it is known that responsibility for the requested records rests with a non-DoD Federal agency (*e.g.,* Department of State), then the DoD Component need only advise the FOIA requester to submit the FOIA request to the proper Federal agency. DoD Components will not route misdirected FOIA requests to a Defense Criminal Investigation Organization or Intelligence Community component without first contacting the other component or agency for guidance.

(d) *Consultation, referral, and coordination.* When reviewing records located in response to a request, the DoD Component may determine that another DoD Component or Federal agency also should determine whether the record is exempt from disclosure under the FOIA. As to any such record, the DoD Component shall proceed in one of the following ways:

(1) *Consultation.* When records originating with a DoD Component that is initially processing a request contain information of interest to another DoD Component or other Federal agency, the DoD Component initially processing the request should typically consult with all interested DoD Components or other Federal agencies prior to making a release determination. The DoD Component initially processing the request, under these circumstances, will ultimately respond to the requester and release any responsive material. The consulted DoD Component will notify the sending DoD Component or other Federal agency when the consultation is received and the consultation tracking number.

(2) *Referral.* (i) When the DoD Component initially processing the request believes that a different DoD Component or other Federal agency is best able to determine whether to disclose the record, the DoD Component typically should refer the responsibility for responding to the request regarding that record to that agency. Ordinarily, the agency that originated the record will be presumed to be best able to make the disclosure determination. Under these circumstances, the DoD Component or other Federal agency receiving the referral will ultimately make a release determination on the records and respond to the requester.

(ii) Whenever a DoD Component refers a record to another DoD Component or Federal agency, it will document the referral, refer a copy of the referred record, and notify the requester of the referral, informing the requester of the name and FOIA address of the DoD Component or Federal agency to which the record was referred.

(3) *Coordination.* The standard referral procedure is not appropriate where disclosure of the identity of the DoD Component or agency to which the referral would be made could harm an interest protected by an applicable exemption, such as the exemptions that protect personal privacy or national security interests. Under these circumstances, the consultation process is the appropriate means for coordination. See § 286.7(d)(1). For example, if a non-law enforcement agency responding to a request for records on a living third party locates within its files records originating with a law enforcement agency, and if the existence of that law enforcement interest in the third party was not publicly known, then to disclose that law enforcement interest could cause an unwarranted invasion of the personal privacy of the third party. Similarly, if a DoD Component locates within its files material originating with an Intelligence Community agency, and the involvement of that agency in the matter is classified and not publicly acknowledged, then to disclose or give attribution to the involvement of that Intelligence Community agency could cause national security harms. In such instances, in order to avoid harm to an interest protected by an applicable exemption, the DoD Component that received the request should coordinate with the originating DoD Component or agency to seek its views the disclosure of the record. The release determination for the record should then be conveyed to the requester by the DoD Component that originally received the request.

(4) *Timing of responses to consultations and referrals.* All consultations and referrals received by the DoD Component will be processed according to the date that the FOIA request was initially received by a Federal agency.

(5) *Agreements regarding consultations and referrals.* DoD Components may establish written agreements with other DoD Components or other Federal agencies to eliminate the need for consultations or referrals with respect to particular types of records, providing these agreements do not conflict with this rule, or another law, rule, or regulation.

§ 286.8 Timing of responses to requests.

(a) *In general.* DoD Components ordinarily will respond to requests on a first-in/first-out basis according to their order of receipt. In instances involving misdirected requests that are re-routed pursuant to § 286.7(c), the response time will commence on the date that the request is received by the appropriate DoD Component's FOIA RSC, but in any event not later than 10 working days after the request is first received by any DoD Component's FOIA RSC that is designated to receive requests.

(b) *Multitrack processing.* All DoD Components must designate a specific track for requests that are granted expedited processing in accordance with the standards set forth in the FOIA and paragraph (e) of this section. DoD Components may also designate additional processing tracks that distinguish between simple and more complex requests based on the estimated amount of work or time needed to process the request. Among the factors a DoD Component may consider are the number of records requested, the number of pages involved in processing the request and the need for consultations or referrals. DoD Components should advise requesters of the track into which their request falls and, when appropriate, shall offer the requesters an opportunity to narrow or modify their request so that it can be placed in a different processing track.

(c) *Unusual circumstances.* Whenever the statutory time limit for processing a request cannot be met because of ''unusual circumstances,'' as defined in the FOIA, and the DoD Component extends the time limit on that basis, the DoD Component must, before expiration of the 20-day period to respond, notify the requester in writing of the unusual circumstances involved and of the date by which processing of the request can be expected to be completed. See 5

U.S.C. 552(a)(6)(B). Where the extension exceeds 10 working days, the DoD Component shall, in accordance with the FOIA, provide the requester with an opportunity to modify the request or arrange an alternative time period for processing the original or modified request. Furthermore, the requester will be advised that the DoD Component FOIA Public Liaison is available for this purpose and of their right to seek dispute resolution services from OGIS.

(d) *Aggregating requests.* For the purposes of satisfying unusual circumstances under the FOIA, DoD Components may aggregate requests in cases where it reasonably appears that multiple requests, submitted either by a requester or by a group of requesters acting in concert, constitute a single request that would otherwise involve unusual circumstances. DoD Components will not aggregate multiple requests that involve unrelated matters.

(e) *Expedited processing.* (1) The FOIA establishes two reasons for expediting the processing of initial FOIA requests: Compelling need and other cases determined by the agency. See 5 U.S.C. 552(a)(6)(E). Administrative appeals may be expedited for the same reasons. The DoD Components must make expedited processing determinations within 10 calendar days after receipt of a request that meets the criterion of reasonably describing the requested records in § 286.5(a). Once the DoD Component decides to grant expedited processing, the request is processed as soon as practicable. Adverse actions by DoD Components on requests for expedited processing, or a failure to respond to those requests in a timely manner, are subject to judicial review.

(i) *Compelling need.* Expedited processing is granted to a requester upon a specific request for such and when the requester demonstrates a compelling need for the information. A compelling need exists when:

(A) The failure to obtain requested records on an expedited basis could reasonably be expected to pose an imminent threat to the life or physical safety of an individual, or

(B) The information is urgently needed by an individual primarily engaged in disseminating information in order to inform the public concerning actual or alleged government activity.

(ii) *DoD additional expedited processing circumstances.* If the DoD Component decides to expedite the request for either of the following reasons, the request will be processed in the expedited track behind those requests qualifying for expedited processing as a compelling need.

(A) *Imminent loss of due process rights.* Expedited processing is granted to a requester if loss of substantial due process rights is imminent.

(B) *Humanitarian need.* Expedited processing is granted when the failure to obtain the requested information on an expedited basis could reasonably be expected to harm substantial humanitarian interests.

(2) A request for expedited processing may be made at any time. Requests for expedited processing must be submitted to the DoD Component that maintains the records. When making a request for expedited processing of an administrative appeal, the request should be submitted to the DoD Component's appellate authority.

(3) A requester who seeks expedited processing must submit a statement, certified to be true and correct, explaining in detail the basis for making the request for expedited processing. For requesters seeking expedited processing under paragraph (e)(1)(i)(B) of this section, a requester who is not a full-time member of the news media must establish that the requester is a person whose primary professional activity or occupation is information dissemination, and not an incidental or secondary activity, though it need not be the requester's sole occupation. Such a requester also must establish a particular urgency to inform the public about the government activity involved in the request—one that extends beyond the public's right to know about government activity generally. The existence of numerous articles published on a given subject can be helpful in establishing the requirement that there be an ''urgency to inform'' the public on the topic. Requests for expedited processing under paragraph (e)(1)(ii)(A) of this section must include a description of the due process rights that would be lost. This statement must be with the request for expedited processing for it to be considered and responded to within the 10 calendar days required for decisions on expedited access.

(4) A DoD Component shall notify the requester within 10 calendar days of the receipt of a request for expedited processing of its decision whether to grant or deny expedited processing. If expedited processing is granted, the request shall be placed in the processing track for expedited requests, and processed as soon as practicable. If a request for expedited processing is denied, any appeal of that decision shall be acted upon expeditiously.

§ 286.9 Responses to requests.

(a) *In general.* DoD FOIA RSCs will, to the extent practicable, communicate with requesters having access to the Internet using electronic means, such as email or web portal.

(b) *Acknowledgments of requests.* DoD Components will acknowledge requests in writing and assign individualized tracking numbers. DoD Components will include these tracking numbers and any tracking numbers used by FOIA requesters in all correspondence.

(c) *Estimated dates of completion and interim responses.* Upon request, the DoD Component will provide an estimated date by which the DoD Component expects to provide a response to the requester. If a request involves a voluminous amount of material or searches in multiple locations, the DoD Component may provide interim responses, releasing the records on a rolling basis.

(d) *Grants of requests.* Once a DoD Component makes a determination to grant a request in full or in part, it shall notify the requester in writing. The DoD Component also shall inform the requester:

(1) Of any fees charged under § 286.12; and

(2) That they may contact the DoD Component FOIA Public Liaison for further assistance.

(e) *Adverse determinations of requests.* A DoD Component making an adverse determination denying a request in any respect will notify the requester of that determination in writing. Adverse determinations, or denials of requests, include decisions that the requested record is exempt, in whole or in part; the request does not reasonably describe the records sought; the information requested is not a record subject to the FOIA; the requested record does not exist, cannot be located, or has been destroyed; or the requested record is not readily reproducible in the form or format sought by the requester. Adverse determinations also include denials involving fees or fee waiver matters or denials of requests for expedited processing.

(f) *Content of denial.* The denial will include:

(1) The name and title or position of the IDA;

(2) A brief statement of the reasons for the denial, including any FOIA exemption applied by the DoD Component in denying the request;

(3) An estimate of the volume of any records or information withheld, such as the number of pages or some other reasonable form of estimation, although such an estimate is not required if the

volume is otherwise indicated by deletions marked on records that are disclosed in part or if providing an estimate would harm an interest protected by an applicable exemption;

(4) For any information denied under Exemption 1, the applicable section or sections of the appropriate Executive order on classification that establishing continued classification of the information;

(5) For any information denied under Exemption 3, the specific statute relied upon to deny the information along with a short description of the statute;

(6) A statement that the requester must appeal no later than 90 days after the date of the denial and along with instructions on how to appeal to the DoD Component appellate authority. The instructions will include the appellate authority's duty title, the mailing address for the appeal, and instructions on how the requester can appeal electronically; and

(7) A statement advising the requester of their right to seek dispute resolution services from the DoD Component FOIA Public Liaison or OGIS.

(g) *Markings on released documents.* Records disclosed in part will be marked clearly to show the amount of information deleted and the exemption under which the deletion was made unless doing so would harm an interest protected by an applicable exemption. The location of the information deleted also will be indicated on the record, if technically feasible.

(h) *Use of record exclusions.* (1) In the event that a DoD Component identifies records that may be subject to exclusion from the requirements of the FOIA pursuant to 5 U.S.C. 552(c), the DoD Component should confer with the Directorate for Oversight and Compliance, which will confer with the Department of Justice, Office of Information Policy (OIP), to obtain approval to apply the exclusion.

(2) A DoD Component invoking an exclusion shall maintain an administrative record of the process of invocation and approval of the exclusion by OIP.

§ 286.10 Confidential Commercial Information.

(a) *Definitions.*

(1) *Confidential commercial information* means commercial or financial information obtained by the DoD Component from a submitter that may be protected from disclosure under Exemption 4 of the FOIA, 5 U.S.C. 552(b)(4).

(2) *Submitter* means any person or entity, including a corporation, State, or foreign government, but not including another Federal Government entity, that provides confidential commercial information, either directly or indirectly to the Federal Government.

(b) *Designation of confidential commercial information.* A submitter of confidential commercial information must use good faith efforts to designate by appropriate markings, at the time of submission, any portion of its submission that it considers to be protected from disclosure under Exemption 4. These designations shall expire 10 years after the date of submission unless the submitter requests and provides justification for a longer designation period.

(c) *When notice to submitters is required.* (1) The DoD Component shall promptly provide written notice to the submitter of confidential commercial information whenever records containing such information are requested under the FOIA if the DoD Component determines that it may be required to disclose the records, provided:

(i) The requested information has been designated in good faith by the submitter as information considered protected from disclosure under Exemption 4; or

(ii) The DoD Component has a reason to believe that the requested information may be protected from disclosure under Exemption 4, but has not yet determined whether the information is protected from disclosure.

(2) The notice shall include a copy of the requested records or portions of records containing the information. In cases involving a voluminous number of submitters, the DoD Component may post or publish a notice in a place or manner reasonably likely to inform the submitters of the proposed disclosure, instead of sending individual notifications.

(d) *Exceptions to submitter notice requirements.* The notice requirements of this section shall not apply if:

(1) The DoD Component determines that the information is exempt under the FOIA, and therefore will not be disclosed;

(2) The information has been lawfully published or has been officially made available to the public;

(3) Disclosure of the information is required by a statute other than the FOIA or by a regulation issued in accordance with the requirements of Executive Order 12600 of June 23, 1987; or

(4) The designation made by the submitter under paragraph (b) of this section appears obviously frivolous. In such case, the agency shall give the submitter written notice of any final decision to disclose the information within a reasonable number of days prior to a specified disclosure date.

(e) *Opportunity to object to disclosure.* (1) The DoD Component shall specify a reasonable time period within which the submitter must respond to the notice referenced in paragraph (c) of this section.

(2) If a submitter has any objections to disclosure, it should provide the DoD Component a detailed written statement that specifies all grounds for withholding the particular information under any exemption of the FOIA. In order to rely on Exemption 4 as basis for nondisclosure, the submitter must explain why the information constitutes a trade secret or commercial or financial information that is confidential.

(3) A submitter who fails to respond within the time period specified in the notice shall be considered to have no objection to disclosure of the information. The DoD Component is not required to consider any information received after the date of any disclosure decision. Any information provided by a submitter under this section may itself be subject to disclosure under the FOIA.

(f) *Analysis of objections.* The DoD Component shall consider a submitter's objections and specific grounds for nondisclosure in deciding whether to disclose the requested information.

(g) *Notice of intent to disclose.* Whenever the DoD Component decides to disclose information over the objection of a submitter, the DoD Component shall provide the submitter written notice, which shall include:

(1) A statement of the reasons why each of the submitter's disclosure objections was not sustained;

(2) A description of the information to be disclosed or copies of the records as the DoD Component intends to release them; and

(3) A specified disclosure date, which shall be a reasonable time after the notice.

(h) *Notice of FOIA lawsuit.* Whenever a requester files a lawsuit seeking to compel the disclosure of confidential commercial information, the DoD Component shall promptly notify the submitter.

(i) *Requester notification.* The DoD Component shall notify a requester whenever it provides the submitter with notice and an opportunity to object to disclosure; whenever it notifies the submitter of its intent to disclose the requested information over the submitter's objections; and whenever a submitter files a lawsuit to prevent the disclosure of the information.

Subpart D—Appeals

§ 286.11 Processing of appeals.

(a) *Requirements for making an appeal.* A requester may appeal any adverse determinations to the DoD Component's appellate authority. Examples of adverse determinations are provided in § 286.9(e). Appeals can be submitted by mail or online in accordance with the requirements provided in the DoD Component's final response. Requesters that are not provided with appeal requirements should contact the FOIA RSC processing their request to obtain the requirements. The requester must make the appeal in writing and to be considered timely it must be postmarked, or in the case of electronic submissions, transmitted, within 90 calendar days after the date of the response. The appeal should clearly identify the determination that is being appealed and the assigned request number. To facilitate handling, the requester should mark both the appeal letter and envelope, or subject line of the electronic transmission, ''Freedom of Information Act Appeal.''

(b) *Adjudication of appeals.* (1) The Heads of the following DoD Components will serve as, or appoint an appropriate official to serve as, the component's appellate authority: Department of the Army, Department of the Navy, Department of the Air Force, Defense Commissary Agency, Defense Contract Audit Agency, Defense Contract Management Agency, Defense Finance and Accounting Service, Defense Health Agency, Defense Information Systems Agency, Defense Intelligence Agency, Defense Logistics Agency, Defense Security Service, Defense Threat Reduction Agency, National Geospatial-Intelligence Agency, National Reconnaissance Office, National Security Agency/Central Security Service, and the Office of the Inspector General of the Department of Defense.

(2) The Deputy Chief Management Officer (DCMO) will serve as the appellate authority for the OSD and the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, Armed Services of Contract Appeals, Defense Technical Information Center, Joint Personnel Recovery Agency, DoD Education Activity, National Guard Bureau, United States Africa Command, United States Central Command, United States European Command, United States Northern Command, United States Pacific Command, United States Special Operations Command, United States Strategic Command, and United States Transportation Command. The DCMO may delegate this authority to an appropriate official of the DCMO staff.

(3) An appeal will normally not be adjudicated if the request becomes a matter of FOIA litigation. This decision should be made after consultation with the Department of Justice attorney responsible for the litigation.

(c) *Decisions on appeals.* A decision on an appeal must be made in writing and signed by the appellate authority. A decision that upholds a DoD Component's determination in whole or in part will contain a statement that identifies the reasons for the affirmance, including any FOIA exemptions applied. The decision will provide the requester with notification of the statutory right to file a lawsuit. If a decision is remanded or modified on appeal, the requester will be notified of that determination in writing. The DoD Component will thereafter further process the request in accordance with that appeal determination and respond directly to the requester.

(d) *When an appeal is required.* A requester generally must first submit a timely administrative appeal before seeking review by a court of a DoD Component's adverse determination.

Subpart E—Fees

§ 286.12 Schedule of fees.

(a) *In general.* DoD Components shall charge for processing requests under the FOIA in accordance with the provisions of this section and with the OMB Guidelines. For purposes of assessing fees, the FOIA establishes three categories of requesters: Commercial; non-commercial scientific or educational institutions or news media; and all other requesters. Different fees are assessed depending on the category. Requesters may seek a fee waiver. DoD Components shall consider such requests in accordance with the requirements in paragraph (m) of this section. In order to resolve any fee issues that arise under this section, a DoD Component may contact a requester for additional information. DoD Components shall ensure that searches, review, and duplication are conducted in the most efficient and least expensive manner. Requesters must pay fees by check or money order made payable to the Treasury of the United States.

(b) *Definitions.* For purposes of this section:

(1) *Commercial use request* is a request that asks for information for a use or purpose that furthers a commercial, trade, or profit interest, which can include furthering those interests through litigation. A DoD Component's decision to place a requester in the commercial use category will be made on a case-by-case basis based on the requester's intended use of the information. DoD Components will notify requesters of their placement in this category.

(2) *Direct costs* are those expenses that a DoD Component incurs in searching for and, in the case of commercial use requests, reviewing records in order to respond to a FOIA request. DoD direct costs for human activity are at Table 1.

TABLE 1—FOIA HOURLY PROCESSING FEES

Type	Grade	Hourly rate
Administrative	E–9/GS–8 and below	$24
Professional	Contractor/O–1 to O–6/W–1 to W–5/GS–9 to GS–15	48
Executive	O–7 and above and Senior Executive Service	110

(3) *Duplication* is reproducing a copy of a record, or of the information contained in it, necessary to respond to a FOIA request.

(4) *Educational institution* is any school that operates a program of scholarly research. A requester in this fee category must show that the request is made in connection with his or her role at the educational institution. DoD Components may seek verification from the requester that the request is in furtherance of scholarly research and will advise requesters of their placement in this category.

(5) *Noncommercial scientific institution* is an institution that is not operated on a ''commercial'' basis, as defined in paragraph (b)(1) of this section and that is operated solely for the purpose of conducting scientific research the results of which are not intended to promote any particular

product or industry. A requester in this category must show that the request is authorized by and is made under the auspices of a qualifying institution and that the records are sought to further scientific research and are not for a commercial use. DoD Components will advise requesters of their placement in this category.

(6) *Representative of the news media* is any person or entity that gathers information of potential interest to a segment of the public, uses its editorial skills to turn raw materials into a distinct work, and distributes that work to an audience. The term ''news'' means information that is about current events or that would be of current interest to the public. Examples of news media entities include television or radio stations that broadcast ''news'' to the public at large and publishers of periodicals that disseminate ''news'' and make their products available through a variety of means to the general public, including news organizations that disseminate solely on the Internet. A request for records supporting the news-dissemination function of the requester shall not be considered to be for a commercial use. ''Freelance'' journalists who demonstrate a solid basis for expecting publication through a news media entity shall be considered as a representative of the news media. A publishing contract would provide the clearest evidence that publication is expected; however, DoD Components shall also consider a requester's past publication record in making this determination. DoD Components will advise requesters of their placement in this category.

(7) *Review* is the examination of a record located in response to a request in order to determine whether any portion of it is exempt from disclosure. Review time includes processing any record for disclosure, such as doing all that is necessary to prepare the record for disclosure, including the process of redacting the record and marking the appropriate exemptions. Review costs are properly charged even if a record ultimately is not disclosed. Review time also includes time spent both obtaining and considering any formal objection to disclosure made by a confidential commercial information submitter under § 286.11, but it does not include time spent resolving general legal or policy issues regarding the application of exemptions.

(8) *Search* is the process of looking for and retrieving records or information responsive to a request. Search time includes page-by-page or line-by-line identification of information within records and the reasonable efforts expended to locate and retrieve information from electronic records.

(c) *Fee category.* Fees are assessed based on the category determined to be appropriate for the requester's category. The fee category of a requester that is an attorney or any other agent representing a client is determined by the fee category of the attorney's client. If the fee category of the client is not clear, then the DoD Components should ask the requester for clarification. If an attorney does not provide enough information to determine the fee category of the client, then the DoD Component may assign commercial fee category to the requester.

(d) *Charging fees.* In responding to FOIA requests, DoD Components will charge the following fees unless a waiver or reduction of fees has been granted under paragraph (m) of this section. Because the fee amounts provided below already account for the direct costs associated with a given fee type, DoD Components should not add any additional costs to charges calculated under this section.

(1) *Search.* (i) Requests made by educational institutions, noncommercial scientific institutions, or representatives of the news media are not subject to search fees. Search fees shall be charged for all other requesters, subject to the restrictions of paragraph (e) of this section. DoD Components may properly charge for time spent searching even if they do not locate any responsive records or if they determine that the records are entirely exempt from disclosure.

(ii) For each quarter hour spent by personnel searching for requested records, including electronic searches that do not require new programming, the fees shall be charged as listed at Table 1.

(iii) Requesters will be charged the direct costs associated with conducting any search that requires the creation of a new computer program to locate the requested records. These costs will not include the time it takes to run the program and extract data. Requesters will be notified of the costs associated with creating such a program and must agree to pay the associated costs before the costs may be incurred.

(iv) For requests that require the retrieval of records stored by a DoD Component at a Federal records center operated by NARA, additional costs will be charged in accordance with the Transactional Billing Rate Schedule established by NARA.

(2) *Duplication.* Duplication fees will be charged to all requesters, subject to the restrictions of paragraph (e) of this section. DoD Components will honor a requester's preference for receiving a record in a particular form or format where it is readily reproducible by the DoD Component in the form or format requested. Where photocopies are supplied, DoD Components will provide one copy per request at $.15 per page. For copies of records produced on tapes, disks, or other media, or other forms of duplication, DoD Components will charge the direct costs of producing the copy, including operator time in accordance with Table 1. DoD Components will charge record reproduction fees at the hourly rates in Table 1 if the creation of the electronic copies requires unique security procedures incurring considerable operator time, costing more than printing paper copies.

(3) *Review.* Review fees will be charged to requesters who make commercial use requests. Review fees shall be assessed in connection with the initial review of the record, *i.e.,* the review conducted by a DoD Component to determine whether an exemption applies to a particular record or portion of a record. No charge will be made for review at the administrative appeal stage of exemptions applied at the initial review stage. However, if a particular exemption is deemed to no longer apply, any costs associated with a DoD Component's re-review of the records in order to consider the use of other exemptions may be assessed as review fees. Review fees will be charged at the same rates as those charged for a search under paragraph (d)(1)(ii) of this section.

(e) *Restrictions on charging fees.* (1) When a DoD Component determines that a requester is an educational institution, non-commercial scientific institution, or representative of the news media, and the records are not sought for commercial use, no search fees will be charged.

(2) If a DoD Component fails to comply with the time limits in which to respond to a request it may not charge search fees, or, in the instances of requests from requesters described in paragraph (e)(1) of this section, may not charge duplication fees except as described in (e)(2)(i) through (iii).

(i) When a DoD Component determines that unusual circumstances, as those terms are defined by the FOIA, apply to the processing of the request, and provides timely written notice to the requester, then the DoD Component is granted an additional ten days until the fee restriction in paragraph (e)(2) of this section applies.

(ii) When a DoD Component determines that unusual circumstances apply and more than 5,000 pages are

necessary to respond to the request, provides timely written notice to the requester, and has discussed with the requester (or made three good faith attempts to do so) on how the requester can effectively limit the scope of the request, the fee restriction in paragraph (e)(2) of this section does not apply.

(iii) If a court has determined that exceptional circumstances exist, as defined by the FOIA, a failure to comply with the time limits shall be excused for the length of time provided by the court order.

(3) No search or review fees will be charged for a quarter-hour period unless more than half of that period is required for search or review.

(4) Except for requesters seeking records for a commercial use, DoD Components shall provide without charge:

(i) The first 100 pages of duplication (or the cost equivalent for other media); and

(ii) The first two hours of search.

(5) No fee will be charged when the total fee, after deducting the 100 free pages (or its cost equivalent) and the first two hours of search, is equal to or less than $25.

(f) *Notice of anticipated fees in excess of $25.00.* (1) When a DoD Component determines or estimates that the fees to be assessed in accordance with this section will exceed $25.00, the DoD Component shall notify the requester of the actual or estimated amount of the fees, including a breakdown of the fees for search, review or duplication, unless the requester has indicated a willingness to pay fees as high as those anticipated. If only a portion of the fee can be estimated readily, the DoD Component will advise the requester accordingly. If the requester is a noncommercial use requester, the notice shall specify that the requester is entitled to the statutory entitlements of 100 pages of duplication at no charge and, if the requester is charged search fees, two hours of search time at no charge, and will advise the requester whether those entitlements have been provided.

(2) When a requester is notified that the actual or estimated fees are in excess of $25.00, the request will not be considered received and further work will not be completed until the requester commits in writing to pay the actual or estimated total fee, or designates some amount of fees the requester is willing to pay, or in the case of a noncommercial use requester who has not yet been provided with the requester's statutory entitlements, designates that the requester seeks only that which can be provided by the statutory entitlements. The requester must provide the commitment or designation in writing, and must, when applicable, designate an exact dollar amount the requester is willing to pay. DoD Components are not required to accept payments in installments.

(3) If the requester has indicated a willingness to pay some designated amount of fees, but the DoD Component estimates that the total fee will exceed that amount, the DoD Component will toll the processing of the request when it notifies the requester of the estimated fees in excess of the amount the requester has indicated a willingness to pay. The DoD Component will inquire whether the requester wishes to revise the amount of fees the requester is willing to pay or modify the request. Once the requester responds, the time to respond will resume from where it was at the date of the notification.

(4) DoD Components will make available their FOIA Public Liaison or other FOIA professional to assist any requester in reformulating a request to meet the requester's needs at a lower cost.

(g) *Charges for other services.* Although not required to provide special services, if a DoD Component chooses to do so as a matter of administrative discretion, the direct costs of providing the service shall be charged. Examples of such services include certifying that records are true copies, providing multiple copies of the same document, or sending records by means other than first class mail.

(h) *Charging interest.* DoD Components may charge interest on any unpaid bill starting on the 31st day following the date of billing the requester. Interest charges shall be assessed at the rate provided in 31 U.S.C. 3717 and will accrue from the billing date until payment is received by the DoD Component. DoD Components shall follow the provisions of the Debt Collection Act of 1982 (Pub. L. 97–365, 96 Stat. 1749), as amended, and its administrative procedures, including the use of consumer reporting agencies, collection agencies, and offset.

(i) *Aggregating requests.* When a DoD Component reasonably believes that a requester or a group of requesters acting in concert is attempting to divide a single request into a series of requests for the purpose of avoiding fees, the DoD Component may aggregate those requests and charge accordingly. DoD Components may presume that multiple requests of this type made within a 30-day period have been made in order to avoid fees. For requests separated by a longer period, DoD Components will aggregate them only where there is a reasonable basis for determining that aggregation is warranted in view of all the circumstances involved. Multiple requests involving unrelated matters shall not be aggregated.

(j) *Advance payments.* (1) For requests other than those described in paragraphs (k)(2) or (3) of this section, a DoD Component shall not require the requester to make an advance payment before work is commenced or continued on a request.

(2) When a DoD Component determines or estimates that a total fee to be charged under this section will exceed $250.00, it may require that the requester make an advance payment up to the amount of the entire anticipated fee before beginning to process the request. A DoD Component may elect to process the request prior to collecting fees when it receives a satisfactory assurance of full payment from a requester with a history of prompt payment.

(3) Where a requester has previously failed to pay a properly charged FOIA fee to any agency within 30 calendar days of the billing date, a DoD Component may require that the requester pay the full amount due, plus any applicable interest on that prior request, and the DoD Component may require that the requester make an advance payment of the full amount of any anticipated fee before the DoD Component begins to process a new request or continues to process a pending request or any pending appeal. Where a DoD Component has a reasonable basis to believe that a requester has misrepresented the requester's identity in order to avoid paying outstanding fees, it may require that the requester provide proof of identity.

(4) In cases in which a DoD Component requires advance payment, the request shall not be considered received and further work will not be completed until the required payment is received. If the requester does not pay the advance payment within 30 calendar days after the date of the DoD Component's fee determination, the request will be closed.

(k) *Other statutes specifically providing for fees.* The fee schedule of this section does not apply to fees charged under any statute that specifically requires an agency to set and collect fees for particular types of records. In instances where records responsive to a request are subject to a statutorily-based fee schedule program, the DoD Component shall inform the requester of the contact information for that program.

(l) *Requirements for waiver or reduction of fees.* (1) Requesters may seek a waiver of fees by submitting a written application specifically demonstrating how disclosure of the requested information is in the public interest because it is likely to contribute significantly to public understanding of the operations or activities of the government and is not primarily in the commercial interest of the requester.

(2) A DoD Component will furnish records responsive to a request without charge or at a reduced rate when it determines, based on all available information, that the following three factors are satisfied:

(i) Disclosure of the requested information would shed light on the operations or activities of the government. The subject of the request must concern identifiable operations or activities of the Federal Government with a connection that is direct and clear, not remote or attenuated.

(ii) Disclosure of the requested information would be likely to contribute significantly to public understanding of those operations or activities. This factor is satisfied when the following criteria are met:

(A) Disclosure of the requested records must be meaningfully informative about government operations or activities. The disclosure of information that already is in the public domain, in either the same or a substantially identical form, would not be meaningfully informative if nothing new would be added to the public's understanding.

(B) The disclosure must contribute to the understanding of a reasonably broad audience of persons interested in the subject, as opposed to the individual understanding of the requester. A requester's expertise in the subject area as well as the requester's ability and intention to effectively convey information to the public shall be considered. DoD Components will presume that a representative of the news media satisfies this criterion.

(iii) The disclosure must not be primarily in the commercial interest of the requester. To determine whether disclosure of the requested information is primarily in the commercial interest of the requester, DoD Components shall consider the following criteria:

(A) DoD Components will identify whether the requester has any commercial interest that would be furthered by the requested disclosure. A commercial interest includes any commercial, trade, or profit interest. Requesters will be given an opportunity to provide explanatory information regarding this consideration.

(B) If there is an identified commercial interest, the DoD Component will determine whether that is the primary interest furthered by the request. A waiver or reduction of fees is justified when the requirements of paragraphs (m)(2)(i) and (ii) of this section are satisfied and any commercial interest is not the primary interest furthered by the request. DoD Components ordinarily will presume that when a news media requester has satisfied the factors in paragraphs (m)(2)(i) and (ii) of this section, the request is not primarily in the commercial interest of the requester. Disclosure to data brokers or others who merely compile and market government information for direct economic return shall not be presumed to primarily serve the public interest.

(3) Where only some of the records to be released satisfy the requirements for a waiver of fees, a waiver shall be granted for those records.

(4) Requests for a waiver or reduction of fees should be made when the request is first submitted to the DoD Component and should address the criteria referenced in paragraphs (l)(1) and (2) of this section. A requester may submit a fee waiver request at a later time so long as the underlying record request is pending or on administrative appeal. When a requester who has committed to pay fees subsequently asks for a waiver of those fees and that waiver is denied, the requester is required to pay any costs incurred up to the date the fee waiver request was received.

(m) *Tracking of costs.* DoD Components will track processing costs for each FOIA request on DD Form 2086, ''Record of Freedom of Information (FOI) Processing Cost,'' or by using DD Form 2086–2, ''Freedom of Information (FOI) Consultation and Request Summary''.

§ 286.13 Fees for technical data.

(a) Technical data shall be released to a requester after all reasonable costs of search, review, and duplication are paid by the requester as authorized by 10 U.S.C. 2328.

(b) Technical data means information (regardless of the form or method of the recording) of a scientific or technical nature (including computer software documentation) relating to the supplies procured by the DoD. This includes information in the form of blueprints, drawings, photographs, plans, instructions or documentation. This term does not include computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration. Examples of technical data include research and engineering data, engineering drawings, and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog item identification, and computer software documentation.

(1) All reasonable costs as used in this sense are the full costs to the Federal Government of rendering the service, or fair market value of the service, whichever is higher. Fair market value shall be determined in accordance with commercial rates in the local geographical area. In the absence of a known market value, charges shall be based on recovery of full costs to the Federal Government. The full costs shall include all direct and indirect costs to conduct the search and to duplicate the records responsive to the request. Costs will be tracked on DD Form 2086–1, ''Record of Freedom of Information (FOI) Processing Cost for Technical Data'' (available at *http://www.dtic.mil/whs/directives/infomgt/forms/eforms/dd2086-1.pdf*).

(2) The DoD Components will retain the fees received by the release of technical data under the FOIA, and will merge it with and make it available for the same purpose and the same time period as the appropriation from which the costs were incurred in complying with the FOIA request.

(3) Table 2 will be used to determine document production fees.

TABLE 2—FOIA DOCUMENT PRODUCTION FEES—TECHNICAL DATA

Type	Cost
Aerial Photographs, Specifications, Permits, Charts, Diagrams, Technical Drawings, Blueprints, and Other Technical Documents (per page or copy)	$2.50
Engineering Data:	
Aperture Cards, per card	3.00
Silver Duplicate Negative	3.50
When Keypunched and Verified	1.00
Diazo Duplicate Negative	3.50
When Keypunched and Verified	3.00
35 mm Roll Film, per frame	1.00
16 mm Roll Film, per frame	0.65
Paper Prints (engineering drawings), each (per square foot)	0.30
Paper Reprints of Microfilm Images, each	0.10
Other Technical Data Records:	

TABLE 2—FOIA DOCUMENT PRODUCTION FEES—TECHNICAL DATA—Continued

Type	Cost
Paper Copy (standard size paper up to 8½ x 14, photocopier or printer)	0.15
CD/DVD	5.00
Microfiche Produced, each	3.50
Certification and Validation with Seal, each document	50.00

(c) The DoD Components will waive the payment of costs required in paragraph (a) of this section that are greater than the costs that would be required for release of this same information under § 286.12 if:

(1) The FOIA request is made by a U.S. citizen or a U.S. corporation, and such citizen or corporation certifies that the technical data requested is required to enable it to submit an offer, or to determine whether it is capable of submitting an offer, to provide the product to which the technical data relates to the United States or a U.S. contractor. However, the DoD Components may require the citizen or corporation to pay a deposit in an amount equal to but not more than the cost of complying with the FOIA request, which will be refunded upon submission of an offer by the citizen or corporation;

(2) The release of technical data is requested in order to comply with the terms of an international agreement; or

(3) The DoD Component determines, in accordance with paragraph (m) of § 286.12, that such a waiver is in the interest of the United States.

Dated: December 23, 2016.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2016–31686 Filed 1–4–17; 8:45 am]

BILLING CODE 5001–06–P

POSTAL SERVICE

39 CFR Part 20

International Mailing Services: Mailing Services Price Changes

AGENCY: Postal Service™.

ACTION: Notice of approval of price changes for mailing services.

SUMMARY: On October 17, 2016, the Postal Service published a notice of proposed price adjustments to reflect a notice of price adjustments filed with the Postal Regulatory Commission (PRC). The PRC has found that price adjustments contained in the Postal Service's notice may go into effect on January 22, 2017. The Postal Service will revise Notice 123, *Price List* to reflect the new prices.

DATES: *Effective date:* January 22, 2017.

FOR FURTHER INFORMATION CONTACT: Paula Rabkin at 202–268–2537.

SUPPLEMENTARY INFORMATION:

I. Proposed Rule and Response

On October 12, 2016, the Postal Service filed a notice of mailing services price adjustments with the Postal Regulatory Commission (PRC) for products and services covered by *Mailing Standards of the United States Postal* Service, International Mail Manual (IMM®), to be effective on January 22, 2017. In addition, on October 17, 2016, the USPS™ published a notice of proposed price changes in the **Federal Register** entitled ''International Mailing Services: Proposed Price Changes'' (81 FR 71427). The notice included price changes that we would adopt for products and services covered by *Mailing Standards of the United States Postal Service,* International Mail Manual (IMM®) and publish in Notice 123, *Price List,* on *Postal Explorer®* at *pe.usps.com.* We received no comments.

II. Decision of the Postal Regulatory Commission

As set forth in the PRC's Order No. 3610 issued on November 15, 2016, as well as in the PRC's Order No. 3670 issued on December 15, 2016, the PRC determined that the international prices in the Postal Service's Notice may go into effect on January 22, 2017. The new prices will accordingly be posted in Notice 123, on *Postal Explorer* at *pe.usps.com.*

Stanley F. Mires,

Attorney, Federal Compliance.

[FR Doc. 2016–31525 Filed 1–4–17; 8:45 am]

BILLING CODE 7710–12–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R04–OAR–2016–0468; FRL–9957–52–Region 4]

Air Plan Approval; Georgia: Procedures for Testing and Monitoring Sources of Air Pollutants

AGENCY: Environmental Protection Agency.

ACTION: Direct final rule.

SUMMARY: The Environmental Protection Agency (EPA) is taking direct final action to approve portions of State Implementation Plan (SIP) revisions submitted by the State of Georgia, through the Georgia Department of Natural Resources' Environmental Protection Division (GA EPD), on April 11, 2003, November 29, 2010, July 25, 2014, November 23, 2015, and November 29, 2016. The SIP submittals include changes to GA EPD's air quality rules that modify definitions. The portions of the SIP revisions that EPA is approving are consistent with the requirements of the Clean Air Act (CAA or Act).

DATES: This direct final rule is effective March 6, 2017 without further notice, unless EPA receives adverse comment by February 6, 2017. If EPA receives such comments, it will publish a timely withdrawal of the direct final rule in the **Federal Register** and inform the public that the rule will not take effect.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–R04–OAR–2016–0468 at *http://www.regulations.gov.* Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov.* EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *http://www2.epa.gov/dockets/commenting-epa-dockets.*

FOR FURTHER INFORMATION CONTACT: Sean Lakeman, Air Regulatory Management Section, Air Planning and Implementation Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street SW., Atlanta, Georgia 30303–8960. Mr. Lakeman can be reached by phone at (404) 562–9043 or via electronic mail at *lakeman.sean@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

On April 11, 2003, November 29, 2010, July 25, 2014, November 23, 2015, and November 29, 2016, GA EPD submitted SIP revisions to EPA for review and approval into the Georgia SIP that contain changes to a number of Georgia's air quality rules. The only change that EPA is approving into the SIP today modifies portions of Rule 391–3–1–.01—''Definitions'' with respect to procedures for testing and monitoring sources of air pollutants. The change requested by Georgia is discussed below. EPA is not taking action on any other changes in Georgia's submittals provided on April 11, 2003, November 29, 2010, July 25, 2014, November 23, 2015, and November 29, 2016, because these changes either do not address rule sections that are incorporated into the SIP or are being or have already been considered in a separate action.

II. EPA's Analysis of the State's Submission Regarding Rule 391–3–1–.01(nnnn)—''Procedures for Testing and Monitoring Sources of Air Pollutants''

In the November 29, 2016, submittal, Georgia is amending the definition of ''Procedures for Testing and Monitoring Sources of Air Pollutants'' at Rule 391–3–1–.01(nnnn) to reference the February 29, 2016, version of the Georgia Department of Natural Resources document entitled ''Procedures for Testing and Monitoring Sources of Air Pollutants.'' The purpose of that document is to identify the procedures used for testing and monitoring the air pollutant sources. The November 23, 2015, submittal revised the date of the document to reflect the then-current version of the document, dated January 5, 2015; the July 25, 2014, submittal revised the date of the document to reflect the then-current version of the document, dated February 8, 2013; the November 29, 2010, submittal revised the date to the then-current version, dated March 1, 2010; and the April 11, 2003, submittal revised the date to the then-current version, January 29, 2003. However, the more current November 29, 2016, SIP submittal revised the date to reflect the February 29, 2016, version of the document, and this revision supersedes the revisions submitted on April 11, 2003, November 29, 2010, July 25, 2014, and November 23, 2015. This change to the SIP is approvable because it merely updates the date of the ''Procedures for Testing and Monitoring Sources of Air Pollutants'' document referenced in the SIP-approved version of Rule 391–3–1–.01(nnnn). The revision to this rule in the November 23, 2015, SIP submittal became state-effective on August 14, 2016.

III. Incorporation by Reference

In this rule, EPA is finalizing regulatory text that includes incorporation by reference. In accordance with requirements of 1 CFR 51.5, EPA is finalizing the incorporation by reference of Georgia Rule 391–3–1–.01(nnnn) ''Procedures for Testing and Monitoring Sources of Air Pollutants,'' effective on August 3, 2015. Therefore, this material has been approved by EPA for inclusion in the SIP, has been incorporated by reference by EPA into that plan, is fully federally enforceable under sections 110 and 113 of the CAA as of the effective date of the final rulemaking of EPA's approval, and will be incorporated by reference by the Director of the Federal Register in the next update to the SIP compilation.[1] EPA has made, and will continue to make, these materials generally available through *www.regulations.gov* and/or at the EPA Region 4 Office (please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section of this preamble for more information).

IV. Final Action

EPA is taking direct final action to approve the changes to the Georgia SIP specifically identified in Section II, above, because these changes are consistent with the CAA. EPA is publishing this rule without prior proposal because the Agency views this as a noncontroversial submittal and anticipates no adverse comments. However, in the proposed rules section of this **Federal Register** publication, EPA is publishing a separate document that will serve as the proposal to approve the SIP revision should adverse comments be filed. This rule will be effective March 6, 2017 without further notice unless the Agency receives adverse comments by February 6, 2017.

If EPA receives such comments, then EPA will publish a document withdrawing the final rule and informing the public that the rule will not take effect. All public comments received will then be addressed in a subsequent final rule based on the proposed rule. EPA will not institute a second comment period. Parties interested in commenting should do so at this time. If no such comments are received, the public is advised that this rule will be effective on March 6, 2017 and no further action will be taken on the proposed rule.

[1] 62 FR 27968 (May 22, 1997).

V. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable federal regulations. *See* 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this action merely approves state law as meeting federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

The SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9,

2000), nor will it impose substantial direct costs on tribal governments or preempt tribal law.

The Congressional Review Act, 5 U.S.C. 801 *et seq.,* as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the CAA, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by March 6, 2017. Filing a petition for econsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. Parties with objections to this direct final rule are encouraged to file a comment in response to the parallel notice of proposed rulemaking for this action published in the proposed rules section of today's **Federal Register**, rather than file an immediate petition for judicial review of this direct final rule, so that EPA can withdraw this direct final rule and address the comment in the proposed rulemaking. This action may not be challenged later in proceedings to enforce its requirements. *See* section 307(b)(2).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Particulate matter, Volatile organic compounds.

Dated: December 15, 2016.

Heather McTeer Toney,

Regional Administrator, Region 4.

40 CFR part 52 is amended as follows:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

■ 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart L—Georgia

■ 2. In § 52.570, the table in paragraph (c) is amended by revising the entry ''391–3–1–.01'' to read as follows:

§ 52.570 Identification of plan.

* * * * *

(c) * * *

EPA APPROVED GEORGIA REGULATIONS

State citation	Title/subject	State effective date	EPA approval date	Explanation
391–3–1–.01	Definitions	8/14/2016	1/5/2017, [insert **Federal Register** citation].	
*	*	*	*	*

* * * * *

[FR Doc. 2016–31753 Filed 1–4–17; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[EPA–HQ–OPP–2016–0682; FRL–9956–54]

Propiconazole; Extension of Tolerance for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation extends a time-limited tolerance for combined residues of the fungicide propiconazole and its metabolites in or on avocado at 10 parts per million (ppm) for an additional 3-year period. This tolerance will expire and is revoked on December 31, 2019. This action is in response to EPA's granting of an emergency exemption under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) authorizing use of the pesticide on avocado trees. In addition, the Federal Food, Drug, and Cosmetic Act (FFDCA) requires EPA to establish a time-limited tolerance or exemption from the requirement for a tolerance for pesticide chemical residues in food that will result from the use of a pesticide under an emergency exemption granted by EPA under FIFRA.

DATES: This regulation is effective January 5, 2017. Objections and requests for hearings must be received on or before March 6, 2017, and must be filed in accordance with the instructions provided in 40 CFR part 178 (see also Unit I.C. of the **SUPPLEMENTARY INFORMATION**).

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA–HQ–OPP–2016–0682, is available at *http://www.regulations.gov* or at the Office of Pesticide Programs Regulatory Public Docket (OPP Docket) in the Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave. NW., Washington, DC 20460–0001. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the OPP Docket is (703) 305–5805. Please review the visitor instructions and additional information about the docket available at *http://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT: Michael L. Goodis, Registration Division (7505P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460–0001; main telephone number: (703) 305–7090; email address: *RDFRNotices@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

- Crop production (NAICS code 111).
- Animal production (NAICS code 112).

• Food manufacturing (NAICS code 311).

• Pesticide manufacturing (NAICS code 32532).

B. How can I get electronic access to other related information?

You may access a frequently updated electronic version of 40 CFR part 180 through the Government Printing Office's e-CFR site at *http://www.ecfr.gov/cgi-bin/text-idx?&c=ecfr&tpl=/ecfrbrowse/Title40/40tab_02.tpl.*

C. How can I file an objection or hearing request?

Under FFDCA section 408(g), 21 U.S.C. 346a, any person may file an objection to any aspect of this regulation and may also request a hearing on those objections. You must file your objection or request a hearing on this regulation in accordance with the instructions provided in 40 CFR part 178. To ensure proper receipt by EPA, you must identify docket ID number EPA–HQ–OPP–2016–0682 in the subject line on the first page of your submission. All requests must be in writing, and must be received by the Hearing Clerk on or before March 6, 2017. Addresses for mail and hand delivery of objections and hearing requests are provided in 40 CFR 178.25(b).

In addition to filing an objection or hearing request with the Hearing Clerk as described in 40 CFR part 178, please submit a copy of the filing (excluding any Confidential Business Information (CBI)) for inclusion in the public docket. Information not marked confidential pursuant to 40 CFR part 2 may be disclosed publicly by EPA without prior notice. Submit the non-CBI copy of your objection or hearing request, identified by docket ID number EPA–HQ–OPP–2016–0682, by one of the following methods:

• *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be CBI or other information whose disclosure is restricted by statute.

• *Mail:* OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave. NW., Washington, DC 20460–0001.

• *Hand Delivery:* To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at *http://www.epa.gov/dockets/contacts.html.*

Additional instructions on commenting or visiting the docket, along with more information about dockets generally, is available at *http://www.epa.gov/dockets.*

II. Background and Statutory Findings

EPA originally issued a final rule, published in the **Federal Register** of May 11, 2011 (76 FR 27261) (FRL–8873–2), which announced that on its own initiative under FFDCA section 408, 21 U.S.C. 346a, it established a time-limited tolerance for the combined residues of propiconazole and its metabolites in or on avocado at 10 ppm, with an expiration date of December 31, 2013. Subsequently, EPA published a final rule in the **Federal Register** of December 27, 2013 (78 FR 78746) (FRL–9904–15) to extend (revise) the expiration date for this tolerance to December 31, 2016. EPA established the tolerance because FFDCA section 408(l)(6) requires EPA to establish a time-limited tolerance or exemption from the requirement for a tolerance for pesticide chemical residues in food that will result from the use of a pesticide under an emergency exemption granted by EPA under FIFRA section 18. Such tolerances can be established without providing notice or period for public comment.

In 2014, EPA received a request to extend the use of propiconazole on avocado for an additional 3 years (under a quarantine exemption) due to the disease situation remaining an emergency condition, warranting authorization of use of propiconazole under a quarantine exemption. After having reviewed the submission, EPA concurred that emergency conditions exist. EPA authorized under FIFRA section 18 the use of propiconazole on avocado trees for control of laurel wilt disease in Florida.

EPA assessed the potential risks presented by residues of propiconazole in or on avocado. In doing so, EPA considered the safety standard in FFDCA section 408(b)(2), and decided that the necessary tolerance under FFDCA section 408(l)(6) would be consistent with the safety standard and with FIFRA section 18. The data and other relevant material have been evaluated and discussed in the final rule published in the **Federal Register** of May 11, 2011. Based on that data and information considered, the Agency reaffirms that extension of the time-limited tolerance will continue to meet the requirements of FFDCA section 408(l)(6). Therefore, the time-limited tolerance is extended for an additional 3-year period. EPA will publish a document in the **Federal Register** to remove the revoked tolerance from the Code of Federal Regulations (CFR). Although this tolerance will expire and is revoked on December 31, 2019, under FFDCA section 408(l)(5), residues of the pesticide not in excess of the amounts specified in the tolerance remaining in or on avocado after that date will not be unlawful, provided the pesticide is applied in a manner that was lawful under FIFRA and the application occurred prior to the revocation of the tolerance. EPA will take action to revoke this tolerance earlier if any experience with, scientific data on, or other relevant information on this pesticide indicate that the residues are not safe.

III. International Residue Limits

In making its tolerance decisions, EPA seeks to harmonize U.S. tolerances with international standards whenever possible, consistent with U.S. food safety standards and agricultural practices. EPA considers the international maximum residue limits (MRLs) established by the Codex Alimentarius Commission (Codex), as required by FFDCA section 408(b)(4). The Codex is a joint United Nations Food and Agriculture Organization/World Health Organization food standards program, and it is recognized as an international food safety standards-setting organization in trade agreements to which the United States is a party. EPA may establish a tolerance that is different from a Codex MRL; however, FFDCA section 408(b)(4) requires that EPA explain the reasons for departing from the Codex level.

The Codex has not established a MRL for propiconazole on avocado.

IV. Statutory and Executive Order Reviews

This action establishes a tolerance under FFDCA section 408(d) in response to a petition submitted to the Agency. The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled ''Regulatory Planning and Review'' (58 FR 51735, October 4, 1993). Because this action has been exempted from review under Executive Order 12866, this action is not subject to Executive Order 13211, entitled ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001) or Executive Order 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997). This action does not contain any information collections subject to OMB approval under the Paperwork Reduction Act (PRA) (44 U.S.C. 3501 *et seq.*), nor does it require any special considerations under Executive Order 12898, entitled ''Federal Actions To Address Environmental Justice in Minority

Populations and Low-Income Populations'' (59 FR 7629, February 16, 1994).

Since tolerances and exemptions that are established on the basis of a petition under FFDCA section 408(d), such as the tolerance in this final rule, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*), do not apply.

This action directly regulates growers, food processors, food handlers, and food retailers, not States or tribes, nor does this action alter the relationships or distribution of power and responsibilities established by Congress in the preemption provisions of FFDCA section 408(n)(4). As such, the Agency has determined that this action will not have a substantial direct effect on States or tribal governments, on the relationship between the national government and the States or tribal governments, or on the distribution of power and responsibilities among the various levels of government or between the Federal Government and Indian tribes. Thus, the Agency has determined that Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999) and Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249, November 9, 2000) do not apply to this action. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act (UMRA) (2 U.S.C. 1501 *et seq.*).

This action does not involve any technical standards that would require Agency consideration of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) (15 U.S.C. 272 note).

V. Congressional Review Act

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: December 20, 2016.

Daniel J. Rosenblatt,

Acting Director, Registration Division, Office of Pesticide Programs.

Therefore, 40 CFR chapter I is amended as follows:

PART 180—[AMENDED]

■ 1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 321(q), 346a and 371.

■ 2. In § 180.434, revise the entry for ''avocado'' in the table under paragraph (b) to read as follows:

§ 180.434 Propiconazole; tolerances for residues.

* * * * *

(b) * * *

Commodity	Parts per million	Expiration/ revocation date
Avocado	10	12/31/19
*	*	*

* * * * *

[FR Doc. 2016–31827 Filed 1–4–17; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

42 CFR Part 10

RIN 0906–AA89

340B Drug Pricing Program Ceiling Price and Manufacturer Civil Monetary Penalties Regulation

AGENCY: Health Resources and Services Administration, Department of Health and Human Services (HHS).

ACTION: Final rule.

SUMMARY: The Health Resources and Services Administration (HRSA) administers section 340B of the Public Health Service Act (PHSA), referred to as the ''340B Drug Pricing Program'' or the ''340B Program.'' This final rule will apply to all drug manufacturers that are required to make their drugs available to covered entities under the 340B Program. This final rule sets forth the calculation of the 340B ceiling price and application of civil monetary penalties (CMPs).

DATES: This rule is effective March 6, 2017.

FOR FURTHER INFORMATION CONTACT: CAPT Krista Pedley, Director, Office of Pharmacy Affairs (OPA), Healthcare Systems Bureau (HSB), HRSA, 5600 Fishers Lane, Mail Stop 08W05A, Rockville, MD 20857, or by telephone at 301–594–4353.

SUPPLEMENTARY INFORMATION:

I. Background

Section 602 of Public Law 102–585, the ''Veterans Health Care Act of 1992,'' enacted section 340B of the PHSA, ''Limitation on Prices of Drugs Purchased by Covered Entities,'' codified at 42 U.S.C. 256b. The 340B Program permits covered entities ''to stretch scarce Federal resources as far as possible, reaching more eligible patients and providing more comprehensive services.'' H.R. REP. No. 102–384(II), at 12 (1992). Eligible covered entity types are defined in section 340B(a)(4) of the PHSA. Section 340B of the PHSA instructs HHS to enter into a pharmaceutical pricing agreement (PPA) with certain drug manufacturers. When a drug manufacturer signs a PPA, it is opting into the 340B Program and it agrees to the statutory requirement that the prices charged for covered outpatient drugs to covered entities will not exceed defined 340B ceiling prices, which are based on quarterly pricing data obtained from the Centers for Medicare & Medicaid Services (CMS). Section 7102 of the Patient Protection and Affordable Care Act (Pub. L. 111–148) as amended by section 2302 of the Health Care and Education Reconciliation Act (Pub. L. 111–152) (HCERA) (hereinafter referred to as the ''Affordable Care Act''), added section 340B(d)(1)(B)(vi) of the PHSA, which provides for the imposition of sanctions in the form of civil monetary penalties, which—

(I) shall be assessed according to standards established in regulations to be promulgated by the Secretary;

(II) shall not exceed $5,000 for each instance of overcharging a covered entity that may have occurred; and

(III) shall apply to any manufacturer with an agreement under Section 340B of the PHSA that knowingly and intentionally charges a covered entity a price for purchase of a drug that exceeds the maximum applicable price under subsection 340B(a)(1).

The Affordable Care Act also added section 340B(d)(1)(B)(i)(I) of the PHSA, which requires ''[d]eveloping and publishing through an appropriate policy or regulatory issuance, precisely defined standards and methodology for the calculation of ceiling prices . . .'' CMPs provide a critical enforcement mechanism for HHS if manufacturers do not comply with statutory pricing obligations under the 340B Program. HHS is also finalizing this rule to provide increased clarity in the marketplace for all 340B Program

stakeholders as to the calculation of the 340B ceiling price.

Since 1992, HHS has administratively established the terms and certain elements of the 340B Program through guidelines published in the **Federal Register**, typically after publication of a notice in the **Federal Register** and opportunity for public comment. In September 2010, HHS published an advanced notice of proposed rulemaking (ANPRM) in the **Federal Register**, ''340B Drug Pricing Program Manufacturer Civil Monetary Penalties'' (75 FR 57230, September 20, 2010). After consideration of the comments received on the ANPRM, HHS published a notice of proposed rulemaking (NPRM) in the **Federal Register** (80 FR 34583, June 17, 2015) entitled, ''340B Drug Pricing Program Ceiling Price and Manufacturer Civil Monetary Penalties Regulation'' to implement CMPs for manufacturers who knowingly and intentionally charge a covered entity more than the 340B ceiling price for a covered outpatient drug and to provide increased clarity on the requirements of manufacturers to calculate the 340B ceiling price on a quarterly basis. The public comment period closed on August 17, 2015, and HHS received approximately 35 comments. HHS reopened the comment period (81 FR 22960, April 19, 2016) to invite additional comment on several specific areas of the NPRM: 340B ceiling price calculations that result in a ceiling price that equals zero (penny pricing), the methodology that manufacturers utilize when estimating the ceiling price for a new covered outpatient drug, and the definition of the knowingly and intentionally standard for manufacturer CMPs. The additional comment period closed on May 19, 2016, and HHS received approximately 70 comments during this additional comment period. The following section presents a summary of the comments received, grouped by subject, and a response to each grouping. All comments on the proposals included in the NPRM and the reopening Notice were considered in developing this final rule, and changes were made as described. Other changes were also made to improve clarity and readability.

II. Summary of Proposed Provisions and Analysis and Responses to Public Comments

The revisions to 42 CFR part 10 of the final rule are described according to the applicable section of the final rule. This final rule replaces § 10.1, § 10.2, § 10.3, and § 10.10, adds a new § 10.11, and eliminates § 10.20 and § 10.21.

General Comments

Comments received during both comment periods addressed general issues. We have summarized those comments and have provided a response below.

Comment: Several commenters urge HHS to specify that the effective date of the final rule be prospective and at least two quarters after the final rule's publication in the **Federal Register**. In addition, the commenters urge HHS to build in a significant grace period with respect to manufacturer compliance to give manufacturers sufficient time to put the necessary system capabilities in place. Other commenters asked HHS to revise the effective date of the final rule to 180 days after March 23, 2010, which would allow HHS to impose CMPs retroactively.

Response: The final rule is effective March 6, 2017. HHS recognizes that the effective date falls in the middle of a quarter. As such, HRSA plans to begin enforcing the requirements of this final rule at the start of the next quarter, which begins April 1, 2017. Manufacturers that offer 340B ceiling prices as of the quarter beginning April 1, 2017, must comply with the requirements of this final regulation. HHS believes that this timeframe provides manufacturers sufficient time to adjust systems and update their policies and procedures. HHS disagrees that the rule should be implemented retroactively. An attempt to apply the final rule retroactively would be administratively burdensome and difficult to implement for all stakeholders.

Comment: Several commenters urge HHS to defer the final rule pending the issuance of additional substantive program guidance. The commenters state that the issuance of substantive guidance first is more consistent with fundamental fairness in a civil penalty enforcement context, inasmuch as program stakeholders should understand their substantive obligations prior to any enforcement activity. The commenters also request that HHS finalize the information collection request (ICR) and gain experience first with administering the 340B ceiling price reporting system.

Response: HHS does not believe that the issuance of additional guidance is needed in order to implement this final rule. The provisions of this final rule will be effectively implemented independent of other programmatic regulations and guidances. Current policies under the 340B Program provide stakeholders with sufficient guidance regarding programmatic compliance. Regarding the ICR, HHS submitted an ICR pertaining to the collection of information for the 340B ceiling price reporting system in compliance with section 3507(a)(1)(D) of the Paperwork Reduction Act of 1995. The Office of Management and Budget (OMB) approved the ICR on September 28, 2015, after a formal notice and comment process (80 FR 22207, April 21, 2015). This final rule contains specific information related to the calculation of the 340B ceiling price and the imposition of CMPs against manufacturers who knowingly and intentionally overcharge a covered entity; therefore, it is not necessary to implement the 340B ceiling price reporting system prior to finalizing this rule.

Comment: A commenter requests that HHS provide login credentials to state Medicaid staff to facilitate dissemination of 340B ceiling price information. Alternatively, HHS could develop a different means of providing states with quarterly updates of 340B ceiling price calculations (*e.g.,* via designated state technical contacts).

Response: We appreciate the commenters concern, and HRSA and CMS are jointly working on alternative ways to share this information with states.

Comment: Several commenters argue that HHS does not have rulemaking authority to issue a binding ceiling price regulation, as it does not have general rulemaking authority with respect to the 340B Program. Regarding 340B ceiling prices, commenters point out that Congress directed HHS under section 340B(d)(1)(B)(i)(I) of the PHSA to establish ''precisely defined standards and methodology for the calculation of ceiling prices'' via ''an appropriate policy or regulatory issuance.'' They argue, however, that in other parts of the statute, Congress more clearly directs HHS to issue regulations. For instance, under section 340B(d)(1)(B)(vi)(I), Congress directed HHS to implement civil monetary penalties pursuant to ''standards established in regulations.'' Commenters argue that Congress intended to confer a different level of authority and did not give HHS authority to issue regulations in this area.

Response: HHS has the statutory authority under section 340B(d)(1)(B)(i)(I) of the PHSA to develop and publish through appropriate policy or a regulatory issuance, such as this final rule, the precisely defined standards and methodology for the calculation of 340B ceiling prices. The fact that Congress limited HHS to proceed by rulemaking

with regard to other authorities in the statute does not negate the choice that Congress expressly provided to HHS in section 340B(d)(1)(B)(i)(I) to proceed through either policy or regulation.

Comment: Some commenters suggest that the rule should require manufacturers to provide background information to HHS regarding 340B sales, including information such as the identity of the 340B covered entity billed for a given drug and the shipping location of the drug.

Response: HHS appreciates these comments; however, they are beyond the scope of this final rule.

Comment: Commenters noted that the rule only addressed one of the 340B Program integrity improvements required by the Affordable Care Act—CMPs for manufacturers. They suggested that HHS should not finalize this rule and should instead issue a new, comprehensive NPRM that addresses all the improvements as required by the Affordable Care Act. For instance, the commenters opposed the implementation of CMP procedures absent HHS's creation of an Administrative Dispute Resolution (ADR) process.

Response: HHS is choosing to issue separate rulemakings for the different areas of the 340B Program integrity improvements that the Affordable Care Act mandates and for which HHS has rulemaking authority. HHS is addressing the administrative dispute resolution process and issued an NPRM August 12, 2016, in the **Federal Register** (81 FR 53381). HHS anticipates finalizing the administrative dispute resolution regulation after the comments have been reviewed and considered.

Comment: Commenters note that the Affordable Care Act requires manufacturers to report to HHS the 340B ceiling price each quarter as well as any prior period lagged price concessions that could affect prior quarter 340B ceiling prices by changed average manufacturer price (AMP), Best Price, and unit rebate amounts (URA). The commenter further notes that the proposed rule did not address this circumstance. They suggested that HHS establish a secure protocol to submit pricing and publish for comment its proposed process for manufacturer reporting of such submissions.

Response: Section 340B(d)(1)(B) of the PHSA requires HHS to develop a system to verify the accuracy of 340B ceiling prices calculated by manufacturers and charged to covered entities. HHS recognizes the utility of the type of policy mentioned in the comments and plans to publish guidance on the particular components of the 340B ceiling price reporting system.

Subpart A—General Provisions

A. Purpose and Summary of 340B Drug Pricing Program—§ 10.1 and § 10.2

Section 10.1 and § 10.2 of the rule provide general information concerning section 340B of the PHSA, ''Limitation on Prices of Drugs Purchased by Covered Entities.'' Section 10.1 provides the purpose of part 10 and § 10.2 provides a summary of section 340B of the PHSA, which instructs the Secretary of Health and Human Services to enter into agreements with manufacturers of covered outpatient drugs under which the amount to be paid to manufacturers by certain statutorily defined covered entities does not exceed the 340B ceiling price. Manufacturers participating in the 340B Program are required to provide these discounts on all covered outpatient drugs sold to participating 340B covered entities. HHS did not receive any comments with respect to these sections and is finalizing these sections as proposed.

B. Definitions—§ 10.3

In the proposed rule, HHS sought to define several terms that were used throughout the regulation. These terms included: ''340B Drug,'' ''Average Manufacturer Price,'' ''Ceiling price,'' ''CMS,'' ''Covered entity,'' ''Covered outpatient drug,'' ''Manufacturer,'' ''National Drug Code,'' ''Pharmaceutical Pricing Agreement,'' ''Quarter,'' ''Secretary,'' and ''Wholesaler.'' HHS did not receive comment on the following terms, which are finalized in this rule as proposed: ''Average Manufacturer Price,'' ''Ceiling Price,'' ''CMS,'' ''National Drug Code,'' ''Pharmaceutical Pricing Agreement,'' and ''Secretary.'' For the remaining terms, HHS received specific comments and have summarized those comments below.

1. 340B Drug

Proposed § 10.3 set forth a definition of the term ''340B drug'' as a covered outpatient drug, as defined in section 1927(k) of the Social Security Act (SSA), purchased by a covered entity at or below the 340B ceiling price required pursuant to a PPA with the Secretary. Based on the comments received, HHS is removing this definition from the final rule, as HHS believes that the definition is unnecessary. HHS received the following comment regarding the definition of a 340B drug.

Comment: Several commenters suggest that HHS remove the proposed definition of a ''340B drug'' as the term is not used in the 340B statute or proposed regulations and as drafted could lead to confusion and uncertainty. The proposed definition also narrowly defines the circumstances under which a 340B covered entity can acquire the drug.

Response: After consideration of the comments received with respect to this definition and in light of the definition of covered outpatient drug as set forth in section 1927(k) of the SSA, which is also defined in this final rule, HHS does not believe the definition is necessary and is, therefore, removing the definition of a 340B drug from this final rule.

2. Covered Entity

The proposed rule defined the term covered entity as an entity that is listed in section 340B(a)(4) of the PHSA, meets the requirements under section 340B(a)(5) of the PHSA, and is registered and listed in the 340B database. HHS received several comments regarding the proposed definition of covered entity and have summarized them below.

Comment: Several commenters supported the proposed definition of ''covered entity'' as it included both registration and database listing requirements. They explain that HHS's proposal will improve the integrity of the Program, assist manufacturers in meeting their obligations, and strengthen manufacturer Medicaid compliance. Commenters urge HHS to include in the definition of covered entity that an organization must both: (1) Be in compliance with the duplicate discount and diversion prohibitions; and (2) be registered and appear on the 340B database as a participating entity during the quarter in which the transaction is made.

Response: The term covered entity is defined, in accordance with section 340B(a)(4) of the PHSA, to mean an entity that is listed in the statute and meets all of the requirements in section 340B(a)(5) pertaining to diversion and duplicate discounts. As the definition imposed in this final rule already includes that a covered entity must comply with section 340B(a)(5), it is not necessary for the definition to specify compliance with the requirements pertaining to diversion and duplicate discounts The process for appearing on the 340B database is separate and distinct from compliance with the requirements in section 340B(a)(5), and all covered entities listed on the 340B database are expected to be in compliance with this provision of the statute.

3. Covered Outpatient Drug

The term covered outpatient drug was defined in the proposed rule as having the meaning set forth in section 1927(k) of the SSA. HHS received several comments on the proposed definition and has summarized them below.

Comment: A few commenters recommended that HHS limit the definition of ''covered outpatient drug'' to only the definition at section 1927(k)(2) of the SSA, and not include the ''limiting definition'' of covered outpatient drugs in section 1927(k)(3) of the SSA to prevent manufacturers from limiting 340B pricing to drugs that are reimbursed separately, as opposed to those reimbursed under bundled payment methodologies. Commenters note that CMS is increasingly moving towards the use of bundled payments and other types of value-based purchasing models with the goal of 50 percent of all Medicaid payments being made under alternative payment models by 2018. Therefore, they argue, it is highly likely that an increasing number of covered entities will no longer be eligible for 340B pricing for Medicaid patients if section 1927(k)(3) of the SSA is incorporated into this regulation. Commenters urge the development of a definition of ''covered outpatient drug'' that is specific to the 340B Program and does not track with the Medicaid statute, which is limited to the Medicaid Drug Rebate Program (MDRP).

Response: Section 340B(b)(1) of the PHSA states that the term ''covered outpatient drug'' has the meaning set forth in section 1927(k) of the SSA. Section 1927(k) includes the limiting definition and HHS does not believe that the interpretation of covered outpatient drug is contrary to the purpose of the 340B Program. We disagree that covered entities will not be eligible for the 340B Program as a result of this provision.

4. Manufacturer

HHS defined the term manufacturer in the proposed rule as having the meaning set forth in section 1927(k) of the SSA. HHS received several comments on the proposed definition and has summarized them below.

Comment: For the term ''manufacturer,'' commenters urge HHS to incorporate its long-standing guidance that a manufacturer ''must hold legal title to or possession of the national drug code (NDC) for the covered outpatient drugs.'' The commenter explains that the PPA has reflected this provision. This is important because there could be distinct legal entities that own distinct NDCs and are different manufacturers for purposes of the 340B Program.

Response: Section 340B(b)(1) of the PHSA defines the term as having the meaning set forth in section 1927(k) of the SSA. Given the 340B statute's direct reference to section 1927(k) of the SSA, HHS does not believe that this term needs to be further defined in this final rule. However, for 340B Program purposes, a manufacturer would be the entity holding legal title or possessing the NDC in question.

Comment: Commenters urged HHS to clarify the distinction between ''manufacturers'' and ''wholesalers.'' They suggest HHS specify that ''traditional'' wholesale distribution operations and contract packaging and repackaging operations do not make an entity a ''manufacturer'' that can be subject to CMPs.

Response: The definition of ''manufacturer'' is finalized at § 10.3. To the extent that a wholesale distributor meets the definition of ''manufacturer,'' it would need to meet the requirements for manufacturers as defined in this rule.

5. Quarter

The term quarter is defined in the proposed rule as a calendar quarter, unless otherwise specified. HHS received several comments on this term, which are summarized below.

Comment: Several commenters support that 340B ceiling prices are calculated based on calendar quarters. However, the commenters argue that the proposed rule does not recognize the two-quarter lag between when a sales transaction occurs and when the applicable 340B ceiling price becomes effective. They urge HHS to clarify that 340B ceiling price calculations are based on sales transactions from two prior calendar quarters. They feel this is supported because calculating the 340B ceiling price for a particular calendar quarter in the immediate preceding quarter is not possible because AMP and Best Price for the quarter are not calculated and reported to CMS until 30 days after the end of a quarter.

Response: HHS agrees with the commenters. HHS notes that the 340B ceiling price is calculated based on data received from CMS that incorporates the quarterly pricing lag. For purposes of this final rule, HHS is interpreting the 340B ceiling price calculation provision at section 340B(a)(1) to be the AMP reported from the preceding calendar quarter minus the URA. Section 10.10(a) of this final rule, pertaining to the calculation of the 340B ceiling price, has been modified to align with the 340B statute pertaining to AMP calculations made in the preceding calendar quarter. For instance, the pricing data from the first quarter in any given year is not due to be reported to CMS until 30 days into the second quarter. Therefore, the pricing data from the first quarter cannot be used to price drugs until the third quarter. The definition of quarter will be finalized as proposed.

6. Wholesaler

The proposed rule defines wholesaler as the term as set forth in 42 U.S.C. 1396r–8(k)(11). HHS received several comments, which are summarized and responded to below.

Comment: Commenters suggest that HHS uniformly refer to the applicable sections of the SSA (as opposed to the reference to the United States Code) for purposes of consistency and to avoid any potential confusion. Other commenters note that the term ''wholesaler'' as defined in section 1927(k)(11) of the SSA is focused on the distribution to retail community pharmacies, which are entities that cannot qualify as 340B covered entities. They state further that while retail community pharmacies may serve as contract pharmacies, not all 340B covered entities maintain contract pharmacy arrangements. The commenters do not think it is appropriate to utilize a definition that focuses on drug distribution and retail community pharmacies. In addition, commenters urge HHS to ensure that specialty pharmacies, including radio pharmacies and nuclear pharmacies, are not included in the term ''manufacturer'' or ''wholesaler'' and, therefore, that the 340B ceiling price is not required to be offered by specialty pharmacies, although they may elect to do so. Unlike ''specialty distribution,'' which can be an entity that performs the same function as a wholesaler, specialty pharmacies are pharmacies that receive, rather than distribute drugs.

Response: After consideration of the comments received on the term wholesaler, HHS is removing this term from the final rule. The term ''wholesaler'' as defined at section 1927(k)(11) of the SSA is not appropriate for 340B Program purposes for the reasons cited by commenters and it is not necessary to define this term in the final rule. With respect to ''specialty distribution'' or ''specialty pharmacy,'' HHS notes that it is the manufacturer's responsibility to ensure compliance with 340B Program requirements, including the requirements set forth in this final rule.

Comment: Commenters urge HHS to clarify that (1) traditional wholesale

distribution operations (*e.g.,* purchasing or holding for resale or distribution) and (2) contract packaging and repackaging operations (*i.e.,* where the product does not bear the repackages labeler code) will not cause an entity to be a ''manufacturer'' that is potentially subject to CMPs. Instead, manufacturers subject to the 340B Program's pricing obligations (and potentially CMPs) should be limited to entities whose NDC labeler code appears on a drug product, as this approach is consistent with CMS and the MDRP.

Response: Although HRSA recognizes that wholesalers often act as independent entities, a manufacturer's failure to ensure that covered entities receive the 340B ceiling price through its distribution arrangements with wholesalers may be grounds for assessment of civil monetary penalties as set forth in this final rule.

Subpart B—340B Ceiling Price

A. Ceiling Price for a Covered Outpatient Drug—Calculation of 340B Ceiling Price—§ 10.10(a)

In the proposed rule, HHS recognized that the 340B ceiling price for a covered outpatient drug is equal to AMP minus the URA, and will be calculated using six decimal places. HRSA proposed to publish the 340B ceiling price rounded to two decimal places.

HHS received numerous comments on this provision in the proposed rule. In this final rule, HHS has decided to remove the terms ''package size'' and ''case package size'' and plans to address these operational elements concerning the 340B ceiling price calculation in future guidance associated with the 340B Program ceiling price reporting system. HHS has addressed specific comments with respect to this issue below.

Comment: Several commenters expressed concern that the terms ''package size'' and ''case package size'' are confusing and not in the 340B statute. Commenters argue that ''case package size'' is not a metric tabulated or reported under other price reporting programs or currently used by manufacturers. Commenters suggest HHS clarify the terms to assist stakeholders in understanding how 340B ceiling prices are calculated and to ensure consistency in the methodology used by manufacturers to calculate 340B ceiling prices. Commenters also urge HHS to refrain from introducing new variables without analysis and an understanding of the overall ceiling price calculation. Other commenters stated that case/package size was proposed in an effort to assist HHS in providing sales prices for an 11-digit NDC; however if the unit type and units per package are consistent with the units in the 11-digit NDC, then the sales price can be derived without using any other value.

Response: After consideration of the comments received, HHS has decided to remove ''package size'' and ''case package size'' from the final rule as the statute only speaks to the 340B ceiling price calculation as being AMP minus URA. HHS does plan to further elaborate on the manner that the terms relate to the 340B ceiling price calculation, and its use by the market, in future guidance associated with the 340B Program ceiling price reporting system.

Comment: Some commenters noted that the proposed rule would require calculation of the ceiling price to six decimal points and that the necessity of this added complexity is unclear. They suggested that the ceiling prices be reported and calculated in dollars and cents with two decimal places. Several commenters support and appreciate that HHS plans to publish the ceiling price rounded to two decimal places, which makes it easier for covered entities to determine if manufacturers are charging them appropriately.

Response: HHS has concluded that the data utilized for the 340B ceiling price calculation should be in the same format as reported to CMS. CMS has indicated in Manufacturer Release No. 82 (November 1, 2010) that when AMP is submitted to the Drug Data Reporting for Medicaid (DDR) system, it should be rounded to six decimal places. In Manufacturer Release No. 46 (April 18, 2000), CMS modified the rounding methodology for the URA and required manufacturers to round URA calculations to four digits and because the field codes require six digits, CMS ''pads'' positions five and six with zeros. HRSA receives both the AMP and URA data from CMS at six decimal places. For the purposes of calculating the 340B ceiling price, HHS has decided that data utilized for the calculation of the 340B ceiling price will be rounded to six decimal places in an effort to ensure an accurate 340B ceiling price. HHS will then make the 340B ceiling price available in the secure 340B ceiling price system rounded to two decimal places in an effort to ensure certainty in the market place.

Comment: Some commenters urge HHS to clarify in the final rule that the ceiling price calculation is based on the quarterly AMP as opposed to a monthly AMP.

Response: AMP is described in section 340B(a)(1) of the PHSA as the AMP for the drug under title XIX of the SSA in the preceding calendar quarter. The AMP used for the calculation of the 340B ceiling price is a quarterly AMP sent to HRSA by CMS on a quarterly basis. We agree with the commenters and have modified the final rule to clarify that the 340B ceiling price is based on quarterly AMP data.

Comment: Commenters argue that the ceiling price calculation mechanics are unclear given that HHS has not yet implemented the ceiling price verification mechanism and Web site for covered entities. Other commenters request that HHS provide a detailed, standardized 340B ceiling price methodology, including a written formula.

Response: With respect to the 340B ceiling price calculation, HHS has determined that this final rule will be limited to the elements necessary to calculate the 340B ceiling price as defined at section 340B(a)(1) of the PHSA. This final rule sets forth the 340B ceiling price calculation as AMP minus URA. The development of the 340B ceiling price reporting system is proceeding under a separate ICR process that is operational in nature and is not contingent upon the specific provisions contained in this final rule. This ICR was submitted and approved by OMB on September 28, 2015, after a formal notice and comment process (80 FR 22207, April 21, 2015, OMB No. 0915–0327).

Comment: Some commenters encourage HHS to require both manufacturers and CMS to report URA values to HHS for verification and resolution of anomalies or discrepancies.

Response: The reporting obligations of manufacturers and HRSA's receipt of pricing information from CMS are outside the scope of this rule.

B. Ceiling Price for a Covered Outpatient Drug—Exception—§ 10.10(b)

Where the URA equals the AMP for a drug, the section 340B ceiling price formula would result in a ceiling price of zero. The statute, however, clearly contemplates a payment to a manufacturer and the act of purchasing covered outpatient drugs. Setting a zero dollar ceiling price would run counter to the statutory scheme and lead to unintended consequences, including operational challenges. For example, some information technology systems are not able to generate invoices for any prices less than $0.01 and manufacturers may not be able to generate an electronic data interchange price update for an item that does not have a price of at least $0.01. The NPRM

therefore proposed that when the 340B ceiling price calculation resulted in an amount less than $0.01, a manufacturer charge a $0.01 per unit of measure.

In light of the comments received on this particular policy (when ceiling price calculations result in a ceiling price that equals a zero, or ''penny pricing''), HHS reopened the comment period (81 FR 22960, April 19, 2016) to solicit additional comment and determine whether or not alternatives raised in the comments regarding the penny pricing policy would be more appropriate. HHS also sought to provide the public with adequate opportunity to comment on alternatives to penny pricing.

The specific alternatives raised by commenters on the NPRM included the Federal Ceiling Price (FCP), the most recent positive 340B ceiling price from previous quarters, and nominal price. Some commenters stated that the FCP, which is the basis for certain Federal government program drug purchases, would be a viable alternative. Other commenters suggested that charging a ceiling price from previous quarters in which the ceiling price was greater than $0.00 would be reasonable. Finally, several commenters suggested that nominal pricing, which is a term used in the MDRP, would be more appropriate. Other commenters suggested that manufacturers should be able to utilize any reasonable pricing methodology that they choose.

In the reopening of the comment period published in the **Federal Register**, HHS received numerous comments supporting and opposing the alternatives to penny pricing. Several commenters opposed to the alternatives expressed that any alternatives to penny pricing would violate the 340B ceiling price formula and would reward manufacturers for raising prices faster than inflation. In addition, commenters opposed to the alternatives explained that they would directly conflict with the intent of the 340B Program by increasing costs for covered entities. Other commenters opposing the penny pricing policy suggested that the policy would result in drug shortages, stockpiling, diversion, harm to patients and abuse. Among support for several of the alternatives, these commenters recommended that HHS allow manufacturers to select a reasonable pricing methodology in accordance with their duty of good faith under the PPA.

After consideration of the comments received, HHS is finalizing the penny pricing policy as proposed. This long-standing policy reflects a balance between the equities of different stakeholders and establishes a standard pricing method in the market. Specific comments are addressed below.

Comment: Several commenters support the maintenance of the current HHS penny pricing proposal, believing it is the best approach for calculating the 340B ceiling price, that it is well-established and effective, and that it is consistent with HHS' existing policy. Many commenters were concerned that any alternatives to penny pricing would be inconsistent with the statute. Commenters encouraged HHS to consider the unintended impact that changing the penny pricing policy would have on the covered entities and the vulnerable populations they serve and supported finalizing the original penny pricing proposal. Commenters recommended that if alternate proposals were considered, HHS put forward more detailed models for thorough review and analysis of impact on covered entities.

Response: HHS agrees with the commenters supporting the current policy and is finalizing the penny pricing policy as proposed. HHS has established the penny pricing policy that allows for the next positive price ($0.01) when the calculation of the 340B ceiling price is zero. This policy is consistent with the timing of the 340B ceiling price calculation (preceding calendar quarter), and it appropriately aligns with the requisite data points (*i.e.,* AMP and URA) for the 340B ceiling price as set forth in section 340B(a)(1) of the PHSA. HHS believes that the proposed alternatives to penny pricing would be inconsistent with the 340B ceiling price formula established in section 340B(a) of the PHSA and would raise 340B ceiling prices above the statutory formula in ways that would be inconsistent with the statutory scheme. HHS believes that the penny pricing policy best effectuates the statutory scheme.

Comment: Some commenters stated that the inflationary penalty used to calculate the URA was established to discourage manufacturers from raising the price of drugs faster than inflation (*i.e.,* the rebate percentage increases when a manufacturer increases the price of a brand-name drug). Further, commenters believed that any alternative policy to penny pricing would reward manufacturers for raising prices faster than inflation. Commenters stated that the inflationary penalty used to calculate the URA was intentionally established by Congress to discourage manufacturers from raising the price of drugs faster than the rate of inflation and that any alternative to penny pricing would ignore this core component of the pricing formula established by Congress.

Response: Under the MDRP, CMS indexes quarterly AMPs to the rate of inflation (Consumer Price Index adjusted for inflation-urban). Section 1927(c)(2)(A) of the SSA provides that if the AMP increases at a rate faster than inflation, the manufacturer pays an additional rebate amount which is reflected in an increased URA. Historically, because of the basic rebate and the inflation factor, section 1927(c)(2)(A) of the SSA could increase the rebate amount manufacturers must pay to the States, and result in negative 340B ceiling prices. Due to the provision in section 1927(c)(2)(D) of the SSA that limits the unit rebate amount to 100 percent of the AMP, effective January 1, 2010, an increase in the basic rebate and inflation factor would not result in a negative 340B price, but could result in a zero 340B ceiling price. The methodologies proposed as alternatives to penny pricing would decrease the effect of the inflationary component of the statutory formula established by Congress (AMP increasing faster than inflation).

Comment: Commenters acknowledged HHS' authority and obligation to define the term ''ceiling price,'' but argued that a literal interpretation of the statutory text that would result in a calculated 340B ceiling price of zero dollars is an absurd outcome.

Response: The calculation of the 340B ceiling price is defined in section 340B(a)(1) of the PHSA as AMP minus URA. Under the MDRP, CMS indexes quarterly AMPs to the rate of inflation (Consumer Price Index adjusted for inflation-urban). Section 1927(c)(2)(A) of the SSA provides that if AMP increases at a rate faster than inflation, the manufacturer pays an additional rebate amount which is reflected in an increased URA, which could result in a 340B ceiling price of zero. Although infrequent, HHS notes that there are instances when the 340B ceiling price does calculate to a zero price. For example, in the first calendar quarter of 2016, approximately 1 percent of all drugs listed under the 340B program for that quarter resulted in a zero price.

For the reasons described in the previous responses, HHS does not believe that it is consistent with the statutory scheme to set the price at zero. In this circumstance, HHS is therefore requiring that manufacturers charge a $0.01 for the drug, which we believe best effectuates the statutory scheme by requiring a payment.

Comment: Several commenters stated that the 340B statute does not address situations where the 340B ceiling

pricing calculation results in zero and therefore the PPA should govern. Commenters argued that while the PPA does not directly address what should occur when the 340B pricing formula results in zero, it provides that the agreement ''shall be construed in accordance with Federal common law'' which requires the parties ''gap fill'' by negotiating ambiguous requirements in good faith. Other commenters offered criteria under which the duty of good faith would be met by a reasonable pricing methodology to include that the policy is readily and objectively verifiable, is statutorily supported, and represents a favorable discount to covered entities.

Response: The U.S. Supreme Court has stated that PPAs are not transactional, bargained for contracts, and that ''PPAs simply incorporate statutory obligations and record the manufacturers' agreement to abide by them'' (*Astra USA* v. *Santa Clara County,* 563 U.S. 110, 118 (2011)). Moreover, the PPA indicates that any ambiguities shall be interpreted in a manner that best effectuates the statutory scheme, not that any ambiguities should be negotiated between the parties. 340B Program requirements are based on the manner in which the Department interprets the statute, and are not subject to a contractual negotiation process. For the reasons previously stated, the Department has determined that penny pricing is the policy that best effectuates the statutory scheme.

Comment: Commenters suggested that HHS institute a similar policy to address zero prices as the Veterans Administration (VA) uses to implement the Master Agreement for FCP prices given to certain Federal purchasers pursuant to the Veterans Health Care Act of 1992, the same legislation that created the 340B Program. They state that the VA interprets its program, which is similar to the 340B Program, to require a good faith negotiation to set a reasonable price in the event of a negative or zero FCP.

Response: Contrary to the commenters' position, the approach utilized by the VA under its separate Prime Vendor Program supports the penny pricing policy. Similar to this final rule, the VA sets the price of a negative or zero priced FCP at $0.01. The VA's assumption for these drugs is, therefore, that prices are set at $0.01. While the VA also has an additional mechanism through which manufacturers can request nominal increases in the prices of drugs (Department of Veterans Affairs, Dear Manufacturer Letter, February 24, 1993), the VA's ability to increase prices by a nominal amount above this default is based on statutory authority that does not apply to the 340B Program. Title 38 U.S.C. 8126(a)(2) states that prices may nominally exceed the statutory formula if the VA determines it ''to be in the best interests of the Department or such Federal agencies.'' There is no similar authority in the 340B statute to exceed the basic price calculation, and therefore HHS does not have the same ability to adjust the pricing formula set by statute.

Comment: Many commenters strongly objected to the penny pricing policy. They argued that HHS did not articulate a non-arbitrary, non-capricious reason as to why a $0.01 price is reasonable. Some commenters stated that there is no material difference between zero and $0.01, and since HHS has already stated that zero is not reasonable, $0.01 is also not reasonable. They also argued that the price of zero or one penny fails to cover the costs of goods sold, so cannot be considered the ''purchase'' of product. Commenters argued that the penny pricing policy would result in an illegal taking of private property by the government. They also argued the policy would result in ''arbitrary'' or ''confiscatory'' price controls.

Response: The longstanding penny pricing policy attempts to strike a balance that best effectuates the statutory scheme while ensuring that a zero ceiling price does not result. There is no requirement in the statute that the price paid must cover the costs of the drug. Reading such a requirement into the statute would require the evaluation of the costs of not only zero priced drugs, but any drug with a 340B ceiling price that is only a nominal amount. HHS does not believe that such a system is consistent with the statute. The sale of a drug for a cost less than manufacturing costs still constitutes a ''purchase'' and does not result in the taking of private property.

HHS disagrees with commenters that there is no material difference between setting the price at zero and $0.01. Setting the price at $0.01 requires a payment and therefore ensures that there is a purchase within the meaning of the statute and, as a practical matter, between the buyer and seller. Setting the price at zero rather than $0.01 would lead to operational challenges. We understand, for instance, that some information technology systems are not able to generate invoices for any prices less than $0.01 and manufacturers may not be able to generate an electronic data interchange price update for an item that does not have a price of at least $0.01.

Manufacturer participation in the 340B Program is also voluntary, albeit required in order to participate in the MDRP. Moreover, it is important to note that a manufacturer controls when a product reaches a zero 340B ceiling price through its own pricing decisions. If a manufacturer does not wish to offer a zero 340B ceiling price, the manufacturer may choose not to participate in the 340B Program or may alter its drug pricing practices so as not to cause a zero 340B ceiling price. For example, when AMP increases more quickly than the rate of inflation, the manufacturer must pay a greater Medicaid rebate, which can also cause a zero 340B price. A manufacturer can control AMP by adjusting the prices that it charges for drugs.

Comment: Some commenters stated the penny pricing proposal is likely to result in and/or increase the potential for drug shortages and diversion, requiring manufacturers to adopt burdensome and costly ''alternate allocation procedures'' to correct for the market-distorting effect of HHS' policies. Commenters further stated the continuation of penny pricing policy would further exacerbate drug shortages, particularly for generic drugs, given that in the first quarter 2017 generic drugs will be subject to an additional rebate in the URA formula if the AMP for such drugs rises faster than inflation. Given this, the penny pricing provision would result in potential of stockpiling, diversion, harm to patients, and abuse of controlled substances. Commenters were also concerned that there could be an increase in risk evaluation and mitigation strategy (REMS) drugs and drugs for which there is a grey or black market.

Response: The penny pricing policy has been in place for many years and HHS does not have evidence that the policy causes significant risks of stockpiling, diversion, harm to patients, and abuse of controlled substances. HHS has existing policy with regard to manufacturer limited distribution plans for sales of covered outpatient drugs to eligible 340B entities under the 340B Program. Manufacturers may address any resultant market distribution challenges by developing and executing a plan for limited distribution to all purchasers of the affected drug, including 340B covered entities when penny pricing occurs. Manufacturers are currently able to develop appropriate limited distribution protocols. HHS will be sensitive to plans to address drug shortages, stockpiling, and oversupplying of drugs subject to abuse or with REMS warnings.

Comment: Many commenters stated their desire for the flexibility to use any or all of the alternative methods to penny pricing proposed. Manufacturer flexibility and discretion to adopt reasonable approaches to setting the 340B ceiling price when the ceiling price calculates to zero allows manufacturers to recover their costs while providing a discounted rate commensurate with the intent of the 340B statute.

Response: HHS believes it is most appropriate to establish a standard price calculation in this circumstance, as it is not practical to allow all manufacturers to choose from a variety of methods that could result in pricing variations that could create market disruption and uncertainty. Therefore, we are finalizing the penny pricing policy as proposed.

Comment: Some commenters were in favor of utilizing nominal pricing (less than 10 percent of AMP in the same quarter for which the AMP is computed) as an alternative to penny pricing. Commenters also noted that the MDRP uses this methodology, and that nominal price is a term that appears nine times in the Medicaid statute. They stated further that Congress has demonstrated support for applying this concept by listing 340B covered entities first among the six potential recipients to whom manufacturers may extend a nominal price without impacting best price. Commenters stated that nominal price addressed HHS' concern that ''prices must be based on the immediately preceding calendar quarter.''

Response: While the term nominal price appears in the Medicaid drug rebate statute, it is entirely absent from the 340B statute. Covered entities can receive a nominal price without impacting a manufacturers' best price for purposes of Medicaid calculations; however, nominal pricing is unrelated to the statutorily-mandated 340B Program pricing calculation. Although the nominal pricing alternative is based on the calendar quarter in which AMP is calculated, consistent with the timing of the 340B ceiling price calculation, it does not appropriately align with the requisite data points (*i.e.,* AMP and URA) for the 340B ceiling price as set in section 340B(a)(1) of the PHSA. HHS will therefore finalize penny pricing as proposed.

Comment: Some commenters favored the utilization of the most recent positive AMP or the last positive, non-zero ceiling price as an alternative to penny pricing. This approach would result in a significant discount to covered entities and would be analogous to the process under MDRP where manufacturers are required to report the most recent positive AMP if AMP equals zero. Carrying forward the most-recent, positive quarterly 340B ceiling price would have the practical effect of establishing a realistic covered entity purchase price, and would reduce the risk of diversion posed by penny pricing.

Response: The MDRP and the 340B Program are authorized under different statutes. While the commenter attempts to draw a comparison between the Medicaid AMP policy and the 340B penny pricing policy, AMP is not the only component of the 340B ceiling pricing formula, as the calculation also includes the URA.

In addition, utilizing the AMP calculation from the last positive quarter would not align with the statutory requirement at section 340B(a)(1) of the PHSA that the 340B ceiling price be based on the preceding calendar quarter's data and could encourage manufacturers to manipulate pricing data. In addition, this method ignores the portion of the congressionally mandated pricing formula regarding the inflation adjustment. Therefore, HHS has determined that this alternative is not an adequate alternative and will finalize this rule as proposed.

Comment: Many commenters were in favor of utilizing the FCP as an alternative to penny pricing. Commenters also suggested the FCP offers an objectively verifiable benchmark and conveys a significant discount to covered entities without driving stockpiling and diversion.

Response: The FCP has some similarities in intent and price-setting methodology to the 340B ceiling price. However, the FCP is generally computed once each calendar year and does not align with the requirement that 340B ceiling prices be calculated on a quarterly basis. Additionally, the FCP is not computed using the required calculation points of AMP and URA. Moreover, there is no mention of the FCP in the 340B statute. Therefore, HHS has determined that FCP is not an adequate alternative and will finalize this rule as proposed.

Comment: Some commenters requested an exception to the penny pricing policy for orphan drugs. They suggest that when 340B sales volume exceeds a given threshold (*e.g.,* 15 percent), a manufacturer should be permitted to utilize an alternative 340B price, such as its lowest commercial price.

Response: When an orphan drug meets the definition of a covered outpatient drug, it would be subject to the requirements as set forth in this final rule. Further, the statue does not contemplate an alternative pricing methodology for orphan drugs.

C. Ceiling Price for a Covered Outpatient Drug—New Drug Price Estimation—§ 10.10(c)

In general, calculation of the current quarter 340B ceiling price for each covered outpatient drug is based on pricing data from the immediately preceding calendar quarter. For new drugs, there is no sales data from which to determine the 340B ceiling price. HHS published guidelines in 1995 describing ceiling price calculations for new drugs (60 FR 51488, October 2, 1995) and the final rule will replace these guidelines.

In the NPRM, HHS proposed that manufacturers estimate the 340B ceiling price for a new covered outpatient drug as of the date the drug is first available for sale, and provide HHS an estimated 340B ceiling price for each of the first three quarters the drug is available for sale. HHS also proposed that, beginning with the fourth quarter the drug is available for sale, the manufacturer must calculate the 340B ceiling price as described in proposed 42 CFR 10.10(a). Under the proposed rule, the actual 340B ceiling price for the first three quarters would also have been calculated and manufacturers would have been required to provide a refund or credit to any covered entity that purchased the covered outpatient drug at a price greater than the calculated 340B ceiling price. HHS proposed that any refunds or credits owed to a covered entity would be provided by the end of the fourth quarter.

HHS received comments supporting and opposing the various components of its proposal on new drug price estimation. Commenters requested clarification on de minimis refunds under the proposed policy, price estimation methodologies, and whether refund policies stated in this regulation apply to all refunds, not just those corresponding to new drugs. Several commenters supported a specific methodology for calculating new drug prices, which included setting the price of the new covered outpatient drug as wholesale acquisition cost (WAC) minus the applicable rebate percentage (*i.e.,* 23.1 percent for most single-source and innovator drugs, 17.1 percent for clotting factors and drugs approved exclusively for pediatric indications, and 13 percent for generics). Commenters argued that this price would eliminate the need to estimate the price for the first three quarters and would result in a reasonable 340B ceiling price. Given the comments

received regarding setting a specific methodology, when HHS reopened the comment period, HHS sought comment on this issue. HHS specifically requested comment on setting the estimation at WAC minus the applicable rebate percentage.

After consideration of the comments received, HHS is modifying the final rule to require that manufacturers estimate, using a standardized methodology, the 340B ceiling price for a new covered outpatient drug until there is AMP data available to calculate an actual 340B ceiling price as set forth in 340B(a)(1) of the PHSA. The methodology set forth in this final rule for the estimated 340B ceiling price is WAC minus the appropriate rebate percentage. Once the AMP is known, and no later than the fourth quarter that the drug is available for sale, manufacturers would be required to calculate the actual 340B ceiling price based on AMP for the time under which the 340B ceiling price was estimated. The manufacturer is then required to offer a repayment to the covered entity the difference between the estimated 340B ceiling price and the actual 340B ceiling price within 120 days of the determination by the manufacturer that an overcharge occurred.

For example, if a manufacturer with a PPA has a new drug approved for sale in February, and that drug meets the definition of covered outpatient drug, the 340B price estimation requirements would apply for at least one full calendar quarter. During that time, the manufacturer would estimate the 340B ceiling price at WAC minus the appropriate rebate percentage until the manufacturer can calculate an AMP for the product, resulting in an actual 340B ceiling price based on that AMP. The estimation can occur for up to the first three calendar quarters of availability, at which point the manufacturer will have the necessary pricing data to calculate the 340B ceiling price based on section 340B(a)(1) of the PHSA.

Since manufacturers must offer repayments as set forth in this section, it is incumbent on them to contact affected covered entities as part of that process. During initial contact, a manufacturer and a covered entity may both determine that a given overcharge is not significant, or agree to other payment options such as netting or crediting. In these instances, both parties are free to pursue mutually agreed-upon alternative refund arrangements. HHS has summarized and provided a response to the comments below.

Comment: HHS received comments generally supporting and opposing the proposal to price new covered outpatient drugs at WAC minus the Medicaid minimum discount rebate percentages (*i.e.,* 23.1 percent for most single-source and innovator drugs, 17.1 percent for clotting factors and drugs approved exclusively for pediatric indications, and 13 percent for generics) until an AMP derived ceiling price can be identified after the third full quarter in which the drug became available. In addition, commenters suggested that HHS should not require subsequent pricing revisions or a refund once the actual price is determined. The commenters stated that such an approach would be simpler, while resulting in reasonable proxies for the final 340B ceiling prices.

Response: The 340B ceiling price is calculated based upon AMP minus URA data supplied by CMS that is reported by manufacturers under the MDRP. Given that the AMP for a new covered outpatient drug may not be known for a period of time after the drug comes to market, HHS sought a balance between a standardized and universally applicable interim pricing requirement, while also ensuring that covered entities ultimately receive the 340B ceiling price as defined by the statute. Therefore, we have added to the final rule that new covered outpatient drugs should be estimated and sold to 340B participating covered entities using a standardized formula for the estimation at WAC minus the applicable Medicaid drug rebate percentage until an actual 340B ceiling price can be determined based on AMP. HHS believes a standardized formula for the calculation of the estimation will create stability in the market and provide transparency and consistency in the process. While the commenter's suggested approach may be feasible, HHS does not believe that it is reflective of statutory intent. In addition, HHS has maintained in the final rule that once an actual 340B ceiling price can be determined, manufacturers will be obligated to refund any difference between the estimated 340B price and the actual 340B ceiling price. If a manufacturer refuses to refund covered entities after it has been determined covered entities were overcharged during the time the 340B ceiling price was estimated, that could meet the knowingly and intentionally standard to apply a CMP. This has been clarified in § 10.11 of this final rule.

Comment: HHS received several comments from covered entity groups expressing concern that the proposed new drug price estimation method, based on WAC minus the appropriate rebate percentage, would result in prices that are significantly higher than estimates derived from other methods. Commenters stated that WAC-derived pricing is often 30 percent higher than prices available to group purchasing organizations and that 340B ceiling prices are typically much lower than this estimation.

Response: HHS believes that the final rule ensures that covered entities will be able to receive the 340B ceiling price as defined in statute by requiring manufacturers to offer a refund to covered entities after the estimation period and within 120 days of determining there was an overcharge.

Comment: Several commenters suggested that the 340B Program follow Medicaid policy towards rebates for new drugs, whereby prices are determined from the beginning by AMP (rather than WAC) minus the applicable discount percentage. The commenters argued that policy alignment with Medicaid would greatly simplify rebate program administration, and minimize the need for future reconciliation of overcharges. Commenters also suggested that HHS should reevaluate such a formula for new drug pricing to see how closely it aligns with AMP derived pricing after the initial estimation period.

Response: The CMS Medicaid Covered Outpatient Drug Rule (81 FR 5270, February 1, 2016) refers to AMP-based pricing only when a new version of an existing drug comes to market. In the case of a new drug, the Medicaid program does not utilize AMP-based pricing, as there are no prior sales data to base it on. Therefore, initial prices must be based on another price point. HHS believes that using a standardized formula, WAC minus the appropriate rebate percentage, to estimate 340B ceiling prices prior to an AMP being available is the most appropriate way to implement pricing requirements with regards to new drugs.

Comment: Regarding the timeframe for new drug price calculations, several commenters suggested that new drug pricing follow the VA policy, whereby manufacturers are required to provide an initial (provisional) FCP statutory discount percentage to the WAC for 30 days, followed by a temporary pricing period predicated on the first 30 days of commercial sales, and permanent ceiling pricing taking effect after the first quarter by applying the statutory discount to the non-Federal AMP as it becomes available. Commenters cited the VA timeframe, whereby an estimated (WAC-based) price is used for the first month that a new drug is available, followed by a switch to a temporary (AMP-based) price.

Response: HHS believes that it is appropriate to minimize any restatements of pricing that occur as a new 340B drug comes to market. The VA timeframe does not correlate to the quarterly pricing that occurs in the 340B Program. Therefore, HHS has finalized the rule to estimate drug pricing as WAC minus the appropriate rebate percentage until an actual 340B ceiling price can be computed based on AMP.

HHS also notes that a provisional FCP is not required by the VA, it is optional. In addition, if a provisional FCP is established, it is not valid for just the first 30 days. It remains valid until the first temporary FCP comes due or is established, which could be up to 75 days from launch.

Comment: Commenters suggested that new drug calculations should not be subject to the two-quarter lag typical of other price calculations. These commenters recommended establishing an ''interim'' (WAC minus the appropriate rebate percentage) ceiling price through the first full quarter, followed by pricing based on the AMP, which can be established with one quarter of data. Other commenters suggested establishing provisional 340B ceiling prices for new drugs based on MDRP statutory discounts applied to an available U.S. sales reference price (*e.g.,* WAC reduced by estimates for quarterly URA values), thus eliminating the need for restatements at a later date.

Response: The 340B ceiling price is set by the statute and manufacturers are required to charge covered entities that ceiling price. Therefore, manufacturers are required to issue refunds if it is determined that a covered entity paid a price higher than the 340B ceiling price. HHS has also decided to standardize the pricing estimation during the period for which there is not an AMP available to calculate an actual 340B ceiling price. HHS believes that WAC minus the rebate percentage serves is a fair and reasonable estimated 340B ceiling price.

Comment: Commenters among the drug manufacturer community stated that it is not necessary to provide price estimates past the first full quarter, so that less time will elapse where a new drug ceiling price is estimated instead of being based on actual market data. Others stated that two quarters was sufficient to calculate prices based off the first quarter's sales data. Commenters argued that a shorter estimate period would reduce administrative burdens, and lessen the need for retroactive refunds.

Response: HHS agrees that an AMP for a new covered outpatient drug may be established after one full quarter has elapsed. Under the final rule, once the AMP is known, and no later than the fourth quarter that the drug is available for sale, manufacturers would be required to calculate the actual 340B ceiling price based on the AMP for the time under which the ceiling price was estimated. The estimation can occur for up to the first three calendar quarters of availability, at which point the manufacturer will have the necessary pricing data to calculate the 340B ceiling price based on section 340B(a)(1) of the PHSA. The manufacturer must offer to refund or credit the covered entity the difference between the estimated ceiling price and the actual 340B ceiling price within 120 days of the determination by the manufacturer that an overcharge occurred.

Comment: Commenters were concerned that the proposed timeframe for manufacturers to issue refunds or credits is too short. Commenters requested that the refund process for overestimated new drug prices follow the Medicaid approach of allowing 12 quarters for price restatements, followed by 2 quarters for the refund to occur. Other commenters wrote in support of the proposed fourth quarter standard.

Response: The NPRM proposed that refunds or credits be provided to entities by the end of the fourth quarter. HHS agrees additional time may be necessary to issue refunds. Therefore, HHS has changed the NPRM's fourth quarter standard in the final rule. In addition, the final rule states that manufacturers must offer to refund or credit the covered entity the difference between the estimated 340B ceiling price and the actual 340B ceiling price within 120 days of the determination by the manufacturer that an overcharge occurred. HHS believes that 120 days allows the manufacturer and the covered entity an opportunity to first determine whether the overcharge is significant, and if not, whether to make repayment options such as crediting or netting.

Comment: Commenters argued that the proposed refund procedure is inconsistent with the 1995 guidance (60 FR 51488, October 2, 1995) where covered entities are responsible for initiating the refund process, and must do so without a third-party intermediary and that the refund requests should be made by the end of the fourth full quarter after a new drug comes to market.

Response: Manufacturers are required by statute to provide covered entities the statutorily defined 340B ceiling price. Therefore, once a manufacturer determines there is an overcharge related to new drug price estimation as set forth in this final rule, manufacturers must notify covered entities affected and appropriately refund them accordingly. This final rule replaces the 1995 guidance in its entirety.

Comment: Commenters stated that requiring refunds following ceiling price recalculations would be inconsistent with the 340B statute because such refunds would impose an undue cost on manufacturers.

Response: In accordance with section 340B(a)(1) of the PHSA, 340B ceiling prices for covered entities must ''not exceed an amount equal to the average manufacturer price for the drug under title XIX of the SSA in the preceding calendar quarter, reduced by the rebate percentage'' outlined in section 340B(a)(2)(A) of the PHSA. Since the necessary predicate of an AMP cannot be known until a drug has been on the market for a preceding calendar quarter, we have determined that using a reasonable, standardized estimate in the interim, followed by refunds as the AMP is calculated, achieves the programmatic goal of assuring that covered entities receive refunds owed in both a timely and a complete manner. Regarding the cost to manufacturers, this policy involves using similar mechanisms currently in use for other refunds routinely issued by manufacturers, and does not represent a significant added cost.

Comment: Commenters requested clarification on what is meant by the ''expected'' versus the ''actual'' price, in addition to requests for clarification on methods for developing expected or estimated prices for new drugs.

Response: For the purposes of this rule, ''expected'' can be understood as the initial (estimated) 340B ceiling price that is charged to a covered entity when there is not yet an AMP to use in the 340B ceiling price calculation. HHS has added to this final rule a standardized formula to the new drug price cost estimation, which is WAC minus the appropriate rebate percentage. The ''actual'' 340B ceiling price is the price of a new drug once there is an AMP in place that is used to calculate the 340B ceiling price per statute.

Comment: Commenters requested clarification on the potential role of wholesalers and distributors in the refund process, specifically in identifying covered entities entitled to a refund based on new drug price estimation.

Response: The role of wholesalers and distributors is dependent on how individual manufacturers contract with these third parties to distribute 340B drugs. Whether wholesalers and distributors play a role in the refund process is determined by individual

manufacturers and their business operations with these stakeholders. The requirement to refund a covered entity as outlined in the final rule rests with the manufacturers. A manufacturer may use a third party to assist in ensuring they meet those requirements.

Comment: Several commenters requested that there be an exemption for de minimis refund amounts resulting from differences between initial ceiling price estimates and the establishment of a retroactive actual ceiling price after the first three quarters that a new drug becomes available. Commenters cited administrative burden in issuing refunds for all overcharges, regardless of their significance. Commenters representing both the manufacturer and the covered entity communities were broadly supportive of a defined threshold, as well as a stated timeframe for refunds to be issued.

Response: Manufacturers are obligated to offer repayments within 120 days of the determination that an overcharge occurred. HHS does not agree that the final rule should set a materiality threshold, and believes this is best approached by marketplace arrangements and in good faith negotiation between the parties. To the extent that a manufacturer and covered entity agree that a de minimis threshold for refunds should be established, such a threshold can be established through mutual agreement between the manufacturer and covered entity.

Comment: Regarding overcharges resulting from differences between estimated and actual ceiling prices, a number of commenters requested that overcharges be netted in a manner similar to MDRP regulations. The commenters stated that the MDRP permits manufacturers to aggregate the impact of restated prices on each sale to determine the net amount due after pricing restatements and that states are not permitted to retain excess rebate amounts paid upon recalculations. Commenters suggested that because the MDRP and 340B Program are closely intertwined, they should be consistently administered and allow a similar netting approach as to minimize administrative and financial burden of refunding 340B covered entities.

Response: To the extent there is an agreement between the manufacturer and covered entity, HHS does not intend to prevent manufacturers from using the industry's practice of netting overcharges and undercharges, or to restate ceiling prices based on pricing data submitted to CMS. However, the 340B statute is specific to ensuring each covered outpatient drug is offered at or below the 340B ceiling price. Once it is determined that an overcharge occurred, a manufacturer and a covered entity, in good faith, may both determine that a given overcharge is not significant, or agree to other payment options such as netting or crediting. In these instances, both parties are free to pursue mutually agreed-upon alternative refund arrangements.

Comment: Many commenters suggested that covered entities be held liable for undercharges that occur during a new drug's estimated pricing period.

Response: Given the nature of the standardized estimated 340B ceiling price calculation described in this final rule, HHS views the likelihood of undercharges to be low. Because WAC is typically higher than the 340B ceiling price and the estimation for new drugs finalized in this rule is based on that amount, we believe that new estimation undercharges will be minimal. Section 340B(a)(10) of the PHSA states that there is no prohibition on larger discounts being offered to covered entities. In addition, the statute is specific in addressing when a manufacturer overcharges a covered entity and it does not address refunds by covered entities if the manufacturer provides a price below the 340B ceiling price. Therefore, it will not be addressed in the final rule.

Comment: Commenters requested clarification on whether the refund policy described in this rule would apply to all overcharges identified during price restatements, and not just those that occur as sales data can be applied to new drug pricing. Commenters also requested that HHS codify a formal refund procedure in regulation and that the Affordable Care Act requires the 340B Program to develop a refund mechanism.

Response: The refund requirements as set forth in this final rule apply as it relates to new drug price estimations. Specific procedures for refunds are outside the authority of this final rule and will be addressed in future guidance. HHS is finalizing this refund requirement as proposed and continues to believe that an instance of overcharging may occur at the time of initial purchase or when subsequent ceiling price recalculations resulting from pricing data submitted to CMS occur.

Comment: Commenters requested that HHS define ''new drug'' in this rule, suggesting the use of NDC–11 or package size as criteria. Commenters suggested a clarification that a new package size is not a new drug, suggesting that new prices can be derived off known unit prices, with any subsequent refunds occurring under the existing reconciliation process. Commenters suggested a clarification that a new package size of an existing drug should not be considered a new drug for purposes of this rule and that the 340B ceiling price should use the per unit pricing data (NDC–9) from the existing package sizes already in the market.

Response: For the purposes of this final rule, a new covered outpatient drug is any drug that does not have a previous quarter AMP calculation from which a price can be derived. HHS does not believe this distinction needs to be clarified in the final rule, and additional policy on this issue may be developed if the need arises.

D. Manufacturer Civil Monetary Penalties General—§ 10.11(a)

Section 340B(d)(1)(B)(vi) of the PHSA provides for the imposition of civil monetary penalties on manufacturers that knowingly and intentionally charge a covered entity a price for a 340B drug that exceeds the ceiling price. At § 10.11(a) of the NPRM, HHS proposed that any manufacturer with a PPA that knowingly and intentionally charges a covered entity more than the 340B ceiling price, as defined in § 10.10, for a covered outpatient drug, may be subject to a civil monetary penalty not to exceed $5,000 for each instance of overcharging a covered entity. As indicated in the NPRM, pursuant to a delegation of authority, OIG will have authority to impose a CMP. The initial release of the NRPM did not define the term ''knowing and intentional,'' but based on comments received, HHS reopened the NPRM comment period (81 FR 22960, April 19, 2016) to seek comment on the definition of the knowing and intentional standard for purposes of HHS' CMP authority. HHS offered possible options on how the term should be defined. HHS understands that intent is difficult to define, therefore, input was solicited on circumstances in which the requisite intent should and should not be inferred. In particular, HHS solicited comment on the concept that manufacturers would not be considered to have the requisite intent in the following circumstances:

- The manufacturer made an inadvertent, unintentional, or unrecognized error in calculating the ceiling price;
- A manufacturer acted on a reasonable interpretation of agency guidance; or
- When a manufacturer has established alternative allocation procedures where there is an inadequate

supply of product to meet market demand, as long as covered entities are able to purchase on the same terms as all other similarly situated non-340B covered entities.

HHS received numerous comments recommending the terms knowingly and intentionally be further defined in the final rule. Commenters generally supported the listed examples of circumstances where the requisite intent is not demonstrated, and a number of commenters suggested additional examples. Commenters also raised concern over ensuring the terms knowingly and intentionally are not overly prescriptive such that they limit the use of a CMP. In the final rule, HHS sought balance between a clear and enforceable definition and the need to approach each instance of an overcharge with a full view of the surrounding circumstances. Given these two goals, HHS is finalizing the rule as proposed and has provided additional examples of conduct that would not be considered to meet the threshold of ''knowing and intentional'' action in this supplementary information section in response to comments. In addition, as a general principle, HHS will defer to OIG to determine whether a given situation constitutes a 'knowing and intentional' 340B drug overcharge based on the specific case being investigated. HHS believes this will provide the flexibility necessary to evaluate an instance of overcharging on a case-by-case basis. Below is a summary of the comments received, and HHS' responses.

Comment: Commenters provided additional examples to be considered as not meeting the knowing and intentional threshold, such as periods of estimations for new drugs.

Response: HHS agrees that the period of time for which a manufacturer is estimating a 340B ceiling price for new drugs as set forth in this final rule may not meet the knowingly and intentionally standard, as long as the manufacturer also ensures that the covered entities are refunded according to § 10.10(c). However, if a manufacturer does not offer to refund a covered entity per § 10.10(c) of the final rule, that may constitute a knowing and intentional overcharge. The final rule has been modified accordingly. Examples of circumstances where HHS would assume that a manufacturer did not ''knowingly and intentionally'' overcharge a covered entity are:

- The manufacturer made an isolated inadvertent, unintentional, or unrecognized error in calculating the 340B ceiling price;
- The manufacturer sells a new covered outpatient drug during the period the manufacturer is estimating a price based on this final rule, as long as the manufacturer offers refunds of any overcharges to covered entities within 120 days of determining an overcharge occurred during the estimation period;
- When a covered entity did not initially identify the purchase to the manufacturer as 340B-eligible at the time of purchase; or
- When a covered entity chooses to order non-340B priced drugs and the order is not due to a manufacturer's refusal to sell or make drugs available at the 340B price.

We note that these examples are not exhaustive, and are intended to provide an indication of some types of actions that would not be considered ''knowing and intentional'' overcharges. In the NPRM, the last two examples above were included in the text of the regulation defining instances of overcharging. Upon consideration of public comments, HHS believes that the last two examples above should be construed as particular circumstances under which an instance of overcharging did not occur as opposed to examples of what would constitute an instance of overcharging. As a result, HHS is not including these two examples in the final regulatory text defining an instance of overcharging, but rather providing them here as examples of instances where overcharging did not occur. As a general principle, HHS will defer to OIG to determine whether a given situation constitutes a 'knowing and intentional' overcharge based on the specific case being investigated.

Comment: Some commenters suggested that HHS adopt the definition of ''knowingly'' from the HHS OIG CMP regulations. Under these regulations, the term ''knowingly'' is defined as ''a person, with respect to information, has actual knowledge of information, acts in deliberate ignorance of the truth or falsity of the information, or acts in reckless disregard of the truth or falsity of the information, and that no proof of specific intent to defraud is required'' (42 CFR 1003.102 (e)). A few commenters noted that under the canons of statutory construction, agencies must assume Congress intended each word or phrase to have a distinct meaning.

Response: HHS does not believe it is appropriate to incorporate additional language over and above the statutory language ''knowingly and intentionally'' that would limit OIG further in applying this penalty. Each factual case is different and will be evaluated separately to determine if it may warrant a penalty as set forth in this final rule. After consideration of the comments received, HHS has decided not to define these terms and to allow OIG the necessary flexibility to evaluate each instance of overcharge on a case-by-case basis.

Comment: Commenters offered specific definitions of the term ''intentionally.'' Several commenters requested that ''intentionally'' be defined as ''not due to a mathematical miscalculation, clerical oversight, or similar inadvertent error.'' A few commenters requested that the term ''intentionally'' be defined as ''consciously committing an act or omission that results in an overcharge.'' Commenters requested that, when defining the terms ''knowingly'' and ''intentionally,'' HHS incorporate definitions such as ''actual knowledge by the manufacturer, its employees, or its agents of the instance of overcharge'' or ''acting consciously and with awareness of the acts leading to the instance of overcharge.'' Commenters interpreted the statute to say that it must be ''knowing and intentional'' on the part of the manufacturer both that the amount charged exceeds the ceiling price and that the entity charged is in fact a covered entity.

Response: HHS appreciates commenters' proposed definitions of ''knowingly and intentionally,'' and also acknowledges commenters' concerns about HHS' proposed definitions. HHS agrees that in cases where a manufacturer established that the overcharge in question was as a result of an isolated act of simple negligence or inadvertent math error, then the penalty would not typically apply. However, the facts and circumstances of each case would need to be taken into account. For example, if a manufacturer inadvertently developed an unreliable process that resulted in negligent errors, but later there is knowledge of such systematic failures that results in errors in the 340B ceiling price calculation that causes overcharges, this could be sufficient to meet a knowingly and intentionally standard. After consideration of the comments received, HHS has decided not to define these terms and to allow OIG the necessary flexibility to evaluate each instance of overcharge on a case-by-case basis.

Comment: Several commenters believed that the statute's requirement that conduct must be both ''knowing'' and ''intentional'' to impose CMPs sets up a specific and demanding standard and some covered entities were concerned that the proposed definitions set the bar so high as to have little practical value in ensuring that they receive appropriate prices under the

340B Program. They stated that the intent standard is contrary to Congress' intent to give HHS a meaningful enforcement tool, and it will not deter manufacturers from overcharging under the 340B statute. Further, they noted that the Supreme Court wrote that through CMP provisions ''Congress thus opted to strengthen and formalize HHS' enforcement authority'' (*Astra USA* v. *Santa Clara County,* 563 U.S. 110, 121–22 (2011)). Other commenters were concerned that the proposed definitions would not amount to the heightened threshold for intent outlined in the statute, meaning that the proposed definitions would capture lesser forms of misconduct than Congress had intended.

Response: While HHS agrees that the use of the terms knowingly and intentionally as set forth in the statute set a high standard for imposing penalties, HHS believes it will serve as an enforcement tool to ensure manufacturers are charging covered entities at or below the 340B ceiling price. HHS appreciates commenters' proposed definitions of ''knowingly and intentionally,'' and also acknowledges commenters' concerns about HHS' proposed definitions. HHS has decided not to define these terms and to allow OIG the necessary flexibility to evaluate each instance of overcharge on a case-by-case basis.

Comment: HHS provided several possible definitions for knowing and intentional when it reopened the comment period: (1) Actual knowledge by the manufacturer, its employees, or its agents of the instance of overcharge; (2) willful or purposeful acts by, or on behalf of, the manufacturer that lead to the instance of overcharge; (3) acting consciously and with awareness of the acts leading to the instance of overcharge; and/or (4) acting with a conscious desire or purpose to cause an overcharge or acting in a way practically certain to result in an overcharge. HHS received a number of comments on the proposed definitions.

Response: HHS has decided not to define these terms and to allow OIG the necessary flexibility to evaluate each instance of overcharge on a case-by-case basis.

Comment: With respect to the language in the notice of reopening of comment period (81 FR 22960, April 6, 2016) that ''manufacturers do not need to intend specifically to violate the 340B statute; but rather to have knowingly and intentionally overcharged the 340B covered entity,'' several commenters expressed concern that this is inconsistent with the statutory text. These commenters argued that in order to be subject to CMPs, the manufacturer must specifically intend to violate the 340B statute, not solely intend to charge a price that is higher than the 340B ceiling price.

Response: HHS agrees that CMPs will be applied to a manufacturer that knowingly and intentionally overcharges a covered entity. The specific intent to violate the 340B statute is not necessarily required to be shown to warrant an application of the penalty provision.

Comment: Commenters expressed concern that any further definition of the terms ''knowing'' and ''intentionally'' will constrain HHS' ability to judge whether a CMP is appropriate in a given instance. If HHS determines that further definition is necessary, they suggested using an exclusionary approach, stating specific actions that do not rise to the level of requisite intent, rather than an approach that names only specific actions that will be considered ''knowing and intentional'' in this context. Commenters generally supported the listed examples of circumstances where the requisite intent is not demonstrated and requested that the examples be explicitly characterized as non-exhaustive. Several commenters suggested adding a catch-all provision to the list of examples, such as ''other situations in which it is reasonable not to infer that a manufacturer acted 'knowingly and intentionally,' '' or ''any other situation not presenting circumstances of a deliberate effort to disobey the law with regard to the 340B program.''

Response: HHS agrees with the commenter's approach. Therefore, instead of defining these terms in an inclusive manner, HHS has chosen to provide OIG the flexibility to determine what constitutes ''knowingly'' and ''intentionally'' overcharging a covered entity in a particular instance. In addition, HHS provides examples above regarding circumstances that would not meet the threshold of knowingly and intentionally overcharging a covered entity.

Comment: With respect to the proposed example ''the manufacturer made an inadvertent, unintentional, or unrecognized error in calculating the ceiling price,'' one commenter suggested including an error ''identifying the eligibility of an entity to receive the 340B discount.''

Response: HHS did not include the suggestion to include an error in ''identifying the eligibility of an entity to receive the 340B discount'' in the final rule to retain flexibility that the penalty be applied only where appropriate. However, it should be noted that 340B covered entities are listed on the 340B public database, and those listed are entitled to the 340B ceiling price.

Comment: Regarding the proposed example ''a manufacturer acted on a reasonable interpretation of agency guidance,'' a commenter was concerned that the example was overly broad, since manufacturers may decide what is reasonable, and this, therefore, may create a loophole for manufacturers to avoid CMPs. They recommended, at a minimum, clarifying that this is an objective reasonableness standard, as determined by HHS and/or OIG. Several other commenters suggested adding exceptions for reasonable interpretations of laws, regulations, and the pharmaceutical pricing agreement. Further, one commenter stated that in circumstances where the statute and agency guidance conflict, it is reasonable for the manufacturer to adopt practices consistent with the statute.

Response: HHS agrees that the proposed example that, ''a manufacturer acted on a reasonable interpretation of agency guidance,'' was overly broad. OIG would need to consider each circumstance of a 340B drug overcharge on a case by case basis to determine if that circumstance constitutes a ''knowing and intentional action.

Comment: With respect to the proposed example, ''when a manufacturer has established alternative allocation procedures where there is an inadequate supply of product to meet market demand, as long as covered entities are able to purchase on the same terms as all other similarly-situated providers,'' commenters were concerned that this is overly broad. They recommended that HHS only provide a safe harbor for manufacturers with valid limited distribution plans, and revise § 10.11 of the final rule to address other situations where a manufacturer fails to make 340B drugs available to covered entities to the same extent as to non-340B providers. They argued that the statute states CMPs are issued when manufacturers ''knowingly and intentionally charges a covered entity a price for purchase of a drug that exceeds the maximum available price under subsection (a)(1).'' Section 340B(a)(1) of the PHSA requires that ''the manufacturer offer each covered entity covered outpatient drugs for purchase at or below the applicable ceiling price if such a drug is made available to any other purchaser at any price.'' Therefore, if a manufacturer does not comply with the nondiscrimination provision in subsection (a)(1), this constitutes an overcharge for purposes

of the CMP provision. Other commenters recommended that HHS delete this example, because it would allow any manufacturer to develop alternative allocation procedures to disregard the ceiling price whenever demand exceeds supply.

Response: HHS agrees that the proposed example, ''when a manufacturer has established alternative allocation procedures where there is an inadequate supply of product to meet market demand, as long as covered entities are able to purchase on the same terms as all other similarly-situated providers,'' was overly broad. OIG would need to consider each circumstance of a 340B drug overcharge on a case by case basis to determine if that circumstance constitutes a ''knowing and intentional'' action.

Comment: Commenters suggested that the proposed example, ''when a manufacturer has established alternative allocation procedures where there is an inadequate supply of product to meet market demand, as long as covered entities are able to purchase on the same terms as all other similarly-situated providers,'' a manufacturer would not have the requisite intent if a covered entity chooses to purchase the manufacturer's product through a channel other than the subset of distributors through which the 340B ceiling price is available. Another commenter suggested that the example read instead, ''. . . as long as the manufacturer offers covered entities the opportunity to purchase on terms consistent with those offered to other similarly-situated entities in the same class of trade.''

Response: In general, HHS agrees that the penalty provisions typically would not be appropriate in a case where a covered entity chooses to purchase a covered outpatient drug knowing that the price charged exceeds the 340B ceiling price. However, in the case where there was sufficient evidence to conclude that this result was due to actions by the manufacturer that were knowing and intentional, a penalty may be appropriate. Although it may be reasonable to believe that such a circumstance is extremely unlikely to arise, HHS does not believe it is appropriate or necessary to exclude a possibility that may occur.

Comment: A number of commenters suggested additional examples of situations that they believe do not meet the ''knowing and intentional'' standard. Some of the examples suggested by commenters include, but are not limited to, the following:

- Instances of intentional failure to issue refunds to covered entities, because HHS has not yet established procedures for issuing refunds;
- A case where a manufacturer was not aware it was selling to a covered entity;
- A case where a distributor failed to give a covered entity a 340B price through no fault of the manufacturer;
- Situations where there is a reasonable disagreement and no established law or agency guidance or circumstances where the manufacturer acted based on reasonable assumptions in the absence of (or in the face of conflicting) guidance, provided such assumptions are consistent with the requirements and intent of section 340B of the PHSA and any implementing regulations, and a written or electronic record outlining these assumptions is maintained; and
- When a manufacturer has established a uniformly applied limited distribution system or risk evaluation and mitigation strategy (''REMS'').

Response: HHS appreciates the efforts commenters made in enumerating conduct they believed should be exempt from examples of knowingly and intentionally selling a drug above its 340B ceiling price. OIG will review these circumstances on a case-by-case basis along with the facts for each instance. Rather than try to anticipate every circumstance that might occur, HHS believes it more appropriate to retain flexibility. To the extent that manufacturers identify situations where uncertainty results in unnecessary costs, HHS will respond as such circumstances arise and may provide additional guidance in the future.

Additionally, since manufacturers are named in statute as being responsible for setting appropriate 340B ceiling prices, they must be responsible for the conduct of business partners with whom they have contracted. Nevertheless, inadvertent clerical errors, as long as they are corrected as soon as identified, would not be considered to be a ''knowing and intentional'' overcharge.

Comment: Commenters recommended including as an exemption from being considered an overcharge and meeting the knowing and intentional threshold when a manufacturer acted on credible evidence that a covered entity is engaged in diversion of 340B drugs. They stated that if a manufacturer has evidence a covered entity is improperly diverting a drug, it should be able to charge the covered entity a price above the 340B ceiling price. It is argued that this option would create a check on 340B drug diversion, since manufacturers have better and timelier access to sales data than does HHS.

Response: HHS does not believe that unilaterally overcharging a covered entity based upon suspicion of diversion is warranted under the statutory language. Manufacturers cannot condition the sale of a 340B drug at the 340B ceiling price because they have concerns or specific evidence of possible non-compliance by a covered entity. Manufacturers that suspect diversion are encouraged to work in good faith with the covered entity, conduct an audit per the current audit guidelines, or contact HHS directly.

E. Manufacturer Civil Monetary Penalties—Instance of Overcharging—§ 10.11(b)

At § 10.11(b) of the proposed rule, HHS defined an instance of overcharging for the purpose of imposing a CMP as any order for a certain covered outpatient drug, by NDC, which results in a covered entity paying more than the 340B ceiling price. An instance of overcharging is considered at the NDC level and may not be offset by other discounts provided on any other NDC or discounts provided on the same NDC on other transactions, orders, or purchases. HHS also proposed that manufacturers have an obligation to ensure that the 340B ceiling price is provided through distribution arrangements made by the manufacturer. An instance of overcharging may occur at the time of initial purchase or at subsequent ceiling price recalculations. The recalculations are due to pricing data submitted to CMS that results in a covered entity paying more than the ceiling price due to failure or refusal to refund or credit a covered entity. Finally, HHS proposed that a manufacturer's failure to provide the 340B ceiling price is not considered an instance of overcharging when a covered entity did not initially identify the purchase to the manufacturer as 340B-eligible at the time of purchase. Covered entity orders of non-340B priced drugs will not subsequently be considered an instance of overcharging unless the manufacturer refuses to sell or makes drugs available at the 340B ceiling price.

HHS received comments supporting and opposing the proposed § 10.11(b). Some commenters opposed certain components of the proposed definition, including the proposal to (1) define the term based on orders; (2) require manufacturers to ensure 340B pricing regardless of distribution arrangements; (3) prohibit offsets; (4) consider as an instance of overcharging when a manufacturer fails or refuses to provide funds at the time of initial purchases or during subsequent ceiling price

recalculation; and (5) clarify that a manufacturer's failure to provide the 340B ceiling price if a covered entity did not initially identify such purchases as 340B eligible or that covered entity orders of non-340B drugs will not be subsequently considered an instance of overcharging unless the manufacturers refuses or makes drugs available at the 340B ceiling price. These commenters claimed that HHS does not have the statutory authority to define the term as such or that such definition does not meet the ''knowingly and intentionally'' standard. At the same time, other commenters supported these components of the proposed definitions as they ensure that covered entities have access to covered outpatient drugs under the 340B Program. Specific comments are addressed below.

Comment: Commenters wrote in opposition to the definition of an instance of overcharging as any order for a covered outpatient drug, by NDC, which results in a covered entity paying more than the ceiling price. Some commenters asked HHS to define an instance of overcharging more restrictively and on a per-unit basis rather than a per-order basis. Doing so would allow OIG to impose penalty amounts commensurate with the severity of the violation.

Response: HHS has determined to finalize the definition of instance as proposed. An instance of overcharging is any order for a certain covered outpatient drug, by NDC, which results in a covered entity paying more than the 340B ceiling price, as defined in § 10.3 of this final rule, for a covered outpatient drug. Each order for an NDC will constitute a single instance, regardless of the number of units of each NDC in that order. This includes any order placed with a manufacturer or through a wholesaler, authorized distributor, or agent. A single order may contain one or more NDCs; thus a violation of this provision may constitute more than one instance depending on the number of NDCs in the order. HHS believes that changing the definition to a per-unit basis is restrictive and overly burdensome as current purchasing occurs at the 11-digit NDC versus a per-unit basis. Finalizing the rule as proposed strikes the right balance in applying the appropriate penalties.

Comment: Commenters asked HHS to clarify that the ''order'' is the single purchase order, rather than separate line items within a single purchase order. Commenters claimed that defining an instance of overcharging based on ''orders'' may be interpreted to include situations in which estimated 340B ceiling prices for new drugs were too high and the manufacturer did not issue refunds to covered entities in the time that the rule would require.

Response: Each order for an NDC will constitute a single instance, regardless of the number of units of each NDC in that order. If a covered entity orders a single bottle of a covered outpatient drug four times in a month, it would be considered four instances of overcharging. A single order may contain one or more NDCs; thus a violation of this provision may constitute more than one instance depending on the number of NDCs in the order. With regards to new drug price estimation and refunds to a covered entity, HHS addresses those requirements in § 10.10 of this final rule. If refunds in this circumstance are not offered to covered entities within 120 days of the determination by the manufacturer that an overcharge occurred, it may be considered as meeting the definition of knowingly and intentionally overcharging the covered entity and the definition of instance would apply. This is in alignment with the statute that requires manufacturers to provide covered entities the 340B ceiling price.

Comment: Some commenters suggested that an instance of overcharging be defined as each product ceiling price reported by a manufacturer to HRSA that contains a price that the manufacturer knows and intends to be in excess of the price as calculated. Other comments recommended further defining the term to add details related to the instance. For example, some recommended inclusion of the following language: all mispriced purchases within a quarter on a particular drug to a particular customer, intentionally incorrect ceiling prices reported to HRSA that actually result in overcharges to one or more registered covered entities, and incorrect treatment by a manufacturer of a registered covered entity as an organization ineligible for the 340B ceiling price. Other commenters asked HHS to include in the definition of instance of overcharging, a manufacturer's failure to offer a covered outpatient drug to a covered entity to the same extent that the drug is offered to other purchasers.

Response: HHS declines to include additional language as raised by the commenters. While the examples provided may result in a covered entity being charged above the 340B ceiling price, they relate more to defining the knowing and intentional standard, which will be determined by OIG on a case-by-case basis. HHS believes it is important to provide the necessary flexibility for OIG to determine the facts surrounding a specific case. HHS also notes that it is the actual sale of the covered outpatient drug above the 340B ceiling price by the manufacturers to the covered entity that is the subject of the overcharge per the statute.

Comment: Commenters opposed the proposed extension of the manufacturer's responsibility to ensure that covered entities have access to 340B pricing for covered outpatient drugs sold by wholesalers and distributors. They contend that manufacturers should not be responsible for the conduct of their agents, since an agent's actions are not knowing and intentional on the part of the manufacturer and since these actions are not within the manufacturers' control. A number of commenters pointed out that manufacturers may provide wholesalers and distributers the 340B pricing but covered entities may not purchase drugs at 340B pricing because wholesalers and distributers may add fees that may raise the price of drugs above the 340B ceiling price. Clarification was requested related to when actions by a wholesaler would be attributed to manufacturers when assessing CMPs, and whether a distribution fee charged by a wholesaler could cause an overcharge.

Response: Manufacturers are ultimately responsible for ensuring a covered entity receives a drug at or below the 340B ceiling price as stated in the statute and per this final rule. Manufacturers also have control over the distribution of covered outpatient drugs, including those distributed by wholesalers, distributers, and agents wherein the terms and conditions of the sales set through these distribution arrangements are set by the manufacturer via a contract agreed to and between the manufacturer and the distributors. This final rule applies solely to manufacturers, even though other third parties have a role in ensuring the covered entity receives a drug at or below the 340B ceiling price. Manufacturers must consider the wholesaler role in this process and work out issues in good faith and in normal business arrangements regarding the assurance that the covered entity is receiving the appropriate prices. Failure to ensure the covered entities are receiving the 340B ceiling prices through a third party may be grounds for the assessment of CMPs under this final rule. HHS does clarify, however, that fees charged directly by a wholesaler or other distributor are not considered part of the 340B ceiling price

and would not be considered as part of assessing an instance of an overcharge.

Comment: Commenters asked for a clarification that specialty pharmacies are not considered ''specialty distribution or wholesalers'' and thus are not required to provide 340B pricing. Other commenters claimed that the requirements set forth under this section are not consistent with the non-discrimination policy, which allows manufacturers to establish alternate allocation procedures. Commenters requested clarification that CMPs would not apply in a situation where a covered entity purchased product in the marketplace when the manufacturer was employing a distribution system compliant with HRSA's non-discrimination guidance (340B Program Notice Release No. 2011–1.1 (May 23, 2012)). Some commenters asked HHS to clarify that a refusal by the covered entity to purchase drugs through a limited distribution arrangement should not be interpreted as the manufacturer's refusal to sell or make drugs available at the 340B price for purposes of CMPs.

Response: All requirements as set forth in this final rule for offering the 340B ceiling price to covered entities apply regardless of the distribution system. If a manufacturer is using a specialty pharmacy to distribute covered outpatient drugs, it must ensure the covered entity is not overcharged if drugs are accessed through that pharmacy. As to comments suggesting that the rule is inconsistent with the current non-discrimination policy, HHS does not believe that is the case. Consistent with section 340B(a)(1) of the PHSA, manufacturers are expected to provide the same opportunity for 340B covered entities and non-340B purchasers to purchase covered outpatient drugs when such drugs are sold through limited distributors or specialty pharmacies. Manufacturers may continue to develop limited distribution procedures provided that those arrangements follow HHS established policy. HHS will take into consideration whether a manufacturer has submitted an alternate allocation plan to HHS when a manufacturer is being investigated for a possible overcharge, whether this plan is compliant with the 340B non-discrimination policy, and whether the manufacturer is following its plan.

Comment: Commenters argued that HHS is attempting to interpret and apply the ''shall offer'' provision through this rule. Some commenters claimed that CMPs do not apply to a shall offer provision until a manufacturer signs a PPA that includes that provision.

Response: Section 340B(a)(1) of the PHSA provides that a manufacturer shall offer each covered entity covered outpatient drugs for purchase at or below the applicable ceiling price if such drug is made available to any other purchaser at any price. This particular provision of section 340B(a)(1) is separate and distinct from the provision pertaining to the calculation of 340B ceiling prices. Because this final rule is applicable to the provision of section 340B(a)(1) pertaining to the calculation of the 340B ceiling price, the language in the statute regarding ''shall offer'' will not be addressed in this final rule.

Comment: Commenters asked HHS not to finalize the proposed rule provision that an instance of overcharging would be considered at the NDC level and may not be offset by other discounts provided on any other NDC or discounts provided on the same NDC on other transactions, orders, or purchases. They argue that offsetting is an industry practice and should not meet the knowing and intentional standard. Still other commenters pointed out that HHS has not developed a process for refunds and without such a standardized refund process, the use of offsets should be allowed. For these reasons, the commenters asked that HHS finalize the regulation to allow for offsets. Commenters also claimed that if finalized, HHS would make the offering of sub-ceiling prices mandatory rather than voluntary. Calculating refunds based only on restatements that lower the ceiling price, without accounting for restatements that raise the ceiling price, would transform the voluntary nature of offering sub-ceiling prices into a requirement. Other commenters favored allowing offsetting but providing covered entities a mechanism to contest the offsets.

Response: As proposed, and finalized in this rule, an instance of overcharging is considered at the 11-digit NDC level and may not be offset by other discounts provided on any other NDC or discounts provided on the same NDC on other transactions, orders, or purchases. The 340B statute is specific to ensuring each covered outpatient drug is offered at or below the 340B ceiling price. However, HHS does not intend to prevent manufacturers from using the industry's practice of netting overcharges and undercharges, or from restating ceiling prices based on pricing data submitted to CMS, to the extent that there is agreement between the manufacturer and covered entity.

In regards to comments based on the refund process, HHS has finalized that an instance of an overcharge may occur at the time of initial purchase or when subsequent ceiling price recalculations occur and the manufacturer refuses to refund or issue a credit to a covered entity. HHS has clarified in the final rule that this would include refusal to refund covered entities according to § 10.10(c) of the final rule with regards to new drug price estimation and would include refusal to refund a covered entity after restatements to CMS. If a covered entity is not refunded when there is an overcharge, the covered entity, in essence paid above the 340B ceiling price. While HHS has finalized in this rule the requirement to refund if there is an overcharge, the specific refund procedures will be addressed under separate guidance. Until there is final guidance in place regarding refund procedures, manufacturers and covered entities should work in good faith and refund in a reasonable manner that is documented by the parties involved.

Regarding the statement that not allowing offsets would force manufacturers to sell below 340B ceiling prices, the statute is specific in addressing when a manufacturer overcharges a covered entity and it does not address refunds by covered entities if the manufacturer provides a price below the 340B ceiling price. Therefore, it will not be addressed in the final rule.

Comment: Some commenters asked HHS not to finalize the rule as proposed related to penalizing a manufacturer for failure or refusal to refund or credit a covered entity. They pointed out that HHS has not developed a mechanism to provide such subsequent price recalculations and has not established or operationalized a mechanism to retroactively revise 340B pricing based on revised Medicaid metrics. Other commenters stated that finalizing the rule is premature since HHS has not developed a process for credits and refunds.

Response: HHS has finalized that an instance of an overcharge may occur at the time of initial purchase or when subsequent ceiling price recalculations occur and the manufacturer refuses to refund or issue a credit to a covered entity. This would include refusal to refund covered entities according to § 10.10(c) of the final rule with regards to new drug price estimation and would include refusal to refund a covered entity after restatements to CMS. If a covered entity is not refunded when there is an overcharge, the covered entity, in essence paid above the 340B ceiling price. The final rule requires a refund if there is an overcharge and specific refund procedures will be addressed under separate guidance. HHS does not believe that the requirements of this rule are dependent

on the separate issue of how to operationalize a refund process. Until there is final guidance in place regarding the refund procedures, manufacturers and covered entities should work in good faith and refund in a reasonable manner that is documented by the parties involved.

Comment: Some commenters supported the rule as proposed but asked HHS to allow covered entities time to request a reclassification of prior purchases as 340B eligible. They asked that HHS finalize the rule to require manufacturers to honor a covered entity's request to reclassify a purchase from non-340B to 340B and to issue a corresponding refund if a covered entity requests such a reclassification within 365 days of purchase.

Response: HHS continues to maintain the decision that a manufacturer's failure to provide the 340B ceiling is not considered an overcharge if the covered entity did not initially identify the purchase to the manufacturer as 340B eligible at the time of purchase. HHS does not authorize covered entities to reclassify a purchase as 340B eligible after the fact. Therefore, HHS has removed this example from the final regulation and instead includes it as an example of what would not be considered an instance of overcharging in the preamble to this rule. Covered entities participating in the 340B Program are responsible for requesting 340B pricing at the time of the original purchase. If a covered entity wishes to reclassify a previous purchase as 340B, covered entities should first notify manufacturers and ensure all processes are fully transparent with a clear audit trail that reflects the actual timing and facts underlying a transaction. The covered entity retains responsibility for ensuring full compliance and integrity of its use of the 340B Program.

Comment: Commenters supported the proposal that it could be considered an instance of overcharging when a manufacturer's documented refusal to sell or make drugs available at the 340B price results in the covered entity purchasing at the non-340B price. However, some commenters asked HHS to clarify the term ''documented refusal'' mentioned in the preamble. They suggested that the following examples not constitute a documented refusal:

- Communications between a manufacturer (or a wholesaler) and a covered entity relating to verifying eligibility for 340B prices prior to a sale, or
- A manufacturer's failure to provide the 340B ceiling price to a covered entity that has violated the prohibition against diversion or duplicate discounting.

Response: Covered entity orders of non-340B priced drugs will not subsequently be considered an instance of overcharging unless the manufacturer's documented refusal to sell or make drugs available at the 340B price resulted in the covered entity purchasing at the non-340B price. When a manufacturer's documented refusal to sell or make drugs available at the 340B ceiling price results in the covered entity purchasing at the non-340B price, a manufacturer's sale at the non-340B price could be considered an instance of overcharging. An example of ''documented refusal'' would include any type of manufacturers' written communication related to reasons a manufacturer is not providing 340B ceiling prices to either a single covered entity or group of covered entities. HHS does not agree that a manufacturer could consider not selling a 340B drug at the 340B ceiling price to a covered entity based on possible non-compliance with program requirements. Regarding verifying the eligibility of a covered entity, the 340B public database lists all covered entities eligible to purchase 340B drugs in any given quarter. The 340B public database should be used by all stakeholders to determine and verify covered entity eligibility. In addition to the example provided above as ''documented refusal,'' OIG would also review information related to such a circumstance on a case-by-case basis to determine if a manufacturer has overcharged a covered entity and whether the threshold is met to apply CMPs. HHS notes that we are removing this specific example from the final regulation and include it as an example of what would not be considered an instance of overcharging in the preamble to this rule.

Comment: Some commenters requested that HHS not require that an act be ''intentional'' when imposing CMPs and that the penalty be higher than $5,000.

Response: Section 340B(d)(1)(B)(vi) of the PHSA provides for the imposition of civil monetary penalties on manufacturers that knowingly and intentionally charge a covered entity a price for purchase of a drug that exceeds the 340B ceiling price. Additionally, section 340B(d)(1)(B)(vi)(II) of the PHSA states that CMPs ''shall not exceed $5,000 for each instance of overcharging.'' Therefore, HHS has no authority to modify the standard of intent, and any CMPs assessed will be done in accordance with the amount specified in the 340B statute, as adjusted annually for inflation pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (section 701 of Pub. L. 114–74).

Comment: A few commenters stated that when imposing CMPs, certain documentation should be required to establish that there was a ''knowing and intentional'' overcharge. They suggested that evidence should include documentation that the manufacturer received a request for the ceiling price by the covered entity, and either refused in writing to provide the ceiling price, or failed to execute a ceiling price transaction within a specified period of time.

Response: The OIG will determine, upon review of the case, the appropriate documentation and other information that may be required to determine if a CMP should be applied.

Comment: Commenters requested that the rule specify that HHS should not attempt to recover any penalties until at least 60 days after the end of any appeal or judicial review. It was also requested that, should a party seek data in relation to a CMP proceeding from a third party, such as a wholesaler or software vendor, the party seeking data may compensate the third party for their assistance, and that the third party may require that compensation. Commenters also recommended that the rule provide for confidentiality requirements in CMP proceedings, in order to ensure the confidentiality of 340B pricing.

Response: HHS understands the importance of maintaining the confidentiality of 340B ceiling price data and will handle such data accordingly. More broadly, the pertinent procedures outlined in 42 CFR parts 1003 and 1005 will be followed in matters involving the imposition of CMPs and any appeals therefrom.

Comment: Several commenters suggested that the funds collected from CMPs should be directed to OIG to support the enforcement of CMPs, to the HRSA Office of Pharmacy Affairs, and for HHS to create a 340B ceiling price database.

Response: While HHS appreciates these comments, they are beyond the statutory authority of the 340B Program and this final rule.

Comment: Several commenters supported HHS delegating the authority to levy CMPs to OIG, and recommended that the delegation of authority to OIG be explicitly stated in the regulation, rather than mentioned in the preamble. Additionally, several commenters were also concerned that at proposed § 10.11(a), in the sentence ''This penalty will be imposed pursuant to the procedures at 42 CFR part 1003 and

1005'' the term ''procedures'' may be read to not encompass definitions and standards for CMPs. Therefore, they suggested modifying the sentence to state, ''Pursuant to a delegation of authority, the HHS Office of Inspector General (OIG) will have the authority to bring CMP actions utilizing the definitions, standards, and procedures applied to civil monetary penalties under 42 CFR parts 1003 and 1005.'' It was also suggested to add a definition of ''knowingly and intentionally'' to section 1003.101 of the OIG regulations.

Response: HHS does not believe it necessary to add the delegation of authority to OIG in the regulatory text. HHS believes that pursuant to a separate delegation of authority, OIG has the authority to handle CMP actions utilizing the definitions, standards, and procedures applied to civil monetary penalties under 42 CFR parts 1003 and 1005, as applicable. Consistent with the proposed rule, we have finalized the regulatory text indicating that CMPs will be imposed pursuant to the procedures contained at 42 CFR part 1003. No further rulemaking is required to apply the procedures at 42 CFR part 1003 to the imposition of CMPs. HHS will monitor activities relating to the evaluation and pursuit of CMPs and, if necessary, will consider issuing additional guidance about procedures applicable to such actions.

Comment: A few commenters were concerned about the decision to delegate CMP actions to OIG. They stated that HHS has not identified a specific delegation, and that 42 CFR parts 1003 and 1005 only provide for the imposition of CMPs under specific statutory authorities, which do not include the 340B statute's CMP provisions. They argued that unless OIG amends their regulations to apply them to a 340B proceeding, HHS will need to develop, take comments on, and ultimately finalize a new proposal setting out procedures for seeking and imposing CMPs against manufacturers. A few commenters noted that some portions of 42 CFR parts 1003 and 1005 are inapplicable in a 340B context.

Response: As noted above, a delegation of authority to OIG for a CMP from the Secretary of HHS is sufficient. HHS does not perceive there to be any conflict between the procedural aspects of 42 CFR part 1003 and the imposition of CMPs. HHS notes that 42 CFR part 1005 applies to appeals of exclusions and civil monetary penalties and assessments and would not be directly relevant to the initial imposition of a CMP. Accordingly, HHS finalized the regulatory text indicating that CMPs will be imposed pursuant to the applicable procedures contained at 42 CFR part 1003. No further rulemaking is required to apply the procedures at 42 CFR part 1003 to the imposition of CMPs. HHS will monitor activities relating to the evaluation and pursuit of CMPs and, if necessary, will consider issuing additional guidance about procedures applicable to such actions.

III. Regulatory Impact Analysis

HHS has examined the effects of this rule as required by Executive Order 12866 on Regulatory Planning and Review (September 30, 1993), Executive Order 13563 on Improving Regulation and Regulatory Review (January 8, 2011), the Regulatory Flexibility Act (September 19, 1980, Pub. L. 96–354), the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4), and Executive Order 13132 on Federalism (August 4, 1999).

Executive Orders 12866 and 13563

Executive Orders 12866 and 13563 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 is supplemental to and reaffirms the principles, structures, and definitions governing regulatory review as established in Executive Order 12866, emphasizing the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. Section 3(f) of Executive Order 12866 defines a ''significant regulatory action'' as an action that is likely to result in a rule: (1) Having an annual effect on the economy of $100 million or more in any 1 year, or adversely and materially affecting a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities (also referred to as ''economically significant''); (2) creating a serious inconsistency or otherwise interfering with an action taken or planned by another agency; (3) materially altering the budgetary impacts of entitlement grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) raising novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. A regulatory impact analysis (RIA) must be prepared for major rules with economically significant effects ($100 million or more in any 1 year), and a ''significant'' regulatory action is subject to review by the Office of Management and Budget (OMB).

This final rule will not have economic impacts of $100 million or more in any 1 year, and, therefore, has not been designated an ''economically significant'' rule under section 3(f)(1) of Executive Order 12866. The 340B Program as a whole creates significant savings for entities purchasing drugs through the program, with total savings estimated to be $6 billion in CY 2015.[1] However, this final rule would not significantly impact the Program. This final rule codifies current policies, some of which have been modified, regarding calculation of the 340B ceiling price and manufacturer civil monetary penalties. HHS does not anticipate that the imposition of civil monetary penalties would result in significant economic impact.

The 340B Program uses information that already must be reported under Medicaid to calculate the statutorily defined 340B ceiling price as required by this final rule. Because the components of the 340B ceiling price are already calculated by the manufacturers under the MDRP and reported to CMS, HHS does not believe this portion of the final rule would have an impact on manufacturers. The impact on manufacturers would also be limited with respect to calculation of the 340B ceiling price as defined in this final rule due to the fact that manufacturers regularly calculate the 340B ceiling price and have been doing so since the program's inception.

Separate from calculation of the 340B ceiling price, manufacturers are required to ensure they do not overcharge covered entities, and a civil monetary penalty could result from overcharging if it met the standards in this final rule. HHS envisions using these penalties in rare situations. Since the Program's inception, issues related to overcharges have been resolved between a manufacturer and a covered entity and any issues have generally been due to technical errors in the calculation. For the penalties to be used as defined in the statute and in this rule, the manufacturer overcharge would have to be the result of a knowing and intentional act. Based on anecdotal

[1] In CY 2015, 340B covered entities spent approximately $12 billion on the total purchases of 340B drugs under the 340B Program. This data was obtained from the 340B Prime Vendor Program. This amount represents 2.6 percent of the overall prescription drug market. Assuming covered entities pay 25 to 50 percent less than non-340B prices, HHS calculated the estimated total savings in CY 2015 to be approximately $6 billion.

information received from covered entities, HHS anticipates that this would occur very rarely if at all.

This rulemaking also proposes that a manufacturer charge a $0.01 per unit of measure for a drug with a 340B ceiling price below $0.01. A small number of manufacturers have informed HRSA over the last several years that they charge more than $0.01 for a drug with a ceiling price below $0.01. However, this is a long-standing HRSA policy, and HRSA believes the majority of manufacturers currently follow the practice of charging a $0.01. Therefore, this portion of the regulation would not result in a significant impact. This final regulation would allow HRSA to enforce the policy in a manner that would require the manufacturer to charge a $0.01, and it is likely that manufacturers would charge $0.01 in order to avoid the imposition of a civil monetary penalty for overcharging a covered entity. HRSA believes manufacturers that currently do not comply will come into compliance, which will result in the covered entity paying less for these drugs. There will be a cost transfer from the covered entity to the manufacturer.

HHS recognizes that certain administrative costs would be incurred for compliance with this final rule. HHS does not collect data related to such administrative costs, and compliance costs are expected to vary significantly. HHS believes it is reasonable to assume that manufacturers would use one-half to one full-time compliance officer to ensure compliance with the requirements in this final rule. According to the Bureau of Labor Statistics, the mean annual wage for a pharmaceutical compliance officer (NAICS 325400, occupation code 13–1041) is $80,170 in 2015. Inclusion of benefits and overhead (resulting in a total labor cost of 1.5 times mean annual wage) yields a total annual cost of $120,255 for one compliance officer. Thus, the estimated annual cost for labor across all 600 manufacturers is between $36,067,500 and $72,153,000.

We received the following comments on the anticipated impacts on drug manufacturers:

Comment: Regarding the proposed rule's regulatory impact analysis, some commenters disagree that the proposed rule is ''not likely to have an economic impact of $100 million or more in any 1 year'' and objects to its failure to designate the proposed rule as economically significant. They argue that resources that would be required to comply with the obligations of this proposed rule would extend beyond a compliance officer and would include the re-writing and implementation of new policies and procedures, and the training of staff.

Response: The proposed rule and the policies finalized herein codify several current policies, some of which have been modified, regarding the calculation of the 340B ceiling price and introduce manufacturer civil monetary penalties. HHS reviewed the comments submitted in response to the NPRM, and has attempted to minimize burden for both manufacturers and covered entities in its formulation of the final rule, specifically regarding the policy of estimating new drug prices (see § 10.10(c)). With the modification made in this final rule, we believe that stakeholders' administrative burdens' with respect to this policy will be minimal. Through the comments that HHS received during both comment periods on the estimation of new drug prices, commenters expressed support for this approach and maintained that it created an even playing field across all stakeholders as the calculation of the 340B ceiling price is easily verifiable by covered entities and reduces administrative burden. HHS also understands that based on the comments received, the methodology for calculating new drugs as set forth in this final rule is already taking place in the marketplace and will thus not create any additional burden.

Manufacturers have always been required to ensure that they do not overcharge covered entities per the section 340B(d)(1). This final rule incorporates a penalty for knowingly and intentionally overcharging covered entities, as discussed in subsequent sections of this final rule (see § 10.11(a)). Under current practice, HHS encourages manufacturers and covered entities to work in good faith to resolve any pricing discrepancies. HHS anticipates this practice to continue and anticipates that the imposition of penalties to occur only on a rare basis. The remaining policies in the proposed rule and finalized in this rule reflect current 340B Program policy and should not result in significant economic impacts.

Comment: Commenters note that manufacturers would have to build into their systems the capacity to identify all sales transactions with covered entities at the originally charged price, as well as any recalculated price, for up to three full years after the original transaction. They explain that these prices along with issuing the actual refunds to the covered entities could easily exceed $100 million per year.

Response: We note that the 340B Program uses data that manufacturers already report to CMS under the MDRP (AMP, URA) to calculate the statutorily defined 340B ceiling price. As these components of the 340B ceiling price are already calculated by manufacturers under the MDRP, HHS does not believe that this will cause additional burden on manufacturers.

The Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) (RFA) and the Small Business Regulatory Enforcement and Fairness Act of 1996, which amended the RFA, require HHS to analyze options for regulatory relief of small businesses. If a rule has a significant economic effect on a substantial number of small entities, the Secretary must specifically consider the economic effect of the rule on small entities and analyze regulatory options that could lessen the impact of the rule. HHS will use an RFA threshold of at least a three percent impact on at least five percent of small entities.

The final rule would affect drug manufacturers (North American Industry Classification System code 325412: Pharmaceutical Preparation Manufacturing). The small business size standard for drug manufacturers is 750 employees. Approximately 600 drug manufacturers participate in the 340B Program. While it is possible to estimate the impact of this final rule on the industry as a whole, the data necessary to project changes for specific manufacturers or groups of manufacturers is not available, as HRSA does not collect the information necessary to assess the size of an individual manufacturer that participates in the 340B Program.

This final rule clarifies statutory requirements for manufacturers, including small manufacturers, and codifies current ceiling price calculation policies in regulation. HHS is unaware of small manufacturers who do not follow the ceiling price policies finalized by this regulatory action. The specific elements required as part of the calculation of the ceiling price are elements that manufacturers are already required to utilize as part of their participation in the 340B Program. HHS expects that these elements would continue to be available. Therefore, calculation of the ceiling price would not result in an economic impact or create additional administrative burden on these businesses.

HHS has determined, and the Secretary certifies that this final rule will not have a significant impact on the operations of a substantial number of small manufacturers; therefore, we are not preparing an analysis of impact for the purposes of the RFA. HHS, estimates

that the economic impact on small manufacturers will be minimal and less than three percent.

Unfunded Mandates Reform Act

Section 202(a) of the Unfunded Mandates Reform Act of 1995 requires that agencies prepare a written statement, which includes an assessment of anticipated costs and benefits, before issuing ''any rule that includes any Federal mandate that may result in the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector, of $100 million or more (adjusted annually for inflation) in any one year.'' In 2015, that threshold level is approximately $144 million. HHS does not expect this final rule to exceed the threshold.

Executive Order 13132—Federalism

HHS has reviewed this final rule in accordance with Executive Order 13132 regarding federalism, and has determined that it does not have ''federalism implications.'' This final rule would not ''have substantial direct effects on the States, or on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.'' The provisions in this final rule would not adversely affect the following family elements: Family safety, family stability, marital commitment; parental rights in the education, nurture, and supervision of their children; family functioning, disposable income or poverty; or the behavior and personal responsibility of youth, as determined under Section 654(c) of the Treasury and General Government Appropriations Act of 1999.

Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that OMB approve all collections of information by a Federal agency from the public before they can be implemented. This final rule is projected to have no impact on current reporting and recordkeeping burden for manufacturers under the 340B Program. Changes finalized in this rulemaking would result in no new reporting burdens.

List of Subjects in 42 CFR Part 10

Biologics, Business and industry, Diseases, Drugs, Health, Health care, Health facilities, Hospitals, 340B Drug Pricing Program.

Dated: October 3, 2016.

James Macrae,

Acting Administrator, Health Resources and Services Administration.

Sylvia M. Burwell,

Secretary, Department of Health and Human Services.

■ For the reasons set forth in the preamble, the Department of Health and Human Services revises 42 CFR part 10 to read as follows:

PART 10—340B DRUG PRICING PROGRAM

Subpart A—General Provisions

Sec.
10.1 Purpose.
10.2 Summary of 340B Drug Pricing Program.
10.3 Definitions.

Subpart B—340B Ceiling Price

10.10 Ceiling price for a covered outpatient drug.
10.11 Manufacturer civil monetary penalties.

Authority: Sec. 340B of the Public Health Service Act (42 U.S.C. 256b) (PHSA), as amended.

Subpart A—General Provisions

§ 10.1 Purpose.

This part implements section 340B of the Public Health Service Act (PHSA) ''Limitation on Prices of Drugs Purchased by Covered Entities.''

§ 10.2 Summary of 340B Drug Pricing Program.

Section 340B of the PHSA instructs the Secretary of Health and Human Services to enter into agreements with manufacturers of covered outpatient drugs under which the amount to be paid to manufacturers by certain statutorily-defined covered entities does not exceed the 340B ceiling price.

§ 10.3 Definitions.

For the purposes of this part, the following definitions apply:

Average Manufacturer Price (AMP) has the meaning set forth in section 1927(k)(1) of the Social Security Act, as implemented in 42 CFR 447.504.

Ceiling price means the maximum statutory price established under section 340B(a)(1) of the PHSA and this section.

CMS is the Centers for Medicare & Medicaid Services.

Covered entity means an entity that is listed within section 340B(a)(4) of the PHSA, meets the requirements under section 340B(a)(5) of the PHSA, and is registered and listed in the 340B database.

Covered outpatient drug has the meaning set forth in section 1927(k) of the Social Security Act.

Manufacturer has the meaning set forth in section 1927(k) of the Social Security Act, as implemented in 42 CFR 447.502.

National Drug Code (NDC) has the meaning set forth in 42 CFR 447.502.

Pharmaceutical Pricing Agreement (PPA) means an agreement described in section 340B(a)(1) of the PHSA.

Quarter refers to a calendar quarter unless otherwise specified.

Secretary means the Secretary of the Department of Health and Human Services and any other officer of employee of the Department of Health and Human Services to whom the authority involved has been delegated.

Subpart B—340B Ceiling Price

§ 10.10 Ceiling price for a covered outpatient drug.

A manufacturer is required to calculate the 340B ceiling price for each covered outpatient drug, by National Drug Code (NDC) on a quarterly basis.

(a) *Calculation of 340B ceiling price.* The 340B ceiling price for a covered outpatient drug is equal to the Average Manufacturer Price (AMP) from the preceding calendar quarter for the smallest unit of measure minus the Unit Rebate Amount (URA) and will be calculated using six decimal places. HRSA will publish the 340B ceiling price rounded to two decimal places.

(b) *Exception.* When the ceiling price calculation in paragraph (a) of this section results in an amount less than $0.01 the ceiling price will be $0.01.

(c) *New drug price estimation.* A manufacturer must estimate the 340B ceiling price for a new covered outpatient drug as of the date the drug is first available for sale. That estimation should be calculated as wholesale acquisition cost minus the appropriate rebate percentage until an AMP is available, which should occur no later than the 4th quarter that the drug is available for sale. Manufacturers are required to calculate the actual 340B ceiling price as described in paragraph (a) of this section and offer to refund or credit the covered entity the difference between the estimated 340B ceiling price and the actual 340B ceiling price within 120 days of the determination by the manufacturer that an overcharge occurred.

§ 10.11 Manufacturer civil monetary penalties.

(a) *General.* Any manufacturer with a pharmaceutical pricing agreement that knowingly and intentionally charges a covered entity more than the ceiling price, as defined in § 10.10, for a covered outpatient drug, may be subject

to a civil monetary penalty not to exceed $5,000 for each instance of overcharging, as defined in paragraph (b) of this section. This penalty will be imposed pursuant to the applicable procedures at 42 CFR part 1003. Any civil monetary penalty assessed will be in addition to repayment for an instance of overcharging as required by section 340B(d)(1)(B)(ii) of the PHSA.

(b) *Instance of overcharging.* An instance of overcharging is any order for a covered outpatient drug, by NDC, which results in a covered entity paying more than the ceiling price, as defined in § 10.10, for that covered outpatient drug.

(1) Each order for an NDC will constitute a single instance, regardless of the number of units of each NDC ordered. This includes any order placed directly with a manufacturer or through a wholesaler, authorized distributor, or agent.

(2) Manufacturers have an obligation to ensure that the 340B discount is provided through distribution arrangements made by the manufacturer.

(3) An instance of overcharging is considered at the NDC level and may not be offset by other discounts provided on any other NDC or discounts provided on the same NDC on other transactions, orders, or purchases.

(4) An instance of overcharging may occur at the time of initial purchase or when subsequent ceiling price recalculations due to pricing data submitted to CMS or new drug price estimations as defined in § 10.10(c) result in a covered entity paying more than the ceiling price due to failure or refusal to refund or credit a covered entity.

[FR Doc. 2016–31935 Filed 1–4–17; 8:45 am]

BILLING CODE 4165–15–P

Proposed Rules

Federal Register
Vol. 82, No. 3
Thursday, January 5, 2017

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF AGRICULTURE

Food and Nutrition Service

7 CFR Part 250

RIN 0584–AE38

Revisions and Clarifications in Requirements for the Processing of Donated Foods

AGENCY: Food and Nutrition Service (FNS), USDA.

ACTION: Proposed rule.

SUMMARY: This rule proposes to revise and clarify requirements for the processing of donated foods in order to: Incorporate successful processing options tested in demonstration projects, ensure accountability for donated foods provided for processing, and increase program efficiency. The rule would require multi-State processors to enter into National Processing Agreements to process donated foods into end products, permit processors to substitute commercially purchased beef and pork of U.S. origin and of equal or better quality for donated beef and pork, and would increase oversight of inventories of donated foods at processors. The rule also revises regulatory provisions in plain language, to make them easier to read and understand.

DATES: To be assured of consideration, comments must be received on or before March 6, 2017.

ADDRESSES: The Food and Nutrition Service invites interested persons to submit comments on this proposed rule. You may submit comments, identified by RIN number 0584–AE38, by any of the following methods:

Federal eRulemaking Portal: Go to *http://www.regulations.gov.* Follow the online instructions for submitting comments.

Email: Send comments to *ProcessingRuleComments@fns.usda.gov.* Include RIN number 0584–AE38 in the subject line of the message.

Mail: Send comments to Kiley Larson, Program Analyst, Policy Branch, Food Distribution Division, Food and Nutrition Service, U.S. Department of Agriculture, Room 500, 3101 Park Center Drive, Alexandria, Virginia 22302–1594.

Hand Delivery or Courier: Deliver comments to the above address.

FOR FURTHER INFORMATION CONTACT: Kiley Larson or Erica Antonson at the above address or telephone (703) 305–2680.

SUPPLEMENTARY INFORMATION:

I. Background

The Department of Agriculture (the Department or USDA) provides donated foods to State distributing agencies for distribution to recipient agencies (*e.g.,* school food authorities) participating in the National School Lunch Program (NSLP) and other child nutrition or food distribution programs. In accordance with Federal regulations in 7 CFR part 250, distributing agencies may provide the donated foods to commercial processors for processing into end products for use in NSLP or other food programs. For example, a whole chicken or chicken parts may be processed into precooked grilled chicken strips for use in NSLP. The ability to divert donated foods for processing provides recipient agencies with more options for using donated foods in their programs. The regulations ensure that State and recipient agencies, and program recipients, receive the full benefit of the donated foods provided to such processors for processing into end products. Distributing agencies must enter into agreements with processors to ensure compliance with the requirements in Federal regulations.

Over the last 30 years, the quantity and variety of donated foods provided in the NSLP and other child nutrition programs has increased substantially. Donated foods meet the highest quality and safety standards and are selected by the Department to assist recipient agencies in offering nutritious and well-balanced meals that meet meal pattern and nutrition standards for meals served in child nutrition programs. Concurrently, the variety of end products offered by processors has increased and adapted to reflect the types of foods recipient agencies need. In the last several years, the Department's Food and Nutrition Service (FNS) has taken a number of steps to facilitate the use of donated foods by commercial processors in the interest of providing more efficient and effective service to school food authorities and other recipient agencies. Most of these changes have been implemented as a result of discussions with State and local program operators, processors and industry consultants.

FNS has used its regulatory waiver authority in current 7 CFR 250.30(q) to initiate demonstration projects designed to better serve recipient agencies and foster a more efficient program. These demonstration projects have proven very informative as the industry and the needs of recipient agencies have evolved. Many of these methods tested, such as the expansion of permitted substitutions and the implementation of National Processing Agreements, have proven successful and are proposed for codification in this rule.

In a final rule published in the **Federal Register** on October 23, 2002 at 67 FR 65011, 7 CFR part 250 was amended to expand the types of donated foods that processors were permitted to substitute with commercially purchased foods without prior FNS approval. The rule permitted processors to substitute donated fruits, vegetables, and eggs with commercially purchased foods of the same generic identity, of U.S. origin, and of equal or better quality than the donated foods. Additionally, limited substitution of donated poultry was permitted, in accordance with the processor's USDA-approved substitution plan. Substitution allows processors more flexibility and efficiency in producing finished end products for school food authorities which helps minimize cost while ensuring quality.

In May 2013, FNS initiated a demonstration project which permitted processors with a USDA-approved substitution plan to substitute commercially purchased beef and pork for donated beef and pork, in accordance with the processor's USDA-approved substitution plan. In accordance with the terms of the demonstration project, as established in FNS policy memorandum *FD–130: Processing—Substitution of USDA Beef and Pork,* the commercial product must be of U.S. origin and of equal or better quality in all Departmental purchase specifications than the donated food.

Among other requirements of the demonstration project, the substitution plan has required assurances that: (1) Processing is performed in plants under continuous Federal or State meat inspection; (2) the Department's Agricultural Marketing Service (AMS) graders monitor the process to ensure compliance with substitution requirements; (3) commercial product is purchased from an AMS-approved vendor in good standing and is tested to ensure that it is of equal or better quality in all Departmental purchase specifications, including specifications relating to acceptable tolerance levels for specific microorganisms, chemical residues, and fat; and (4) commercial product is subject to audited processes for humane handling, food defense, and threat agent testing.

In October 2004, FNS initiated a demonstration project to allow multi-State processors to submit end product data schedules to FNS for review and approval at the national level, rather than submitting them to State distributing agencies for their approval. End product data schedules indicate the required yield of donated foods that must be obtained in their processing into end products. Review and approval of end product data schedules, however, is a time and labor-intensive activity for State distributing agencies. National approval of end product data schedules under the demonstration project has reduced the time and labor burden considerably for both distributing agencies and all multi-State processors since processors are not required to submit end product data schedules for approval in each State in which they operate.

In conjunction with the demonstration project allowing national approval of end product data schedules, FNS requires multi-State processors to sign a National Processing Agreement. Under the National Processing Agreement, FNS monitors the processor's national inventory of donated foods, and holds and manages the processor's performance bond or letter of credit, which protects the value of the processor's donated food inventories. Under the demonstration project, the monitoring and protection of donated food inventories held by processors at the national level has further reduced the burden on distributing agencies. Distributing agencies may include other State-specific processing requirements and select the processor's nationally approved end products for sale in the State under their State Participation Agreements with multi-State processors.

On August 24, 2006, FNS published a proposed a rule to revise and clarify requirements for the processing of donated foods (71 FR 50249). As part of this proposed rule, FNS proposed to retain title to donated foods delivered to multi-State processors until acceptance of finished end products by the State distributing or recipient agency. It was subsequently determined that FNS needed additional statutory authority to retain title to donated foods at the processor and the rule was not finalized pending legislative change. Section 4104 of the Agricultural Act of 2014 (Pub. L. 113–79, the Farm Bill) amended Section 17 of the Commodity Distribution Reform Act and WIC Amendments of 1987, 7 U.S.C. 612c note to provide that authority and the necessary statutory authority for FNS to promulgate regulations ensuring accountability of USDA Donated Foods.

The regulatory amendments proposed in this rule would implement provisions of the Farm Bill related to processing of donated foods and incorporate into 7 CFR part 250 the processing options provided under the demonstration project described above. They would also more effectively ensure accountability for donated foods provided for processing while streamlining requirements to increase program efficiency for recipient agencies. Most significantly, the rule proposes to:

(1) Require that FNS retain title of USDA Donated Foods while at multi-State processors;

(2) Require each multi-State processor to sign a National Processing Agreement with FNS and to submit end product data schedules to the Department for approval at the national level;

(3) Require multi-State processors to submit a performance bond or letter of credit to FNS to protect the value of the processors' donated food inventories;

(4) Permit substitution of donated beef and pork with commercial beef and pork of U.S. origin and of equal or better quality in all Departmental purchase specifications than the donated food, provided applicable requirements are met, including a USDA-approved substitution plan;

(5) Establish a title transfer exception dictating that when a recipient agency has contracted with a distributor to act as an authorized agent, title to finished end products containing donated foods transfers to the recipient agency upon delivery and acceptance by the contracted distributor;

(6) Require processors providing end products containing donated foods to a distributor to enter into a written agreement with the distributor specifying the (a) distributor's financial liability for the replacement value of donated foods once delivered to the distributor; (b) frequency of reporting; and (c) applicable value pass through system; and

(7) Require distributing agencies to more closely monitor donated food inventories at processors to ensure that processors do not maintain inventories in excess of what can be effectively utilized by recipient agencies in a timely manner.

As discussed below, we propose to amend current §§ 250.2, 250.11, 250.18 and 250.19, and to completely revise § 250.30 under Subpart C, *Processing and Labeling of Donated Foods.* The revision of Subpart C would break out the single section in that subpart into 10 new sections to more clearly present the specific processing requirements. Lastly, we propose to rewrite all revised sections in plain language, to make them easier to read and understand but not to change or alter the interpretation and application of the revised sections. The proposed changes to 7 CFR part 250 are discussed in detail below.

II. Discussion of the Rule's Provisions

A. Definitions, § 250.2

Due to developments in food distribution programs, and for the purpose of clarification, we propose to remove, revise, and add definitions in current § 250.2 relating to processing of donated foods. We propose to remove the definitions of ''Contracting agency'' and ''Fee-for-service.'' The term ''Contracting agency'' would be replaced throughout the proposed regulatory provisions with the specific agency (*i.e.,* distributing and/or recipient agency) that may enter into a processing agreement. The meaning of the term ''Fee-for-service'' is clear in the context of the proposed regulatory provisions and no longer requires a separate definition.

We propose to add definitions of ''Backhauling,'' ''Commingling,'' ''End product data schedule,'' ''In-State Processing Agreement,'' ''National Processing Agreement,'' ''Recipient Agency Processing Agreement,'' ''Replacement value,'' and ''State Participation Agreement.'' The definition of ''Backhauling'' would describe a means of delivery of donated food to a processor from a recipient agency's storage facility. The definition of ''Commingling'' would describe the common storage of donated foods with commercially purchased foods. The definition of ''End product data schedule'' would convey the important function of this document in describing

the processing of donated foods into finished end products. Definitions of ''National Processing Agreement,'' ''Recipient Agency Processing Agreement,'' ''State Participation Agreement,'' and ''In-State Processing Agreement'' would help the reader understand the different types of processing agreements permitted. These processing agreements are further described in the proposed § 250.30. The definition of ''Replacement value'' would clarify the donated food value that must be used by processors to ensure compensation for donated foods lost in processing or other activities. The definition of ''Replacement value'' reflects the price in the market at the time that the Department assigns the value whereas the definition of ''Contract value'' in current regulations reflects the Department's current acquisition price, which is set annually.

B. Delivery and Receipt of Donated Food Shipments, § 250.11

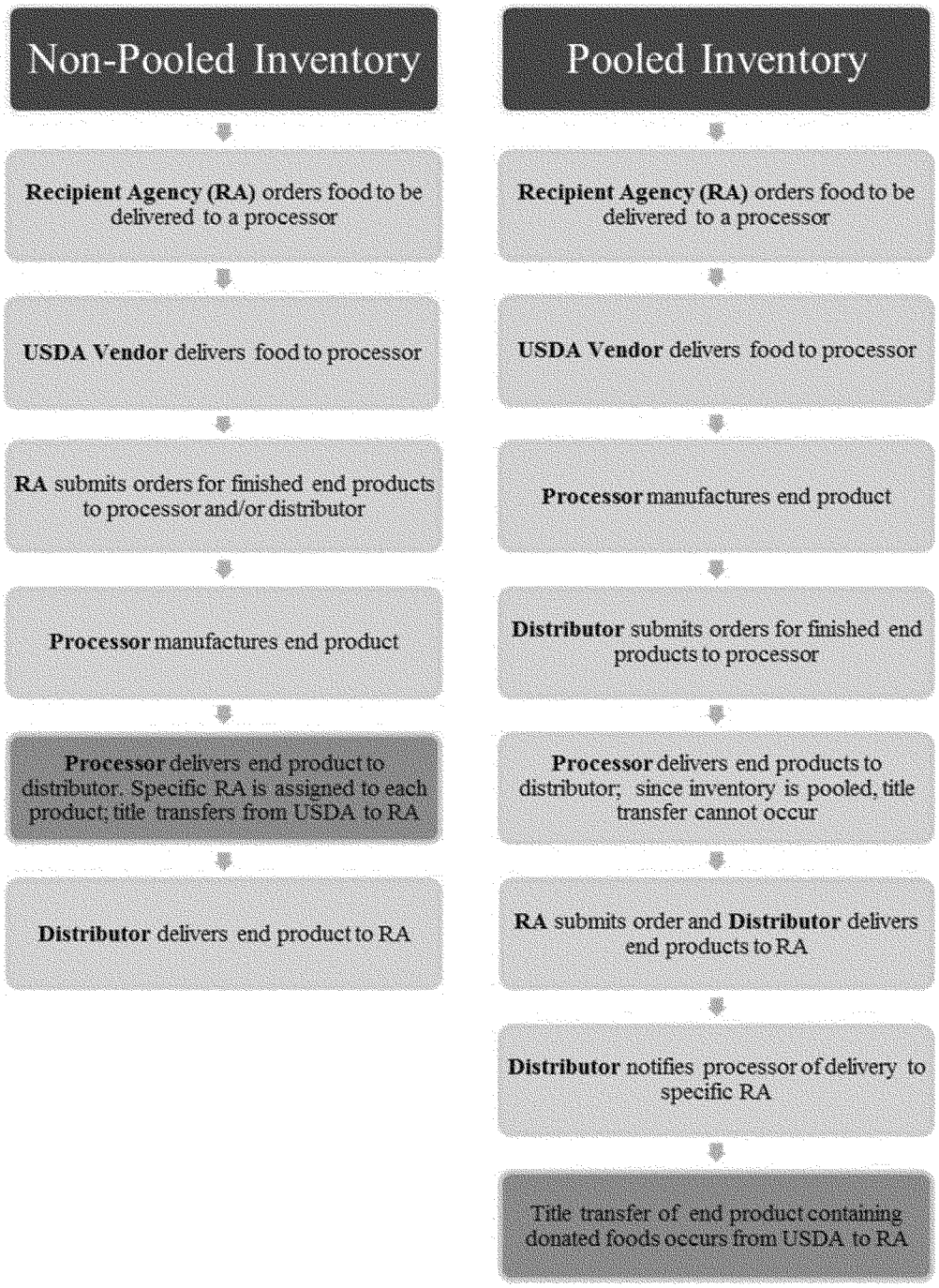
We propose to amend current § 250.11(e), which describes the timing of transfer of title to donated foods and the agency to which title is transferred. Currently, title to donated foods transfers to the distributing or recipient agency upon its acceptance of the donated foods at the time and place of delivery. However, we also propose to add an exception to the timing of title transfer, in accordance with the amendments made by Section 4104 of the Farm Bill and the requirements under National Processing Agreements proposed in this rule. In the proposed § 250.32(a), we are proposing to require a multi-State processor to provide a performance bond or letter of credit to FNS to protect the value of the processor's donated food inventory in accordance with its National Processing Agreement. However, unless the Department retains title to the donated foods held in the inventory of a processor, FNS would not have the authority to call in the bond if the processor failed to comply with processing requirements. Hence, we propose in § 250.11(e) to state that title to donated foods provided to a multi-State processor, in accordance with its National Processing Agreement, transfers to the distributing or recipient agency, as appropriate, upon the acceptance of finished end products at the time and place of delivery.

Many recipient agencies receiving finished end products from multi-State processors contract with a distributor to store end products and/or transport the finished end products to their facilities. The inclusion of distributors in the supply chain for finished end products creates challenges related to tracking and reporting the value of donated foods. Because processors are not a party to the contractual relationship between recipient agencies and distributors, processors lose control of finished end products once they are delivered to the distributors designated by each recipient agency. Therefore, we propose in this rulemaking that when a distributor is contracted by the recipient agency for the transportation and/or storage of finished end products and is acting as the recipient agency's authorized agent (*i.e.,* purchasing processed end products containing donated foods on behalf of the recipient agency), title of donated foods would transfer to the recipient agency upon the acceptance of finished end products at the time and place of delivery at the recipient agency or the distributor acting as the authorized agent of the recipient agency, whichever happens first.

Currently, in situations where recipient agencies contract with a distributor to store and/or transport processed end products containing donated foods and act as their authorized agent, complications can arise that may impede the transfer of title described above. Some processors and distributors, working in this manner, manufacture and/or order some processed end products prior to receiving donated food orders from recipient agencies. This results in processors and distributors ''pooling'' their inventories of processed end products, particularly for products containing nonsubstitutable items. In other words, processors will manufacture finished end products and distributors will order and receive processed end products from the processor without either entity knowing specifically which recipient agency will order or receive those items. This is most commonly due to processors and/or distributors manufacturing/ordering end products in advance of receiving orders from recipient agencies based on forecasted estimates. The diagram below illustrates the differences between ''pooled'' and ''non-pooled'' inventory in these specific cases (*i.e.,* nonsubstitutable donated food traveling through a supply chain that includes a distributor acting as the recipient agency's authorized agent).

In the case of ''pooled'' inventories (as illustrated below), under current regulations title cannot transfer to the recipient agency at the time of delivery at their contracted distributor because neither the processor nor the distributor know which recipient agency will receive which products. The intent of the proposed § 250.11(e) is to discourage the pooling of processed end products containing nonsubstitutable donated foods (*i.e.,* end products must be assigned to a specific recipient agency by the time they are accepted at a distributor so that the title may be transferred to the correct recipient agency).

Current Practice:



This shift in the timing of title transfer would impact the calculation of performance bonds currently being required of multi-State processors through National Processing Agreements. All other factors held equal, some multi-State processors would encounter a reduction in the required annual bond amount, as determined by FNS, due to the transfer of title of donated foods to the recipient agency taking place at an earlier stage in the supply chain. Although this shift would reduce inventories and bonding amounts for some multi-State processors, it would also place more responsibility on recipient agencies to track and protect the value of donated food inventories being managed by their designated distributors, acting as their agents.

C. Reporting Requirements, § 250.18

In current § 250.18(b), processors are required to submit monthly performance reports to the distributing agency, in accordance with current § 250.30(m). We propose to retain this requirement but to clarify that processors must submit performance reports and other supporting documentation, as required by the distributing agency or by FNS, in accordance with proposed § 250.37.

D. Recordkeeping Requirements, § 250.19

In current § 250.19(a), processors must maintain records documenting the sale of end products to recipient agencies, including the sale of such end products by distributors. As discussed later in the preamble, we are proposing to include specific recordkeeping requirements for processors in the

proposed § 250.37(d). Hence, we propose to amend this section to require that processors must comply with the applicable recordkeeping requirements in Subpart C of this part and with any other recordkeeping requirements included in their agreements.

E. Subpart C—Processing of Donated Foods

As previously mentioned, we propose to completely revise current Subpart C, *Processing and Labeling of Donated Foods,* which currently contains only § 250.30. In revising Subpart C, we would restructure it into 10 new sections, to more clearly present the specific processing requirements, and rewrite these sections in plain language. We propose to include the requirements for specific processing activities in the order in which they most commonly occur; *i.e.,* entering into processing agreements, processing of donated foods into end products, sale of end products, submission of reports, etc. We also propose to change the heading of Subpart C to *Processing of Donated Foods*. The new sections proposed under the revised Subpart C include the following:

250.30 Processing of donated foods into end products.
250.31 Procurement requirements.
250.32 Protection of donated food value.
250.33 Ensuring processing yields of donated foods.
250.34 Substitution of donated foods.
250.35 Storage, food safety, quality control, and inventory management.
250.36 End product sales and crediting for the value of donated foods.
250.37 Reports, records, and reviews of processor performance.
250.38 Provisions of agreements.
250.39 Miscellaneous provisions.

1. Processing of Donated Foods Into End Products, § 250.30

In the proposed § 250.30, we propose to state clearly why donated foods are provided to processors for processing, and to describe the different types of processing agreements permitted, including National, In-State, and Recipient Agency Processing Agreements. However, we propose to include the specific provisions required for each type of agreement in the proposed § 250.38, as the reason for their inclusion would only be clear with an understanding of the processing requirements contained in the preceding sections.

In the proposed § 250.30(a), we propose to describe the benefit of providing donated foods to a processor for processing into end products, and to clarify that a processor's use of a commercial facility to repackage donated foods, or to use donated foods in the preparation of meals, is also considered processing in 7 CFR part 250.

In current § 250.30(b), a distributing agency may contract with a processor to process donated foods, or may permit subdistributing or recipient agencies to contract with processors. Currently, most donated foods are processed in accordance with National Processing Agreements or In-State Processing Agreements. However, some large school food authorities currently have agreements with processors to process donated foods and contracts to purchase the finished end products, as permitted by distributing agencies. Additionally, as previously described, FNS has permitted multi-State processors to process donated foods in accordance with National Processing Agreements under a demonstration project initiated in 2004.

In the proposed § 250.30(b), we propose to clarify that processing of donated foods must be performed in accordance with an agreement between the processor and FNS, between the processor and the distributing agency, or, if permitted by the distributing agency, between the processor and a recipient agency (or subdistributing agency). We propose to include in proposed § 250.30(b) the stipulation in current § 250.30(c)(5)(ix) that an agreement may not obligate the distributing or recipient agency, or the Department, to provide donated foods to a processor for processing. USDA purchase and donation of foods is dependent on market conditions, and specific foods may not be available for donation in certain years. We propose to clarify that the agreements described in this section are required in addition to, not in lieu of, competitively procured contracts required in accordance with § 250.31. We propose to revise the requirement in current § 250.30(c)(4) that indicates which official of the processor must sign the processing agreement and more simply state in proposed § 250.30(b) that the processing agreement must be signed by an authorized individual acting for the processor. We propose to remove the stipulation in current § 250.30(c)(1) that a processing agreement must be in standard written form.

In accordance with the National Processing Agreement permitted under the demonstration project, FNS reviews and approves end product data schedules submitted by multi-State processors, and holds and manages the processor's performance bond or letter of credit to protect the value of donated food inventories. FNS also monitors the processor's national donated food inventory through the review of performance reports, which processors must submit to FNS on a monthly basis. Hence, in the proposed § 250.30(c), we would require that a multi-State processor enter into a National Processing Agreement with FNS to process donated foods into end products, in accordance with end product data schedules approved by FNS. We would also indicate that, in the proposed § 250.32, FNS holds and manages the multi-State processor's performance bond or letter of credit to protect the value of donated food inventories under the National Processing Agreement. We would indicate that FNS does not itself procure or purchase end products under such agreements, and that a multi-State processor must enter into a State Participation Agreement with the distributing agency in order to sell nationally approved end products in the State, as in the proposed § 250.30(d).

In the proposed § 250.30(d), we would require the distributing agency to enter into a State Participation Agreement with a multi-State processor to permit the sale of end products produced under the processor's National Processing Agreement in the State, as previously indicated. The State Participation Agreement is currently utilized in conjunction with National Processing Agreements in the demonstration project. Under the State Participation Agreement, we propose to permit the distributing agency to select the processor's nationally approved end products for sale to eligible recipient agencies within the State or to directly purchase such end products. The processor may provide a list of such nationally approved end products in a summary end product data schedule. We also propose to permit the distributing agency to include other processing requirements in the State Participation Agreement, such as the specific methods of end product sales permitted in the State, in accordance with the proposed § 250.36, (*e.g.,* a refund, discount, or indirect discount method of sales), or the use of labels attesting to fulfillment of meal pattern requirements in child nutrition programs. We propose to require the distributing agency to utilize selection criteria in current § 250.30(c)(1) to select processors with which to enter into State Participation Agreements.

Currently, a distributing agency must enter into an In-State Processing Agreement with an in-State processor (*i.e.,* a processor which only services recipient agencies in a single State via a production facility located in the same

State) to process donated foods into finished end products for sale in the State. Under such an agreement, the distributing agency may procure the services and purchase the finished end products for distribution to eligible recipient agencies. However, it may also select a number of processors with which it enters into such agreements and permit recipient agencies to purchase finished end products from them, in accordance with applicable procurement requirements. These latter types of processing agreements are commonly called ''master agreements.'' The distributing agency must utilize selection criteria in current § 250.30(c)(1) to select processors with which to enter into master agreements. Under all In-State Processing Agreements, the distributing agency must approve end product data schedules submitted by the processor, hold and manage the processor's performance bond or letter of credit, and assure compliance with all processing requirements.

In the proposed § 250.30(e), we propose to clarify the distinction between master agreements and other In-State Processing Agreements and to include in this proposed section the required criteria in current § 250.30(c)(2) for selecting processors under master agreements. We propose to require that the distributing agency enter into an In-State Processing Agreement with an in-State processor to process donated foods, as currently required under the demonstration project.

In current § 250.30(b)(3), the distributing agency may permit recipient agencies (or subdistributing agencies) to enter into agreements with processors to process donated foods and to purchase the finished end products. We propose to permit such agreements in the proposed § 250.30(f), and to refer to them as Recipient Agency Processing Agreements. We also propose to clarify that, under such agreements, the distributing agency may also delegate oversight and monitoring to the recipient agency to approve end product data schedules or select nationally approved end product data schedules, review processor performance reports, manage the performance bond or letter of credit of an in-State processor, and monitor other processing activities. All such activities must be performed in accordance with the requirements of this part. We propose to clarify that a recipient agency may also enter into a Recipient Agency Processing Agreement, and perform the activities described above, on behalf of other recipient agencies, in accordance with an agreement between the parties (such as in a school cooperative). We propose to require the recipient agency to utilize selection criteria in current § 250.30(c)(1) to select processors with which to enter into Recipient Agency Processing Agreements. We propose to include the requirement in current § 250.30(l) that the distributing agency approve all Recipient Agency Processing Agreements. In general, FNS recommends that distributing agencies consult with the State administering agency for the review and approval of these agreements, if necessary. State administering agencies have experience reviewing and establishing processes to review contracts which are similar to Recipient Agency Processing Agreements.

In current § 250.30(b)(1), the distributing agency must test end products with recipient agencies prior to entering into processing agreements, to ensure that they will be acceptable to recipient agencies. Such testing is not required if end products have previously been tested, or have otherwise been determined to be acceptable to recipient agencies. We propose to include these requirements in the proposed § 250.30(g), but to clarify that the requirements only apply to distributing agencies that procure end products on behalf of recipient agencies or otherwise limit recipient agencies' access to the procurement of specific end products. We also propose to clarify that the distributing agency may permit recipient agencies to test end products. We also propose to amend the current requirement that the distributing agency develop a system to monitor product acceptability on a periodic basis by requiring instead that the distributing agency, or its recipient agencies, must monitor product acceptability on an ongoing basis.

In current § 250.30(c)(5)(xv), a processor may not assign the processing agreement, or subcontract with another entity, to perform any aspect of processing without the written consent of the distributing agency. We propose to clarify, in the proposed § 250.30(h), that a processor may not assign any processing activities under its processing agreement, or subcontract with another entity to perform any aspect of processing, without the written consent of the other party to the agreement, which may be the distributing, subdistributing, or recipient agency, or FNS. We propose to permit the distributing agency to provide the required written consent as part of its State Participation Agreement or In-State Processing Agreement with the processor.

In the proposed § 250.30(i), we would require agreements between processors and distributors. This proposal would provide distributing and recipient agencies with another tool to ensure that the value of donated foods and finished end products are properly credited and provided to recipient agencies when third party distributors exist in the supply chain between processors and recipient agencies. The agreement, initiated by the processor before releasing finished end products to a distributor, must reference, at a minimum, the financial liability (*i.e.,* who must pay) for the replacement value of donated foods, not less than monthly end product sales reporting frequency, requirements under § 250.11, and the applicable value pass through system to ensure that the value of donated foods and finished end products are properly credited to recipient agencies. Distributing agencies could set additional requirements such as requiring that copies or templates of these agreements be included with the submission of signed State Participation Agreements.

In current § 250.30(c)(1), processing agreements are limited to one year, but may provide for an option to extend the agreement for two additional one-year periods. In the proposed § 250.30(j), we propose to revise this requirement by permitting all agreements between a distributing, subdistributing, or recipient agency and a processor to be up to five years in duration. This proposal would permit the appropriate agency to determine the length of agreement that would be to its best advantage, within the five-year limitation, and would reduce the time and labor burden imposed on such agencies. We propose to make National Processing Agreements permanent. We propose to indicate that amendments to any agreements may be made as needed (*e.g.,* when new subcontractors are added), with the concurrence of the parties to the agreement, and that such amendments would be effective for the duration of the agreement, unless otherwise indicated.

We propose to remove the following requirements or statements in current § 250.30 related to processing agreements, as they are overly restrictive or unnecessary given current practice and administrative structure:

- The requirement in current § 250.30(c)(1) that the FNS Regional Office review processing agreements.
- The requirement in current § 250.30(c)(3) that the agreement be prepared and reviewed by State legal staff to ensure conformance with Federal regulations.

• The requirement in current § 250.30(l) that the distributing agency provide a copy of the 7 CFR part 250 regulations to processors and a copy of agreements to processors and the FNS Regional Office.

2. Procurement Requirements, § 250.31

The requirements for the procurement of goods and services under Federal grants are established in 2 CFR part 200 and USDA implementing regulations at 2 CFR part 400 and Part 416, as applicable. In the proposed § 250.31(a), we propose to indicate the applicability of these requirements to the procurement of processed end products, distribution, or of other processing services related to donated foods. We also propose to indicate that distributing or recipient agencies may use procurement procedures that conform to applicable State and local laws, as appropriate, but must ensure compliance with the Federal procurement requirements.

In the proposed § 250.31(b), we would require specific information in procurement documents, to assist recipient agencies in ensuring that they receive credit for the value of donated foods in finished end products. We propose to require that procurement documents include the price to be charged for the finished end product or other processing service, the method of end product sales that would be utilized, an assurance that crediting for donated foods would be performed in accordance with the applicable requirements for such method of sales in proposed § 250.36, the contract value of the donated food in the finished end products, and the location for the delivery of the finished end products. We propose to remove current requirements for the provision of pricing information outside of the procurement process, including:

(1) The requirement in current § 250.30(c)(5)(ii) that pricing information be included with the end product data schedule; and

(2) The requirements in current § 250.30(d)(3) and (e)(2) that the processor provide pricing information summaries to the distributing agency, and the distributing agency provide such information to recipient agencies, as soon as possible after completion of the agreement.

3. Protection of Donated Food Value, § 250.32

In current § 250.30(c)(5)(viii)(B), the processor is required to obtain, and furnish to the distributing agency, financial protection to protect the value of donated foods prior to their delivery for processing, by means of a performance bond, an irrevocable letter of credit, or an escrow account. The distributing agency must determine the dollar value of the financial protection, based on the quantity of donated foods for which the processor is accountable. In the proposed § 250.32(a), we propose to include the current requirement that the processor obtain such financial protection but to remove the option to obtain an escrow account, as it is little-used and unnecessarily complicates this section. However, we propose to require that a multi-State processor provide the performance bond or irrevocable letter of credit to FNS, in accordance with its National Processing Agreement. We propose to clarify that the amount of the performance bond or letter of credit must be sufficient to cover at least 75 percent of the value of donated foods in the processor's physical or book inventory, as determined annually, and at the discretion of FNS, for processors under National Processing Agreements. For multi-state processors in their first year of participation in the processing program, the amount of the performance bond or letter of credit must be sufficient to cover 100 percent of the value of donated foods, as determined annually, and at the discretion of FNS. This proposed clarification would codify existing Program policy.

In the proposed § 250.32(b), we propose to indicate the conditions under which the distributing or recipient agency must call in the performance bond or letter of credit. We also propose to indicate that FNS would call in the performance bond or letter of credit under the same conditions and would ensure that any monies recovered by FNS are reimbursed to distributing agencies for losses of entitlement foods.

4. Ensuring Processing Yields of Donated Foods, § 250.33

In current § 250.30(c)(5), the processor must submit, as part of the agreement approval, information regarding the production of an end product to ensure that the distributing or recipient agency, as appropriate, receives the benefit of the donated food processed. This information, called the end product data schedule, must include the following:

• A description of the end product;

• The types and quantities of donated foods and other ingredients needed to produce a specific quantity of end product;

• The yield for the donated food;

• The contract value of the donated food; and

• Any pricing information in addition to the charge for the end product or fee-for-service.

In the proposed § 250.33, we propose to retain the required submission of the end product data schedule and to more specifically describe the required processing yields of donated food, which is currently referred to as the yield. In the proposed § 250.33(a), we would require submission of the currently required information on the end product data schedule, with the exception of the price charged for the end product or other pricing information and the contract value of the donated food. As described above, in the proposed § 250.31, pricing information must be included in the procurement of end products or other processing services relating to donated foods. Inclusion of such information on end product data schedules may be misleading, as it may lead some recipient agencies to conclude that a competitive procurement has been performed by the distributing agency under its In-State Processing Agreement or State Participation Agreement. Prices currently included on end product data schedules generally reflect the highest price that a processor would charge for the finished end product and not necessarily the actual price of the end product.

We also propose to require inclusion of the processing yield of donated food, which may be expressed as the quantity of donated food (*e.g.,* pounds or cases) needed to produce a specific quantity of end product or as the percentage of donated food returned in the finished end product. We propose to retain the requirement that end product data schedules be approved by the distributing agency under In-State Processing Agreements. We propose to clarify that the end product data schedules for products containing donated red meat or poultry must also be approved by the Department, as is currently required under the demonstration project. We propose to require that, under National Processing Agreements, end product data schedules be approved by the Department. Lastly, we propose to clarify that an end product data schedule must be submitted in a standard electronic format dictated by FNS, and approved for each new end product that a processor wishes to provide or for a previously approved end product in which the ingredients or other pertinent information have been altered.

In proposed § 250.33(b), we propose to describe the different processing yields of donated foods that may be approved in end product data schedules. In current § 250.30(c)(5)(ii), the processor must meet a 100 percent yield in the processing of all

substitutable donated foods (*i.e.,* generally all donated foods except beef, pork and poultry). Under 100 percent yield, the processor must ensure that 100 percent of the raw donated food diverted for processing is returned in the finished end product. Production loss of donated food must be accounted for by replacement with commercially purchased food of the same generic identity, of U.S. origin, and of equal or better quality than the donated food. To demonstrate this, the processor must report reductions in donated food inventories on performance reports. These reductions must be reported in the amount of donated food contained in the finished end product rather than the amount that went into production. We propose to include the current 100 percent yield requirement in the proposed § 250.33(b)(1). We propose to indicate that FNS may make exceptions to the 100 percent yield requirement, on a case-by-case basis. Exceptions to the 100 percent yield requirement can result in one of the alternate processing yields described below.

Processing of donated foods such as beef, pork, and poultry invariably results in significant loss of product, such as the bones in chicken or fat in beef and pork. Hence, the processing yield must take such losses into account in the same manner that the processing of commercial product accounts for such losses. Currently, the three processing yields approved in end product data schedules to account for such losses include guaranteed yield, guaranteed minimum yield, and standard yield. In an effort to simplify the yield requirements and streamline monitoring for distributing and recipient agencies we propose to limit the processing yields to 100 percent yield, guaranteed yield, and standard yield.

Under guaranteed yield, the processor must ensure that a specific quantity of end product would be produced from a specific quantity of donated food put into production. The guaranteed yield for a specific product is determined and agreed upon by the parties to the processing agreement, and, for In-State and Recipient Agency Processing Agreements, approved by the Department. Guaranteed yield is generally used when significant variance is present across processors in manufacturing and yield for a particular end product. The guaranteed yield must be indicated on the end product data schedule. We propose to describe guaranteed yield in the proposed § 250.33(b)(2).

Under standard yield, the processor must ensure that a specific quantity of end product, as determined by the Department, would be produced from a specific quantity of donated food. The standard yield is determined and applied uniformly by the Department to all processors for specific donated foods. The established standard yield is higher than the average yield under normal commercial production and serves to reward those processors that can process donated foods most efficiently. If necessary, the processor must use commercially purchased food of the same generic identity, of U.S. origin, and equal or better in all USDA procurement specifications than the donated food to provide the number of cases required to meet the standard yield to the distributing or recipient agency, as appropriate. Like guaranteed yield, standard yield ensures that the recipient agency would receive a specific quantity of end product, which helps to ensure that it can meet its food service needs. We propose to describe standard yield in the proposed § 250.33(b)(3).

In the proposed § 250.33(c), we would require that the processor compensate the distributing or recipient agency, as appropriate, for the loss of donated foods, or for commercially purchased foods substituted for donated foods. Processing of donated foods may sometimes result in finished end products that are wholesome but do not meet the specifications required for use in the recipient agency's food service. In normal business practice, such products are usually returned to production for processing into end products that meet required specifications. These are often called rework products. Loss of donated foods may result for a number of reasons, including the processor's failure to meet the required processing yield or failure to produce end products that meet required specifications, as described above, spoilage or damage of donated foods in storage, or improper distribution of end products. In order to compensate for such losses of donated foods, we propose to require that the processor:

(1) Replace the lost donated food or commercial substitute with commercially purchased food of the same generic identity, of U.S. origin, and equal or better in all USDA procurement specifications than the donated food; or

(2) Return end products that are wholesome but do not meet required specifications to production for processing into the requisite quantity of end products that meet the required specifications; or

(3) Pay the distributing or recipient agency, as appropriate, for the replacement value of the donated food or commercial substitute only if the purchase of replacement foods is not feasible and the processor has received approval. In-State processors would be required to obtain distributing agency approval for such payment and multi-State processors would be required to obtain FNS approval.

In current § 250.30(c)(5)(viii)(D), the processor must credit the distributing or recipient agency, as appropriate, for the sale of any by-products resulting from the processing of donated foods or of commercially purchased foods substituted for donated foods. Crediting must be achieved through reduction of the processing fee and must be in the amount received from such sale or the market value of the by-products. We propose to include this requirement in the proposed § 250.33(d), but propose to require crediting through invoice reductions or another means of crediting. We also propose to clarify that the processor must credit the appropriate agency for the net value received from the sale of by-products after subtraction of any documented expenses incurred in preparing the by-product for sale. We propose to remove the requirement in current § 250.30(c)(5)(viii)(D) that the processor credit the distributing or recipient agency for the sale of donated food containers because the burden required to monitor the credit outweighed the value returned.

In current § 250.30(i), the processor must meet applicable Federal labeling requirements, and must follow the procedures required for approval of labels for end products that claim to meet meal pattern requirements in child nutrition programs. We propose to include these requirements in the proposed § 250.33(e).

5. Substitution of Donated Foods, § 250.34

We propose to include requirements for the substitution of donated foods in the proposed § 250.34. Currently, in § 250.30(f)(1), the processing agreement may allow the processor to substitute commercially purchased foods for all donated foods except donated beef, pork and poultry without prior approval of the Department. Substitution must be with commercially purchased foods of the same generic identity, of U.S. origin, and of equal or better quality than the donated foods. Under current regulations, substitution of donated poultry is permitted with some limitations in accordance with a processor's USDA-approved substitution plan. Substitution of

donated beef and pork is not permitted under the current regulations.

As previously discussed in the preamble, beginning in 2013, the Department used its regulatory waiver authority, to permit processors with a Department-approved Processor Control Certification Program plan to substitute commercially purchased beef and pork for donated beef and pork. The commercial product must be of U.S. origin, and of equal or better quality in all Departmental purchase specifications than the donated food. In addition, only donated beef and pork delivered to the processor from a USDA vendor may be substituted. Donated beef and pork delivered to a processor from a recipient agency facility for processing may not be substituted (this process is commonly called backhauling). In a similar manner, substitution of backhauled donated poultry is prohibited in current § 250.30(f)(1)(ii).

In the proposed § 250.34(a), we propose to permit a processor to substitute any donated food that is delivered to it from a USDA vendor with commercially purchased food of the same generic identity, of U.S. origin, and of equal or better quality in all Departmental purchase specifications than the donated food. We propose to clarify that commercially purchased beef, pork or poultry must meet the same specifications as donated product, including inspection, grading, testing, and humane handling standards, and must be approved by the Department in advance of substitution. Hence, we propose to remove the required elements of a processor's plan for poultry substitution in current § 250.30(f)(1)(ii)(B).

In current § 250.30(f)(1)(ii)(A), substitution of commercial poultry for donated poultry may be made before the processor actually receives a shipment of the donated poultry. In such case, however, the processor assumes all risks if, due to changing market conditions or other reasons, the Department is unable to purchase and deliver donated poultry to the processor for processing. In the proposed § 250.34(a), we propose to allow a processor the option to substitute any donated food in advance of the receipt of the donated food shipment and to more clearly describe the processor's assumption of risk should the Department be unable to purchase and deliver any donated food so substituted. Lastly, we propose to require that commercially purchased food substituted for donated food meet the same processing yield requirements that would be required for the donated food, as in the proposed § 250.33.

Donated food may be backhauled to a processor from a recipient agency facility when a recipient agency determines that, despite earlier projections, it is unable to utilize the donated food in its current form. Rather than see it go to waste, the recipient agency provides the food to a processor to process into a more usable form. In the proposed § 250.34(b), we propose to prohibit substitution or commingling of all backhauled donated foods and to require that the processor, if amenable to reformulation, process such end products into end products for sale and delivery to the same recipient agency that provided them and not to any other recipient agency. In other words, the recipient agency which backhauls a previously processed end product to a processor for reformulation must in turn use the reformulated end products, containing their backhauled product, in their food service. Additionally, we propose to prohibit the processor from providing payment to the recipient agency in lieu of processing and prohibit the distributing or recipient agency from transferring the backhauled food to another processor.

In current § 250.30(g), the processing of donated beef, pork and poultry must occur under Federal acceptance service grading in order to assure that substitution and yield requirements are met and that end products conform with the applicable end product data schedule. Such grading is conducted by the Department's Agricultural Marketing Service. The grader verifies the quality and quantity of food that is put into production, and the quantity of end products produced, and includes the pertinent information on a grading certificate. The processor is responsible for paying the cost of the acceptance service grading. In current § 250.30(f)(1), the processor must maintain records (including grading certificates) necessary to document that substitution of all donated foods has been conducted in accordance with the requirements in 7 CFR part 250. We propose to include all of these requirements in the proposed § 250.34(c).

In current § 250.30(g), the distributing agency may approve a waiver of the grading requirement for donated beef, pork, or poultry under certain conditions. We propose to include this contingency, and retain the current conditions under which the distributing agency may approve such a waiver, in the proposed § 250.34(d). However, we propose to indicate that such waivers may only be approved on a case by case basis—*e.g.,* for a specific production run. The distributing agency may not approve a blanket waiver of the requirement. We also include the current stipulation that a waiver may only be approved if the processor's past performance indicates that the quality of the end product would not be adversely affected.

Also, in current § 250.30(f)(1)(ii)(A), the processor may use donated poultry that has been substituted with commercially purchased poultry in any processing activities conducted at its facilities. Additionally, in current § 250.30(f)(2), substituted donated food must be used by the processor and may not be sold or disposed of in bulk form. In the proposed § 250.34(e), we propose to include the current provision that the processor may use any substituted donated food in other processing activities conducted at its facilities. We propose to remove the stipulation, in current § 250.30(f)(4), that title to the substituted donated food passes to the processor upon the initiation of processing of the end product with the commercial substitute. The transfer of title to donated foods, which are part of the Federal grant, is limited to the distributing agency or recipient agency, as the recipients of the grant. Subsequent donated food activities may be performed in accordance with Federal regulations and the terms of processing agreements but would not include a further transfer of title.

We propose to remove the requirements in current § 250.30(f)(1)(iii) that the processor maintain documentation that it has not reduced its level of commercial production in exercising the option to substitute commercially purchased foods for donated foods, or that it has made sufficient purchases to meet the 100 percent yield requirement in processing of donated foods. In addition to being virtually impossible to determine, it is unlikely that a processor would choose to process donated foods if it were to adversely affect its commercial activities. The requirement that the processor compensate the distributing or recipient agency for failure to meet required processing yields of donated foods, as in the proposed § 250.33(f), is more appropriate, and effective, than a requirement that the processor make specific purchases of foods in the commercial market.

6. Storage, Food Safety, Quality Control, and Inventory Management, § 250.35

We propose to include requirements for the storage, food safety oversight, quality control, and inventory management of donated foods provided for processing in the proposed § 250.35. In current § 250.30(c)(5)(x), the

processor must describe its quality control system and assure that an effective quality control system will be maintained for the duration of its agreement. In the proposed § 250.35(a), we would require the processor to ensure the safe and effective storage of donated foods, including compliance with the general storage requirements in current § 250.12, and to maintain an effective quality control system at its processing facilities. We propose to require the processor to maintain documentation to verify the effectiveness of its quality control system and to provide such documentation upon request.

In current § 250.30(g), the processing of donated beef, pork and poultry, and of commercial meat products that contain any donated foods, must be performed in plants under continuous Federal meat or poultry inspection. However, in States certified as having programs at least equal to Federal standards, processing of such foods may be performed in plants under continuous State meat or poultry inspection for processed end products that are utilized in the State, rather than the Federal inspection. We propose to simplify these regulations in the proposed § 250.35(b) by requiring that all processing of donated foods is conducted in compliance with all Federal, State, and local requirements relative to food safety.

In the proposed § 250.35(c), we propose to clarify that a processor may commingle donated foods and commercially purchased foods, unless the processing agreement specifically stipulates that the donated foods must be used in processing, and not substituted, or the donated foods have been backhauled from a recipient agency. However, we propose to clarify that such commingling must be performed in a manner that ensures the safe and efficient use of donated foods, as well as compliance with substitution requirements, and with reporting of donated food inventories on performance reports, as required in 7 CFR part 250.

We also propose to require that processors ensure that commingling of finished end products with other food products by distributors results in the sale to recipient agencies of end products that meet substitution requirements. One way that this may be achieved is by affixing the applicable USDA certification stamp to the exterior shipping containers of such end products. This incorporates the provision in current § 250.30(f)(1)(ii)(B) that finished poultry end products that have not been produced under AMS acceptance service grading may not be substituted for end products containing donated foods. However, we propose to remove the requirement in current § 250.30(i) that exterior shipping containers or product labels for end products containing nonsubstitutable donated foods include such information to ensure their sale to eligible recipient agencies. Such assurance may be made through notification of the appropriate parties or by other means.

In current § 250.30(n)(1), a processor is limited in the amount of donated foods for which it is accountable at any one time. A processor may not have on hand more than a six-month supply of donated foods, based on an average amount utilized for that period. However, the distributing agency may, at the processor's request, provide written approval to allow the processor to maintain a larger amount of donated foods in inventory if it determines that the processor may efficiently store and process such an amount. The distributing agency may not order donated foods for delivery to a processor if it would result in excessive inventories, unless it has granted such approval. We propose to include the current limitation on inventories of donated foods at a processor in the proposed § 250.35(d) and to clarify that distributing agencies are not permitted to submit food orders for processors reporting no sales activity during the prior year's contract period unless documentation is submitted by the processor which outlines specific plans for donated food drawdown, product promotion, or sales expansion. Many distributing agencies have adopted ''sweep'' policies in which they transfer excess processor inventories for one recipient agency to another recipient agency or processor which is willing to accept it, to ensure that inventory is used effectively. For example, a distributing agency may transfer a recipient agency's remaining inventory at a processor to another recipient agency that is willing to accept such foods and use the foods efficiently. Such policies provide an additional tool for distributing agencies to ensure that donated foods are used efficiently and that processors and recipient agencies effectively manage their donated food inventories. We propose to include an allowance for FNS to require an inventory transfer to another State distributing agency or processor when inventories are determined to be excessive for a State distributing agency or processor, *i.e.,* more than six months on-hand or exceeding the established inventory protection, to ensure full utilization prior to the end of the school year.

In current § 250.30(n)(3), a processor must pay the distributing agency for the value of donated foods held in excess of allowed inventory levels at the end of the year, as indicated on the June performance report. However, in practice, the distributing agency often allows a processor to carry over such donated foods into the next year of the agreement, in accordance with its authority to approve donated food inventories in excess of the six-month limitation. The distributing agency may also direct the processor, in accordance with current § 250.12(e), to transfer donated foods held in excess of allowed levels to another distributing or recipient agency, or processor, if the processor is unable to process such foods. In the proposed § 250.35(e), we propose to clarify that the distributing agency may permit the processor to carry over donated foods in excess of allowed levels into the next year of its agreement, if the distributing agency determines that the processor may efficiently process such foods. We also propose to include the distributing agency's current option to direct the processor to transfer or re-donate such donated foods to another distributing or recipient agency or processor. Lastly, we propose to clarify that, if these options are not practical, the distributing agency must require the processor to pay for the donated foods held in excess of allowed levels in an amount equal to the replacement value of the donated foods.

In current § 250.30(j), when an agreement terminates, and is not extended or renewed, the distributing agency must direct the processor to return donated foods remaining in inventory or pay the distributing or recipient agency as applicable for the donated foods at the replacement value. For substitutable donated foods, the distributing agency may also permit the processor to return commercially purchased foods that meet substitution requirements in place of the donated foods or transfer the donated foods to other agencies with which it has entered into agreements. In the proposed § 250.35(f), we propose to expand the current options for the disposition of substitutable donated foods at the termination of an agreement to all donated foods, in accordance with our proposal in the proposed § 250.34 to permit substitution of all donated foods. We propose to clarify that the disposition of donated foods may include a transfer; *i.e.,* the distributing agency may permit a transfer of donated foods to another State distributing agency, with FNS approval, in

accordance with current § 250.12(e). We also propose to permit the transfer of commercially purchased foods that meet the substitution requirements in the proposed § 250.34 in place of the donated foods. We propose to permit the processor to pay the distributing or recipient agency, as appropriate, for the donated foods only if returning or transferring the donated foods or commercially purchasing food that meets the substitution requirements is not feasible and if FNS approval has been granted. If the distributing agency requires the processor to pay for donated foods, we propose to require such payment at the contract value or replacement value, whichever is higher, rather than the several options for assigning the donated food value currently included in the regulations. We propose to include the current requirement that the processor pay the cost of transporting any donated foods when the agreement is terminated at the processor's request or as a result of the processor's failure to comply with the requirements of 7 CFR part 250.

We propose to remove the stipulation in current § 250.30(j)(3) that funds received by distributing agencies from payments for donated foods upon termination of an agreement be used in accordance with § 250.17(c). The allowable use of funds accruing from program operations, including funds received by distributing agencies from payments for donated foods upon termination of an agreement, is described in current § 250.17 and thus the stipulation is no longer necessary.

7. End Product Sales and Crediting for the Value of Donated Foods, § 250.36

In current § 250.30(d)(1), a processor must sell end products to recipient agencies under a system that assures such agencies receive credit or ''value pass-through'' for the contract value of donated food contained in the end product. And, in current § 250.30(e), a processor must ensure that, when end products are provided to commercial distributors for sale and delivery to recipient agencies, such sales occur under a system that provides such agencies with a credit for the contract value of donated food contained in the end product. In the proposed § 250.36(a), we would require that the sales of end products, either directly by the processor or through a commercial distributor, be performed utilizing one of the methods of end product sales contained in this section, to ensure that the distributing or recipient agency, as appropriate, receives credit for the value of donated foods contained in end products. We also propose to require that all systems of sales utilized must provide clear documentation of crediting for the value of the donated foods contained in the end products.

In current § 250.30(d)(1)(i), a processor may utilize a refund or rebate system, in which the processor sells end products to the distributing or recipient agency, as appropriate, at the commercial or gross price, and provides the appropriate agency with a refund for the contract value of donated foods contained in the end products. In current § 250.30(e), a distributor may also sell end products received from the processor under a refund system, with the processor responsible for providing the refund to the appropriate agency. We propose to permit end product sales under this system, by either the processor or distributor, in the proposed § 250.36(b). We propose to require the processor to remit the refund to the distributing or recipient agency, as appropriate, within 30 days of receiving a request for a refund from the appropriate agency. We propose to clarify that the refund request must be in writing but may be transmitted via email or other electronic means. We propose to remove the requirement in current § 250.30(k) that the recipient agency submit a refund application to receive a refund for the value of donated foods in end products, as the term ''refund application'' implies the submittal of a written form, which is not necessary. Additionally, we propose to remove the 30-day, or quarterly, period by which the distributing or recipient agency must currently submit such a request. Once end product sales are made, we would expect requests for refunds to be made in an expeditious manner in the interest of the program. The agency may determine how frequently it wishes to receive its refunds, but refunds must be issued more frequently than annually. To that end, we also propose to remove the option, in current § 250.30(k)(3), for the processor to submit refunds that total $25 or less on a quarterly basis.

In current § 250.30(d)(1)(ii), the processor may utilize a discount system, in which the processor sells end products at a net price that provides a discount from the commercial case price for the value of the donated foods contained in the end products. We propose to permit end product sales under this system in the proposed § 250.36(c). We propose to refer to this system as a direct discount system to distinguish it from the method of end product sales described in the following paragraph.

In current § 250.30(e)(1)(ii), a distributor may sell end products to the distributing or recipient agency, as appropriate, at a net price that provides a discount from the commercial case price for the value of the donated foods contained in the end products. The processor then compensates the distributor for the discount provided for the value of the donated food in its sale of end products. We propose to permit end product sales under this system in the proposed § 250.36(d), and to refer to it as the indirect discount system. We propose to require the processor to ensure that the distributor notify it of such sales, at least on a monthly basis, through automated sales reports or other submission. We propose to remove the requirement, in current § 250.30(k)(2), that the distributor apply to the processor for a refund under this system.

In current § 250.30(d)(2), and in accordance with the definition in current § 250.2, the processor may sell end products to the distributing or recipient agency at a ''fee-for-service.'' The fee-for-service includes all costs to produce the end product minus the value of the donated food put into production. The processor must identify any charge for delivery of end products separately from the fee-for-service on its invoice. We propose to permit this method of end product sales in the proposed § 250.36(e).

In current § 250.30(e)(1)(iv), the processor may provide end products sold under a fee-for-service system to a distributor for delivery to the distributing or recipient agency. In such cases, the processor must identify the distributor's delivery charge separately from the fee-for-service on its invoice or may permit the distributor to bill the distributing or recipient agency separately for the delivery of end products. As a matter of policy, we have also permitted the processor to provide written approval to the distributing or recipient agency-contracted distributor to bill the distributing or recipient agency, as appropriate, for the total case price—*i.e.,* for the fee-for-service and the delivery charge. In such cases, the processor must ensure that the appropriate agency has advance notification of the fee-for-service and delivery charge. The processor must require that the distributor notify it of such sales, at least on a monthly basis, through automated sales reports or other submission, which may include email or other electronic means. We propose to include these requirements in the proposed § 250.36(e).

In current § 250.30(d)(1)(iii), the processor may sell end products to the distributing or recipient agency under an alternate method of end product

sales that is approved by FNS and the distributing agency. In current § 250.30(e)(1)(iii), the distributor may also sell end products under such an approved alternate method of sales. Such alternate methods of sale must ensure that the distributing or recipient agency, as appropriate, receives credit for the value of donated foods contained in the end products. We propose to include this option for both processor and distributor in the proposed § 250.36(f).

In the proposed § 250.36(g), we propose to clarify that the contract value of the donated foods must be used in crediting for donated foods in end product sales and to refer to the definition of contract value included in current § 250.2. In the proposed § 250.36(h), we would require that the distributing agency provide the processor with a list of recipient agencies eligible to purchase end products along with the quantity of raw donated food that is to be delivered to the processor for processing on behalf of each recipient agency. This would ensure that only eligible recipient agencies receive end products, and in the amounts for which they are eligible. For end products sold through distributors, we propose to require that the processor provide the distributor with a list of eligible recipient agencies and either the quantities of approved end products that each recipient agency is eligible to receive, or the quantity of donated food allocated to each recipient agency along with the raw donated food (pounds or cases) needed per case of each approved end product.

8. Reports, Records, and Reviews of Processor Performance, § 250.37

In the proposed § 250.37, we propose to include the reporting and recordkeeping requirements for the processing of donated foods, and the use of such reports and records to review processor performance. In current § 250.30(m), the processor must submit a monthly performance report to the distributing agency, including the following information for the reporting period, with year-to-date totals:

(1) A list of all eligible recipient agencies receiving end products;

(2) The quantity of donated foods on hand at the beginning of the reporting period;

(3) The quantity of donated foods received;

(4) The quantity of donated foods transferred to the processor from another entity, or transferred by the processor to another entity;

(5) The quantity of end products delivered to each eligible recipient agency; and

(6) The quantity of donated foods remaining at the end of the reporting period.

In the proposed § 250.37(a), we propose to retain the requirement that the processor submit the performance report to the distributing agency (or to the recipient agency, in accordance with a Recipient Agency Processing Agreement) on a monthly basis. We propose to retain all of the currently required information in the report. We propose to require the processor to include quantities of donated food losses. We propose to require that the processor also include grading certificates and other documentation, as requested by the distributing agency, to support the information included in the performance reports. Such documentation may include, for example, bills of lading, invoices or copies of refund payments to verify sales and delivery of end products to recipient agencies. We propose to retain the current deadlines for the submission of performance reports in the proposed § 250.37(a).

In the proposed § 250.37(b), we would require that the processor must include reductions in donated food inventories on monthly performance reports only after sales of end products have been made, or after sales of end products through distributors have been documented. We propose to require that, when a distributor sells end products under a refund system, such documentation must be through the distributing or recipient agency's request for a refund (under a refund system) or through the distributor's automated sales reports or other electronic or written submission (under an indirect discount system or under fee-for-service).

In the proposed § 250.37(c), we would require that a multi-State processor submit a summary performance report to FNS, on a monthly basis and in a standard format established by FNS, containing information from the performance report that would allow FNS to track the processor's total and State-by-State donated food inventories. The purpose of this report is to assess the amount of the performance bond or letter of credit required of the processor under its National Processing Agreement. However, each distributing agency would still be responsible for monitoring the multi-State processor's inventory of donated foods received for processing in the respective State, in accordance with the proposed § 250.37(a).

In the proposed § 250.37(d), we would require processors to maintain specific records to demonstrate compliance with processing requirements in 7 CFR part 250, including, for example, assurance of receipt of donated food shipments, production, sale, and delivery of end products, and crediting for donated foods contained in end products.

In accordance with current § 250.19(a), accurate and complete records must be maintained with respect to end products processed from donated foods. In the proposed § 250.37(e), we would require distributing agencies to maintain specific records to demonstrate compliance with processing requirements in 7 CFR Part 250, including, for example, end product data schedules, performance reports, copies of audits, and documentation of the correction of any deficiencies identified in such audits.

In the proposed § 250.37(f), we would require that recipient agencies maintain specific records to demonstrate compliance with processing requirements in 7 CFR part 250, including, for example, the receipt of end products purchased from processors or distributors, crediting for the value of donated foods included in end products, and procurement documents.

In accordance with current § 250.18(b), the distributing agency must make a continuing evaluation of processors and recipient agencies, through the review of performance reports and other reports and records, to ensure compliance with the requirements of 7 CFR part 250. And, in accordance with current § 250.30(m)(3), the distributing agency must review and analyze reports submitted by processors to ensure compliance with such requirements. We propose to clarify the review requirements for the distributing agency in the proposed § 250.37(g), including the review of performance reports to ensure that the processor:

(1) Receives donated food shipments, as applicable;

(2) Delivers end products to eligible recipient agencies, in the types and quantities for which they are eligible;

(3) Meets the required processing yields for donated foods; and

(4) Accurately reports donated food inventory activity and maintains inventories within approved levels.

We propose to remove the requirements in current § 250.30(m)(2) and (n)(2) relating to the submission of reports and the performance of reviews to ensure that substitution of concentrated skim milk for donated nonfat dry milk is in compliance with requirements. Donated nonfat dry milk

is no longer available for donation to schools.

9. Provisions of Agreements, § 250.38

In the proposed § 250.38, we include the required provisions for each type of processing agreement included in the proposed § 250.30, to ensure compliance with the requirements in 7 CFR part 250. In the proposed § 250.38(a), we propose to establish that the National Processing Agreement is inclusive of all provisions necessary to ensure that a multi-State processor complies with all applicable requirements relating to the processing of donated foods. FNS has developed a prototype National Processing Agreement that includes all such required provisions.

In the proposed § 250.38(b), we would require that the State Participation Agreement with a multi-State processor contain specific provisions or attachments to assure compliance with requirements in 7 CFR part 250 that are not included in the multi-State processor's National Processing Agreement. Such provisions include, for example, a list of recipient agencies eligible to receive end products, summary end product data schedules that contain a list of end products that may be sold in the State, a requirement that processors enter into a written agreement with distributors handling end products containing donated foods, and the allowed method(s) of end product sales implemented by the distributing agency.

In the proposed § 250.38(c), we would require that the In-State Processing Agreement contain specific provisions or attachments to assure compliance with requirements in 7 CFR part 250. Most of these provisions are included in current § 250.30(c)(5) and include, for example, assurance that the processor will meet processing yields for donated foods and substitution requirements, report donated food inventory activity and maintain inventories within approved levels, enter into a written agreement with distributors handling end products containing donated foods, credit recipient agencies for the value of all donated foods contained in end products, and obtain required audits.

In accordance with the proposed § 250.38(d), we propose to require that the Recipient Agency Processing Agreement contain the same provisions as an In-State Processing Agreement, to the extent that the distributing agency permits the recipient to perform activities normally performed by the distributing agency under an In-State Processing Agreement (*e.g.,* approval of end product data schedules or review of performance reports). However, a list of recipient agencies eligible to receive end products need not be included.

In the proposed § 250.38(e), we propose to prohibit a distributing or recipient agency, as appropriate, from extending or renewing an agreement when a processor has not complied with processing requirements. We propose to allow a distributing or recipient agency to immediately terminate an agreement in the event of such noncompliance.

10. Miscellaneous Provisions, § 250.39

In current § 250.30(q), FNS may waive any of the requirements in 7 CFR part 250 for the purpose of conducting demonstration projects to test program changes which might improve processing of donated foods. We propose to include this provision with minimal change in the proposed § 250.39(a).

In the proposed § 250.39(b), we propose to retain the requirement in current § 250.30(p) that the distributing agency develop and provide a processing manual or similar materials to processors and other parties to ensure sufficient guidance is given to processors and other parties to permit compliance with requirements for the processing of donated foods. Consistent with the current demonstration project, the distributing agency would be permitted to provide additional information relating to State-specific processing procedures upon request.

In the proposed § 250.39(c), we propose to clarify that guidance or information relating to the processing of donated foods is included on the FNS Web site or may otherwise be obtained from FNS. Such guidance and information includes program regulations and policies, the FNS Audit Guide, and the USDA National Processing Agreement.

III. Procedural Matters

A. Executive Order 12866 and 13563

Executive Orders 12866 and 13563 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility.

This proposed rule has been determined to be not significant and was not reviewed by the Office of Management and Budget (OMB) in conformance with Executive Order 12866.

B. Regulatory Impact Analysis

This rule has been designated as not significant by the Office of Management and Budget, therefore, no Regulatory Impact Analysis is required.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601–612) requires Agencies to analyze the impact of rulemaking on small entities and consider alternatives that would minimize any significant impacts on a substantial number of small entities. Pursuant to that review, the Administrator of FNS has certified that this rule would not have a significant impact on a substantial number of small entities.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local and tribal governments and the private sector. Under section 202 of the UMRA, the Department generally must prepare a written statement, including a cost benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures by State, local or Tribal governments, in the aggregate, or the private sector, of $146 million or more (when adjusted for inflation; GDP deflator source: Table 1.1.9 at *http://www.bea.gov/iTable*) in any one year. When such a statement is needed for a rule, Section 205 of the UMRA generally requires the Department to identify and consider a reasonable number of regulatory alternatives and adopt the most cost effective or least burdensome alternative that achieves the objectives of the rule.

This proposed rule does not contain Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, and Tribal governments or the private sector of $146 million or more in any one year. Thus, the rule is not subject to the requirements of sections 202 and 205 of the UMRA.

E. Executive Order 12372

The donation of foods in USDA food distribution and child nutrition programs is included in the Catalog of Federal Domestic Assistance under 10.555, 10.558, 10.559, 10.565, 10.567, and 10.569 is subject to Executive Order 12372, which requires intergovernmental consultation with State and local officials. (See 2 CFR chapter IV)

F. Federalism Summary Impact Statement

Executive Order 13132 requires Federal agencies to consider the impact of their regulatory actions on State and local governments. Where such actions have federalism implications, agencies are directed to provide a statement for inclusion in the preamble to the regulations describing the agency's considerations in terms of the three categories called for under Section (6)(b)(2)(B) of Executive Order 13121.

The Department has considered the impact of this rule on State and local governments and has determined that this rule does not have federalism implications. Therefore, under section 6(b) of the Executive Order, a federalism summary is not required.

G. Civil Rights Impact Analysis

FNS has reviewed this proposed rule in accordance with USDA Regulation 4300–4, ''Civil Rights Impact Analysis,'' to identify any major civil rights impacts the rule might have on program participants on the basis of age, race, color, national origin, sex or disability. After a careful review of the rule's intent and provisions, FNS has determined that this rule would not in any way limit or reduce the ability of participants to receive the benefits of donated foods in food distribution or child nutrition programs on the basis of an individual's or group's race, color, national origin, sex, age, or disability. FNS found no factors that would negatively and disproportionately affect any group of individuals.

H. Executive Order 13175

Executive Order 13175 requires Federal agencies to consult and coordinate with Tribes on a government-to-government basis on policies that have Tribal implications, including regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes, or on the distribution of power and responsibilities between the Federal Government and Indian Tribes. FNS consulted with Tribes on this proposed rule on November 19, 2014, however no concerns or comments were received. We are unaware of any current Tribal laws that could be in conflict with the final rule.

I. Paperwork Reduction Act

In accordance with the Paperwork Reduction Act of 1995, this notice invites the general public and other public agencies to comment on this proposed information collection. This collection is a revision of a currently approved collection, OMB#0584–0293.

Written comments must be received on or before March 6, 2017. Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions that were used; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on those who are to respond, including use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Comments will be accepted through the Federal eRulemaking Portal. Go to *http://www.regulations.gov,* and follow the online instructions for submitting comments electronically. Comments may also be sent to Kiley Larson, at the address listed in the **ADDRESSES** section of this preamble. Commenters are asked to separate their comments on the information collection requirements from their comments on the proposed rule.

Title: Food Distribution Forms.

OMB Number: 0584–0293.

Expiration Date: 11/30/2016.

Type of Request: Revision of a currently approved collection.

Abstract: This is a revision of an existing information collection based on this proposed rule, *Revisions and Clarifications in Requirements for the Processing of Donated Foods.* The rule proposes to add reporting requirements to the existing information collection associated with 7 CFR part 250, OMB Number 0584–0293 as follows:

New Reporting Requirements Associated With This Rulemaking

- § 250.37(c), Summary Performance Report. Multi-State processors submit a summary performance report to FNS. The summary performance report lists the complete donated food inventory at the beginning and end of the reporting month and the total donated food inventory by State and the national total. Approximately 110 respondents are expected to submit 12 summary performance reports per year. Each performance report is expected to take 1 hour to complete, for a total annual burden of 1320.00 hours.

- § 250.30(i), Agreements between Processors and Distributors. A processor providing end products containing donated foods to a distributor must enter into a written agreement with the distributor. The agreement must include the financial liability for the replacement value of donated foods, monthly end product sales reporting frequency, requirements under 250.11, and the applicable value pass through system. These agreements can be considered permanent, with amendments made as necessary. We estimate that 225 respondents will enter into an agreement in the first year and 5 will amend their agreements each year for the next 2 years, with 2.0 hours per response. The estimated annual reporting burden for this activity is 156.66 hours.

- § 250.33(a), End Product Data Schedules. Processors must submit end product data schedules, in a standard electronic form dictated by FNS for approval by FNS (for National Processing Agreements) or by the State distributing agency (for In-State Processing Agreements) for each new product that a processor wishes to provide or for a previously approved end product in which the ingredients have been altered. All products containing donated red meat and poultry must have their end product data schedules approved by USDA. The end product data schedule must include a description of the end product, the donated foods and other ingredients included in the end product, the quantity of the end product produced, and the processing yield of the donated food. We expect 131 processors to provide end product data schedules to FNS or the State distributing agency 12 times a year. The estimated time for each response is 0.5 hours, for a total of 786 burden hours.

In addition to the above reporting requirements, FNS has reviewed the information collection associated with 7 CFR part 250 and determined that several reporting and recordkeeping requirements require update due to changes in historical averages and/or duplicate counting. Those adjustments result in a net burden reduction of 5,177 hours. The table below summarizes the changes to the burden for OMB Number 0584–0293. For additional details, see the information collection material included in the docket to this rule.

Affected public	Estimated number of respondents	Number of responses per respondent	Total annual responses	Estimated total hours per response	Estimated total burden
Reporting					
State, Local, and Tribal Governments	20,866	11.13	232,319.24	0.25	58,679.50
Private For Profit	2,812	306.43	861,681.33	0.03	26,093.88
Private Not for Profit	1,600	2.03	3,240.00	0.19	614.50
Individual	611,200.00	1.96	1,199,200.00	0.25	304,400.00
Total Estimated Reporting Burden	636,478.00	3.61	2,296,440.57	0.17	389,787.88
Recordkeeping					
State, Local, and Tribal Governments	20,866.00	22.58	471,130.46	0.08	35,413.02
Private For Profit	2,812	367.86	1,034,429.00	0.06	62,671.72
Private Not for Profit	1,600	7.99	12,782.00	52.63	672,662.29
Individual	0	0.00	0.00	0.00	0.00
Total Estimated Recordkeeping Burden	25,278.00	60.07	1,518,341.46	0.51	770,747.03
Total of Reporting and Recordkeeping					
Reporting	636,478.00	3.61	2,296,440.57	0.17	389,787.88
Recordkeeping	25,278.00	60.07	1,518,341.46	0.51	770,747.03
Total	636,478.00	5.99	3,814,782.03	0.30	1,160,534.91

J. E-Government Act Compliance

The Department is committed to complying with the E-Government Act, to promote the use of the Internet and other information technologies to provide increased opportunities for citizen access to Government information and services, and for other purposes.

List of Subjects in 7 CFR Part 250

Administrative practice and procedure, Food assistance programs, Grant programs, Social programs, Reporting and recordkeeping requirements, Surplus agricultural commodities.

Accordingly, 7 CFR part 250 is proposed to be amended as follows:

PART 250—DONATION OF FOODS FOR USE IN THE UNITED STATES, ITS TERRITIORIES AND POSSESSIONS AND AREAS UNDER ITS JURISDICTION

■ 1. The authority citation for Part 250 continues to read as follows:

Authority: 5 U.S.C. 301; 7 U.S.C. 612c, 612c note, 1431, 1431b, 1431e, 1431 note, 1446a–1, 1859, 2014, 2025; 15 U.S.C. 713c; 22 U.S.C. 1922; 42 U.S.C. 1751, 1755, 1758, 1760, 1761, 1762a, 1766, 3030a, 5179, 5180.

■ 2. In § 250.2:

■ a. Remove definitions of *Contracting agency* and *Fee-for-service.*

■ b. Add definitions in alphabetical order for *Backhauling, Commingling, End product data schedule, In-State Processing Agreement, National Processing Agreement, Recipient Agency Processing Agreement, Replacement value,* and *State Participation Agreement.*

The revisions and additions read as follows:

§ 250.2 Definitions.

* * * * *

Backhauling means the delivery of donated foods to a processor for processing from a distributing or recipient agency's storage facility.

* * * * *

Commingling means the storage of donated foods together with commercially purchased foods.

* * * * *

End product data schedule means a processor's description of its processing of donated food into a finished end product, including the processing yield of donated food.

* * * * *

In-State Processing Agreement means a distributing agency's agreement with an in-State processor to process donated foods into finished end products for sale to eligible recipient agencies or for sale to the distributing agency.

* * * * *

National Processing Agreement means an agreement between FNS and a multi-State processor to process donated foods into end products for sale to distributing or recipient agencies.

* * * * *

Recipient Agency Processing Agreement means a recipient agency's agreement with a processor to process donated foods and to purchase the finished end products.

* * * * *

Replacement value means the price assigned by the Department to a donated food which must reflect the current price in the market to ensure compensation for donated foods lost in processing or other activities. The replacement value may be changed by the Department at any time.

* * * * *

State Participation Agreement means a distributing agency's agreement with a multi-State processor to permit the sale of finished end products produced under the processor's National Processing Agreement to eligible recipient agencies in the State or to directly purchase such finished end products.

* * * * *

■ 3. In § 250.11, revise paragraph (e) to read as follows:

§ 250.11 Delivery and receipt of donated food shipments.

* * * * *

(e) *Transfer of title.* In general, title to donated foods transfers to the distributing agency or recipient agency, as appropriate, upon acceptance of the donated foods at the time and place of delivery. Title to donated foods provided to a multi-State processor, in accordance with its National Processing Agreement, transfers to the distributing agency or recipient agency, as appropriate, upon acceptance of the finished end products at the time and

place of delivery. However, when a recipient agency has contracted with a distributor to act as an authorized agent, title to finished end products containing donated foods transfers to the recipient agency upon delivery and acceptance by the contracted distributor. Notwithstanding transfer of title, distributing and recipient agencies must ensure compliance with the requirements of this part in the distribution, control, and use of donated foods.

* * * * *

■ 4. In § 250.18, revise paragraph (b) to read as follows:

§ 250.18 Reporting requirements.

* * * * *

(b) *Processor performance.* Processors must submit performance reports and other supporting documentation, as required by the distributing agency or by FNS, in accordance with § 250.37(a), to ensure compliance with requirements in this part.

* * * * *

■ 5. In § 250.19, revise paragraph (a) to read as follows:

§ 250.19 Recordkeeping requirements.

(a) *Required records.* Distributing agencies, recipient agencies, processors, and other entities must maintain records of agreements and contracts, reports, audits, and claim actions, funds obtained as an incident of donated food distribution, and other records specifically required in this part or in other Departmental regulations, as applicable. In addition, distributing agencies must keep a record of the value of donated foods each of its school food authorities receives, in accordance with § 250.58(e), and records to demonstrate compliance with the professional standards for distributing agency directors established in § 235.11(g) of this chapter. Processors must also maintain records documenting the sale of end products to recipient agencies, including the sale of such end products by distributors, and must submit monthly performance reports, in accordance with Subpart C of this part and with any other recordkeeping requirements included in their agreements. Specific recordkeeping requirements relating to the use of donated foods in contracts with food service management companies are included in § 250.54. Failure of the distributing agency, recipient agency, processor, or other entity to comply with recordkeeping requirements must be considered prima facie evidence of improper distribution or loss of donated foods and may result in a claim against such party for the loss or misuse of donated foods, in accordance with § 250.16, or in other sanctions or corrective actions.

* * * * *

■ 6. Revise Subpart C to read as follows:

Subpart C—Processing of Donated Foods

Sec.

250.30 Processing of donated foods into end products.
250.31 Procurement requirements.
250.32 Protection of donated food value.
250.33 Ensuring processing yields of donated foods.
250.34 Substitution of donated foods.
250.35 Storage, food safety, quality control, and inventory management.
250.36 End product sales and crediting for the value of donated foods.
250.37 Reports, records, and reviews of processor performance.
250.38 Provisions of agreements.
250.39 Miscellaneous provisions.

Subpart C—Processing of Donated Foods

§ 250.30 Processing of donated foods into end products.

(a) *Purpose of processing donated foods.* Donated foods are most commonly provided to processors to process into approved end products for use in school lunch programs or other food services provided by recipient agencies. The ability to divert donated foods for processing provides recipient agencies with more options for using donated foods in their programs. For example, donated foods such as whole chickens or chicken parts may be processed into precooked grilled chicken strips for use in the National School Lunch Program. In some cases, donated foods are provided to processors to prepare meals or for repackaging. A processor's use of a commercial facility to repackage donated foods, or to use donated foods in the preparation of meals, is considered processing in this part.

(b) *Agreement requirement.* The processing of donated foods must be performed in accordance with an agreement between the processor and FNS, between the processor and the distributing agency, or, if allowed by the distributing agency, between the processor and a recipient agency or subdistributing agency. However, a processing agreement will not obligate any party to provide donated foods to a processor for processing. The agreements described below are required in addition to, not in lieu of, competitively procured contracts required in accordance with § 250.31. The processing agreement must be signed by an authorized individual for the processor. The different types of processing agreements are described in this section.

(c) *National Processing Agreement.* A multi-State processor must enter into a National Processing Agreement with FNS in order to process donated foods into end products in accordance with end product data schedules approved by FNS. FNS also holds and manages such processor's performance bond or letter of credit under its National Processing Agreement, in accordance with § 250.32. FNS does not itself procure or purchase end products under a National Processing Agreement. A multi-State processor must also enter into a State Participation Agreement with the distributing agency in order to sell nationally approved end products in the State, in accordance with paragraph (d) of this section.

(d) *State Participation Agreement.* The distributing agency must enter into a State Participation Agreement with a multi-State processor to permit the sale of end products produced under the processor's National Processing Agreement to eligible recipient agencies in the State or to directly purchase such end products. The distributing agency may include other State-specific processing requirements in its State Participation Agreement, such as the methods of end product sales permitted, in accordance with § 250.36, or the use of labels attesting to fulfillment of meal pattern requirements in child nutrition programs. The distributing agency must utilize the following criteria in its selection of processors with which it enters into agreements. These criteria will be reviewed by the appropriate FNS Regional Office during the management evaluation review of the distributing agency.

(1) The nutritional contribution provided by end products;

(2) The marketability or acceptability of end products;

(3) The means by which end products will be distributed;

(4) Price competitiveness of end products and processing yields of donated foods;

(5) Any applicable labeling requirements; and

(6) The processor's record of ethics and integrity, and capacity to meet regulatory requirements.

(e) *In-State Processing Agreement.* A distributing agency must enter into an In-State Processing Agreement with an in-State processor to process donated foods into finished end products, unless it permits recipient agencies to enter into Recipient Agency Processing Agreements for such purpose, in accordance with paragraph (f) of this section. Under an In-State Processing

Agreement, the distributing agency approves end product data schedules (except red meat and poultry) submitted by the processor, holds and manages the processor's performance bond or letter of credit, in accordance with § 250.32, and assures compliance with other processing requirements. The distributing agency may also purchase the finished end products for distribution to eligible recipient agencies in the State under an In-State Processing Agreement, or may permit recipient agencies to purchase such end products, in accordance with applicable procurement requirements. In the latter case, the In-State Processing Agreement is often called a ''master agreement.'' A distributing agency that procures end products on behalf of recipient agencies, or that limits recipient agencies' access to the procurement of specific end products through its master agreements, must utilize the following criteria in its selection of processors with which it enters into agreements. These criteria will be reviewed by the appropriate FNS Regional Office during the management evaluation review of the distributing agency:

(1) The nutritional contribution provided by end products;

(2) The marketability or acceptability of end products;

(3) The means by which end products will be distributed;

(4) Price competitiveness of end products and processing yields of donated foods;

(5) Any applicable labeling requirements; and

(6) The processor's record of ethics and integrity, and capacity to meet regulatory requirements.

(f) *Recipient Agency Processing Agreement.* The distributing agency may permit a recipient agency to enter into an agreement with an in-State processor to process donated foods and to purchase the finished end products in accordance with a Recipient Agency Processing Agreement. A recipient agency may also enter into a Recipient Agency Processing Agreement on behalf of other recipient agencies, in accordance with an agreement between the parties. The distributing agency may also delegate a recipient agency to approve end product data schedules or select nationally approved end product data schedules, review in-State processor performance reports, manage the performance bond or letter of credit of an in-State processor, and monitor other processing activities under a Recipient Agency Processing Agreement. All such activities must be performed in accordance with the requirements of this part. All Recipient Agency Processing Agreements must be reviewed and approved by the distributing agency. All recipient agencies must utilize the following criteria in its selection of processors with which it enters into agreements:

(1) The nutritional contribution provided by end products;

(2) The marketability or acceptability of end products;

(3) The means by which end products will be distributed;

(4) Price competitiveness of end products and processing yields of donated foods;

(5) Any applicable labeling requirements; and

(6) The processor's record of ethics and integrity, and capacity to meet regulatory requirements.

(g) *Ensuring acceptability of end products.* A distributing agency that procures end products on behalf of recipient agencies, or that otherwise limits recipient agencies' access to the procurement of specific end products, must provide for testing of end products to ensure their acceptability by recipient agencies, prior to entering into processing agreements. End products that have previously been tested, or that are otherwise determined to be acceptable, need not be tested. However, such a distributing agency must monitor product acceptability on an ongoing basis.

(h) *Prohibition against subcontracting.* A processor may not assign any processing activities under its processing agreement or subcontract to another entity to perform any aspect of processing, without the specific written consent of the other party to the agreement (*i.e.,* distributing or recipient agency, or FNS, as appropriate). The distributing agency may, for example, provide the required consent as part of its State Participation Agreement or In-State Processing Agreement with the processor.

(i) *Agreements between Processors and Distributors.* A processor providing end products containing donated foods to a distributor must enter into a written agreement with the distributor. The agreement must reference, at a minimum, the financial liability (*i.e.,* who must pay) for the replacement value of donated foods, not less than monthly end product sales reporting frequency, requirements under § 250.11, and the applicable value pass through system to ensure that the value of donated foods and finished end products are properly credited to recipient agencies. Distributing agencies can set additional requirements.

(j) *Duration of agreements.* An agreement between a distributing, or recipient agency and a processor may be up to five years in duration. National Processing Agreements are permanent. Amendments to any agreements may be made, as needed, with the concurrence of both parties to the agreement. Such amendments will be effective for the duration of the agreement, unless otherwise indicated.

§ 250.31 Procurement requirements.

(a) *Applicability of Federal procurement requirements.* Distributing and recipient agencies must comply with the requirements in 2 CFR part 200 and part 400, as applicable, in purchasing end products, distribution, or other processing services from processors. Distributing and recipient agencies may use procurement procedures that conform to applicable State or local laws and regulations, but must ensure compliance with the procurement requirements in 2 CFR parts 200 and 400, as applicable.

(b) *Required information in procurement documents.* In all procurements of processed end products containing USDA donated foods, procurement documents must include the following information:

(1) The price to be charged for the end product or other processing service;

(2) The method of end product sales that will be utilized and assurance that crediting for donated foods will be performed in accordance with the applicable requirements for such method of sales in § 250.36;

(3) The value of the donated food in the end products; and

(4) The location for the delivery of the end products.

§ 250.32 Protection of donated food value.

(a) *Performance bond or irrevocable letter of credit.* The processor must obtain a performance bond or an irrevocable letter of credit to protect the value of donated foods to be received for processing prior to the delivery of the donated foods to the processor. The processor must provide the performance bond or letter of credit to the distributing or recipient agency, in accordance with its In-State or Recipient Agency Processing Agreement. However, a multi-State processor must provide the performance bond or letter of credit to FNS, in accordance with its National Processing Agreement. For multi-State processors, the minimum amount of the performance bond or letter of credit must be sufficient to cover at least 75 percent of the value of donated foods in the processor's physical or book inventory, as determined annually and at the discretion of FNS for processors under

National Processing Agreements. For multi-state processors in their first year of participation in the processing program, the amount of the performance bond or letter of credit must be sufficient to cover 100 percent of the value of donated foods, as determined annually, and at the discretion of FNS. The surety company from which a bond is obtained must be listed in the most current Department of Treasury's Listing of Approved Sureties (Department Circular 570).

(b) *Calling in the performance bond or letter of credit.* The distributing or recipient agency must call in the performance bond or letter of credit whenever a processor's lack of compliance with this part, or with the terms of the In-State or Recipient Agency Processing Agreement, results in a loss of donated foods to a distributing or recipient agency and the processor fails to make restitution or respond to a claim action initiated to recover the loss. Similarly, FNS will call in the performance bond or letter of credit in the same circumstances, in accordance with National Processing Agreements, and will ensure that any monies recovered are reimbursed to distributing agencies for losses of entitlement foods.

§ 250.33 Ensuring processing yields of donated foods.

(a) *End product data schedules.* The processor must submit an end product data schedule, in a standard electronic format dictated by FNS, for approval before it may process donated foods into end products. For In-State Processing Agreements, the end product data schedule must be approved by the distributing agency and, for products containing donated red meat and poultry, the end product data schedule must also be approved by the Department. For National Processing Agreements, the end product data schedule must be approved by the Department. An end product data schedule must be submitted, and approved, for each new end product that a processor wishes to provide or for a previously approved end product in which the ingredients (or other pertinent information) have been altered. On the end product data schedule, the processor must describe its processing of donated food into an end product, including the following information:

(1) A description of the end product;

(2) The types and quantities of donated foods included;

(3) The types and quantities of other ingredients included;

(4) The quantity of end product produced; and

(5) The processing yield of donated food, which may be expressed as the quantity (pounds or cases) of donated food needed to produce a specific quantity of end product or as the percentage of raw donated food versus the quantity returned in the finished end product.

(b) *Processing yields of donated foods.* All end products must have a processing yield of donated foods associated with its production and this processing yield must be indicated on its end product data schedule. The processing yield options are limited to 100 percent yield, guaranteed yield, and standard yield.

(1) Under 100 percent yield, the processor must ensure that 100 percent of the raw donated food is returned in the finished end product. The processor must replace any processing loss of donated food with commercially purchased food of the same generic identity, of U.S. origin, and equal or better in all USDA procurement specifications than the donated food. The processor must demonstrate such replacement by reporting reductions in donated food inventories on performance reports by the amount of donated food contained in the finished end product rather than the amount that went into production. The Department may approve an exception if a processor experiences a significant manufacturing loss.

(2) Under guaranteed yield, the processor must ensure that a specific quantity of end product (*i.e.,* number of cases) will be produced from a specific quantity of donated food, as determined by the parties to the processing agreement, and, for In-State Processing Agreements, approved by the Department. If necessary, the processor must use commercially purchased food of the same generic identity, of U.S. origin, and equal or better in all USDA procurement specifications than the donated food to provide the guaranteed number of cases of end product to the distributing or recipient agency, as appropriate. The guaranteed yield must be indicated on the end product data schedule.

(3) Under standard yield, the processor must ensure that a specific quantity of end product (*i.e.,* number of cases), as determined by the Department, will be produced from a specific quantity of donated food. The established standard yield is higher than the yield the processor could achieve under normal commercial production and serves to reward those processors that can process donated foods most efficiently. If necessary, the processor must use commercially purchased food of the same generic identity, of U.S. origin, and equal or better in all USDA procurement specifications than the donated food to provide the number of cases required to meet the standard yield to the distributing or recipient agency, as appropriate. The standard yield must be indicated on the end product data schedule.

(c) *Compensation for loss of donated foods.* The processor must compensate the distributing or recipient agency, as appropriate, for the loss of donated foods, or for the loss of commercially purchased foods substituted for donated foods. Such loss may occur, for example, if the processor fails to meet the required processing yield of donated food or fails to produce end products that meet required specifications, if donated foods are spoiled, damaged, or otherwise adulterated at a processing facility, or if end products are improperly distributed. To compensate for such loss, the processor must:

(1) Replace the lost donated food or commercial substitute with commercially purchased food of the same generic identity, of U.S. origin, and equal or better in all USDA procurement specifications than the donated food; or

(2) Return end products that are wholesome but do not meet required specifications to production for processing into the requisite quantity of end products that meet the required specifications (commonly called rework products); or

(3) If the purchase of replacement foods or the reprocessing of products that do not meet the required specifications is not feasible, the processor may, with FNS, distributing agency, or recipient agency approval, dependent on which entity maintains the agreement with the processor, pay the distributing or recipient agency, as appropriate, for the replacement value of the donated food or commercial substitute.

(d) *Credit for sale of by-products.* The processor must credit the distributing or recipient agency, as appropriate, for the sale of any by-products produced in the processing of donated foods. The processor must credit for the net value of such sale, or the market value of the by-products, after subtraction of any documented expenses incurred in preparing the by-product for sale. Crediting must be achieved through invoice reduction or by another means of crediting.

(e) *Labeling requirements.* The processor must ensure that all end product labels meet Federal labeling

requirements. A processor that claims end products fulfill meal pattern requirements in child nutrition programs must comply with the procedures required for approval of labels of such end products.

§ 250.34 Substitution of donated foods.

(a) *Substitution of commercially purchased foods for donated foods.* Unless its agreement specifically stipulates that the donated foods must be used in processing, the processor may substitute commercially purchased foods for donated foods that are delivered to it from a USDA vendor. The commercially purchased food must be of the same generic identity, of U.S. origin, and equal or better in all USDA procurement specifications than the donated food. Commercially purchased beef, pork, or poultry must meet the same specifications as donated product, including inspection, grading, testing, and humane handling standards and must be approved by the Department in advance of substitution. The processor may choose to make the substitution before the actual receipt of the donated food. However, the processor assumes all risk and liability if, due to changing market conditions or other reasons, the Department's purchase of donated foods and their delivery to the processor is not feasible. Commercially purchased food substituted for donated food must meet the same processing yield requirements in § 250.33 that would be required for the donated food.

(b) *Prohibition against substitution and other requirements for backhauled donated foods.* The processor may not substitute or commingle donated foods that are backhauled to it from a distributing or recipient agency's storage facility. The processor must process backhauled donated foods into end products for sale and delivery to the distributing or recipient agency that provided them and not to any other agency. Distributing or recipient agencies must purchase end products utilizing donated foods backhauled to their contracted processor. The processor may not provide payment for backhauled donated foods in lieu of processing.

(c) *Grading requirements.* The processing of donated beef, pork, and poultry must occur under Federal acceptance service grading, which is conducted by the Department's Agricultural Marketing Service. Federal acceptance service grading ensures that processing is conducted in compliance with substitution and yield requirements and in conformance with the end product data schedule. The processor is responsible for paying the cost of acceptance service grading. The processor must maintain grading certificates and other records necessary to document compliance with requirements for substitution of donated foods and with other requirements of this subpart.

(d) *Waiver of grading requirements.* The distributing agency may waive the grading requirement for donated beef, pork or poultry in accordance with one of the conditions listed in this paragraph (d). However, grading may only be waived on a case by case basis (*e.g.,* for a particular production run); the distributing agency may not approve a blanket waiver of the requirement. Additionally, a waiver may only be granted if a processor's past performance indicates that the quality of the end product will not be adversely affected. The conditions for granting a waiver include:

(1) That even with ample notification time, the processor cannot secure the services of a grader;

(2) The cost of the grader's service in relation to the value of donated beef, pork or poultry being processed would be excessive; or

(3) The distributing or recipient agency's urgent need for the product leaves insufficient time to secure the services of a grader.

(e) *Use of substituted donated foods.* The processor may use donated foods that have been substituted with commercially purchased foods in other processing activities conducted at its facilities.

§ 250.35 Storage, food safety, quality control, and inventory management.

(a) *Storage and quality control.* The processor must ensure the safe and effective storage of donated foods, including compliance with the general storage requirements in § 250.12, and must maintain an effective quality control system at its processing facilities. The processor must maintain documentation to verify the effectiveness of its quality control system and must provide such documentation upon request.

(b) *Food safety requirements.* The processor must ensure that all processing of donated foods is conducted in compliance with all Federal, State, and local requirements relative to food safety.

(c) *Commingling of donated foods and commercially purchased foods.* The processor may commingle donated foods and commercially purchased foods, unless the processing agreement specifically stipulates that the donated foods must be used in processing, and not substituted, or the donated foods have been backhauled from a recipient agency. However, such commingling must be performed in a manner that ensures the safe and efficient use of donated foods, as well as compliance with substitution requirements in § 250.34 and with reporting of donated food inventories on performance reports, as required in § 250.37. The processor must also ensure that commingling of processed end products and other food products, either at its facility or at the facility of a commercial distributor, ensures the sale and delivery of end products that meet the processing requirements in this subpart—*e.g.,* by affixing the applicable USDA certification stamp to the exterior shipping containers of such end products.

(d) *Limitation on donated food inventories.* Inventories of donated food at processors may not be in excess of a six-month supply, based on an average amount of donated foods utilized for that period, unless a higher level has been specifically approved by the distributing agency on the basis of a written justification submitted by the processor. Distributing agencies are not permitted to submit food orders for processors reporting no sales activity during the prior year's contract period unless documentation is submitted by the processor which outlines specific plans for donated food drawdown, product promotion, or sales expansion. When inventories are determined to be excessive for a State or processor, *e.g.,* more than six months or exceeding the established protection, FNS may require the transfer of inventory and/or entitlement to another State or processor to ensure utilization prior to the end of the school year.

(e) *Reconciliation of excess donated food inventories.* If, at the end of the school year, the processor has donated food inventories in excess of a six-month supply, the distributing agency may, in accordance with paragraph (d) of this section, permit the processor to carry over such excess inventory into the next year of its agreement, if it determines that the processor may efficiently store and process such quantity of donated foods. The distributing agency may also direct the processor to transfer such donated foods to other recipient agencies, or to transfer them to other distributing agencies, in accordance with § 250.12(e). However, if these actions are not practical, the distributing agency must require the processor to pay it for the donated foods held in excess of allowed levels at the replacement value of the donated foods.

(f) *Disposition of donated food inventories upon agreement*

termination. When an agreement terminates, and is not extended or renewed, the processor must take one of the actions indicated in this paragraph (f) with respect to remaining donated food inventories, as directed by the distributing agency or recipient agency, as appropriate. The processor must pay the cost of transporting any donated foods when the agreement is terminated at the processor's request or as a result of the processor's failure to comply with the requirements of this part. The processor must:

(1) Return the donated foods, or commercially purchased foods that meet the substitution requirements in § 250.34, to the distributing or recipient agency, as appropriate; or

(2) Transfer the donated foods, or commercially purchased foods that meet the substitution requirements in § 250.34, to another distributing or recipient agency with which it has a processing agreement; or

(3) If returning or transferring the donated foods, or commercially purchased foods that meet the substitution requirements in § 250.34, is not feasible, the processor may, with FNS approval, pay the distributing or recipient agency, as appropriate, for the donated foods, at the contract value or replacement value of the donated foods, whichever is higher.

§ 250.36 End product sales and crediting for the value of donated foods.

(a) *Methods of end product sales.* To ensure that the distributing or recipient agency, as appropriate, receives credit for the value of donated foods contained in end products, the sale of end products must be performed using one of the systems of end product sales described in this section. All systems of sales utilized must provide clear documentation of crediting for the value of the donated foods contained in the end products.

(b) *Refund or rebate.* Under this system, the processor sells end products to the distributing or recipient agency, as appropriate, at the commercial, or gross, price and must provide a refund or rebate for the value of the donated food contained in the end products. The processor may also deliver end products to a commercial distributor for sale to distributing or recipient agencies under this system. In both cases, the processor must provide a refund to the appropriate agency within 30 days of receiving a request for a refund from that agency. The refund request must be in writing, which may be transmitted via email or other electronic submission.

(c) *Direct discount.* Under this system, the processor must sell end products to the distributing or recipient agency, as appropriate, at a net price that provides a discount from the commercial case price for the value of donated food contained in the end products.

(d) *Indirect discount.* Under this system, the processor delivers end products to a commercial distributor, which must sell the end products to an eligible distributing or recipient agency, as appropriate, at a net price that provides a discount from the commercial case price for the value of donated food contained in the end products. The processor must require the distributor to notify it of such sales, at least on a monthly basis, through automated sales reports or other electronic or written submission. The processor then compensates the distributor for the discount provided for the value of the donated food in its sale of end products.

(e) *Fee-for-service.* Under this system, the processor must sell end products to the distributing or recipient agency, as appropriate, at a fee-for-service, which includes all costs to produce the end products not including the value of the donated food used in production. The processor must identify any charge for delivery of end products separately from the fee-for-service on its invoice. If the processor provides end products sold under fee-for-service to a distributor for delivery to the distributing or recipient agency, the processor must identify the distributor's delivery charge separately from the fee-for-service on its invoice to the appropriate agency or may permit the distributor to bill the agency separately for the delivery of end products. When the recipient agency procures storage and distribution of processed end products separately from the processing of donated foods, the recipient agency may provide the distributor written approval to act as the recipient agency's authorized agent for the total case price (*i.e.,* including the fee-for-service and the delivery charge). The processor must require that the distributor notify it of such sales, at least on a monthly basis, through automated sales reports, email, or other electronic or written submission.

(f) *Approved alternative method.* The processor or distributor may sell end products under an alternative method approved by FNS and the distributing agency that ensures crediting for the value of donated foods contained in the end products.

(g) *Donated food value used in crediting.* In crediting for the value of donated foods in end product sales, the contract value of the donated foods, as defined in § 250.2, must be used.

(h) *Ensuring sale and delivery of end products to eligible recipient agencies.* In order to ensure the sale of end products to eligible recipient agencies, the distributing agency must provide the processor with a list of recipient agencies eligible to purchase end products, along with the quantity of raw donated food that is to be delivered to the processor for processing on behalf of each recipient agency. In order to ensure that the distributor sells end products only to eligible recipient agencies, the processor must provide the distributor with a list of eligible recipient agencies and either:

(1) The quantities of approved end products that each recipient agency is eligible to receive; or

(2) The quantity of donated food allocated to each recipient agency and the raw donated food (pounds or cases) needed per case of each approved end product.

§ 250.37 Reports, records, and reviews of processor performance.

(a) *Performance reports.* The processor must submit a performance report to the distributing agency (or to the recipient agency, in accordance with a Recipient Agency Processing Agreement) on a monthly basis, which must include the information listed in this paragraph (a). Performance reports must be submitted not later than 30 days after the end of the reporting period; however, the final (June) performance report must be submitted within 60 days of the end of the reporting period. The performance report must include the following information for the reporting period, with year-to-date totals:

(1) A list of all recipient agencies purchasing end products;

(2) The quantity of donated foods in inventory at the beginning of the reporting period;

(3) The quantity of donated foods received;

(4) The quantity of donated foods transferred to the processor from another entity, or transferred by the processor to another entity;

(5) The quantity of donated foods losses;

(6) The quantity of end products delivered to each eligible recipient agency;

(7) The quantity of donated foods remaining at the end of the reporting period;

(8) A certification statement that sufficient donated foods are in inventory or on order to account for the quantities needed for production of end products;

(9) Grading certificates, as applicable; and

(10) Other supporting documentation, as required by the distributing agency or recipient agency.

(b) *Reporting reductions in donated food inventories.* The processor must report reductions in donated food inventories on performance reports only after sales of end products have been made, or after sales of end products through distributors have been documented. Documentation of distributor sales must be through the distributing or recipient agency's request for a refund (under a refund or rebate system) or through receipt of the distributor's automated sales reports or other electronic or written reports submitted to the processor (under an indirect discount system or under a fee-for-service system).

(c) *Summary performance report.* Along with the submission of performance reports to the distributing agency, a multi-State processor must submit a summary performance report to FNS, on a monthly basis and in a format established by FNS, in accordance with its National Processing Agreement. The summary report must include an accounting of the processor's national inventory of donated foods, including the information listed in this paragraph (c). The report must be submitted not later than 30 days after the end of the reporting period; however, the final performance report must be submitted within 60 days of the end of the reporting period. The summary performance report must include the following information for the reporting period:

(1) The total donated food inventory by State and the national total at the beginning of the reporting period;

(2) The total quantity of donated food received by State, with year-to-date totals, and the national total of donated food received;

(3) The total quantity of donated food reduced from inventory by State, with year-to-date totals, and the national total of donated foods reduced from inventory; and

(4) The total quantity of donated foods remaining in inventory by State, and the national total, at the end of the reporting period.

(d) *Recordkeeping requirements for processors.* The processor must maintain the following records relating to the processing of donated foods:

(1) End product data schedules and summary end product data schedules, as applicable;

(2) Receipt of donated foods shipments;

(3) Production, sale, and delivery of end products, including sales through distributors;

(4) All agreements with distributors;

(5) Remittance of refunds, invoices, or other records that assure crediting for donated foods in end products and for sale of byproducts;

(6) Documentation of Federal or State inspection of processing facilities, as appropriate, and of the maintenance of an effective quality control system;

(7) Documentation of substitution of commercial foods for donated foods, including grading certificates, as applicable;

(8) Waivers of grading requirements, as applicable; and

(9) Required reports.

(e) *Recordkeeping requirements for the distributing agency.* The distributing agency must maintain the following records relating to the processing of donated foods:

(1) In-State Processing Agreements and State Participation Agreements;

(2) End product data schedules or summary end product data schedules, as applicable;

(3) Performance reports;

(4) Grading certificates, as applicable;

(5) Documentation that supports information on the performance report, as required by the distributing agency (*e.g.,* sales invoices or copies of refund payments);

(6) Copies of audits of in-State processors and documentation of the correction of any deficiencies identified in such audits;

(7) The receipt of end products, as applicable; and

(8) Procurement documents, as applicable.

(f) *Recordkeeping requirements for the recipient agency.* The recipient agency must maintain the following records relating to the processing of donated foods:

(1) The receipt of end products purchased from processors or distributors;

(2) Crediting for the value of donated foods contained in end products;

(3) Recipient Agency Processing Agreements, as applicable, and, in accordance with such agreements, other records included in paragraph (e) of this section, if not retained by the distributing agency; and

(4) Procurement documents, as applicable.

(g) *Review requirements for the distributing agency.* The distributing agency must review performance reports and other records that it must maintain, in accordance with the requirements in paragraph (e) of this section, to ensure that the processor:

(1) Receives donated food shipments;

(2) Delivers end products to eligible recipient agencies, in the types and quantities for which they are eligible;

(3) Meets the required processing yields for donated foods; and

(4) Accurately reports donated food inventory activity and maintains inventories within approved levels.

§ 250.38 Provisions of agreements.

(a) *National Processing Agreement.* A National Processing Agreement includes provisions to ensure that a multi-State processor complies with all of the applicable requirements in this part relating to the processing of donated foods.

(b) *Required provisions for State Participation Agreement.* A State Participation Agreement with a multi-State processor must include the following provisions:

(1) Contact information for all appropriate parties to the agreement;

(2) The effective dates of the agreement;

(3) A list of recipient agencies eligible to receive end products;

(4) Summary end product data schedules, with end products that may be sold in the State;

(5) Assurance that the processor will not substitute or commingle backhauled donated foods and will provide end products processed from such donated foods only to the distributing or recipient agency from which the foods were received;

(6) Any applicable labeling requirements;

(7) Other processing requirements implemented by the distributing agency, such as the specific method(s) of end product sales permitted;

(8) A statement that the agreement may be terminated by either party upon 30 days' written notice;

(9) A statement that the agreement may be terminated immediately if the processor has not complied with its terms and conditions; and

(10) A statement requiring the processor to enter into an agreement with any and all distributors delivering processed end products to recipient agencies that ensures adequate data sharing, reporting, and crediting of donated foods, in accordance with § 250.30(i).

(c) *Required provisions of the In-State Processing Agreement.* An In-State Processing Agreement must include the following provisions or attachments:

(1) Contact information for all appropriate parties to the agreement;

(2) The effective dates of the agreement;

(3) A list of recipient agencies eligible to receive end products, as applicable;

(4) In the event that subcontracting is allowed, the specific activities that will be performed under subcontracts;

(5) Assurance that the processor will provide a performance bond or irrevocable letter of credit to protect the value of donated foods it is expected to maintain in inventory, in accordance with § 250.32;

(6) End product data schedules for all end products, with all required information, in accordance with § 250.33(a);

(7) Assurance that the processor will meet processing yields for donated foods, in accordance with § 250.33;

(8) Assurance that the processor will compensate the distributing or recipient agency, as appropriate, for any loss of donated foods, in accordance with § 250.33(c);

(9) Any applicable labeling requirements;

(10) Assurance that the processor will meet requirements for the substitution of commercially purchased foods for donated foods, including grading requirements, in accordance with § 250.34;

(11) Assurance that the processor will not substitute or commingle backhauled donated foods and will provide end products processed from such donated foods only to the recipient agency from which the foods were received, as applicable;

(12) Assurance that the processor will provide for the safe and effective storage of donated foods, meet inspection requirements, and maintain an effective quality control system at its processing facilities;

(13) Assurance that the processor will report donated food inventory activity and maintain inventories within approved levels;

(14) Assurance that the processor will return, transfer, or pay for, donated food inventories remaining upon termination of the agreement, in accordance with § 250.35(f);

(15) The specific method(s) of end product sales permitted, in accordance with § 250.36;

(16) Assurance that the processor will credit recipient agencies for the value of all donated foods, in accordance with § 250.36;

(17) Assurance that the processor will submit performance reports and meet other reporting and recordkeeping requirements, in accordance with § 250.37;

(18) Assurance that the processor will obtain independent CPA audits and will correct any deficiencies identified in such audits, in accordance with § 250.20;

(19) A statement that the distributing agency, subdistributing agency, or recipient agency, the Comptroller General, the Department of Agriculture, or their duly authorized representatives, may perform on-site reviews of the processor's operation to ensure that all activities relating to donated foods are performed in accordance with the requirements in 7 CFR part 250;

(20) A statement that the agreement may be terminated by either party upon 30 days' written notice;

(21) A statement that the agreement may be terminated immediately if the processor has not complied with its terms and conditions;

(22) A statement that extensions or renewals of the agreement, if applicable, are contingent upon the fulfillment of all agreement provisions; and

(23) A statement requiring the processor to enter into an agreement with any and all distributors delivering processed end products to recipient agencies that ensures adequate data sharing, reporting, and crediting of donated foods, in accordance with § 250.30(i).

(d) *Required provisions for Recipient Agency Processing Agreement.* The Recipient Agency Processing Agreement must contain the same provisions as an In-State Processing Agreement, to the extent that the distributing agency permits the recipient agency to perform activities normally performed by the distributing agency under an In-State Processing Agreement (*e.g.,* approval of end product data schedules, review of performance reports, or management of the performance bond). However, a list of recipient agencies eligible to receive end products need not be included.

(e) *Noncompliance with processing requirements.* If the processor has not complied with processing requirements, the distributing or recipient agency, as appropriate, must not extend or renew the agreement and may immediately terminate it.

§ 250.39 Miscellaneous provisions.

(a) *Waiver of processing requirements.* The Food and Nutrition Service may waive any of the requirements contained in this part for the purpose of conducting demonstration projects to test program changes designed to improve the processing of donated foods.

(b) *Processing activity guidance.* Distributing agencies must develop and provide a processing manual or similar procedural material for guidance to contracting agencies, recipient agencies, and processors. Distributing agencies must revise these materials as necessary to reflect policy and regulatory changes. This guidance material must be provided to contracting agencies, recipient agencies, and processors at the time of the approval of the initial agreement by the distributing agency, when there have been regulatory or policy changes which necessitate changes in the guidance materials, and upon request. The manual must include, at a minimum, statements of the distributing agency's policies and procedures regarding:

(1) Contract approval;

(2) Monitoring and review of processing activities;

(3) Recordkeeping and reporting requirements;

(4) Inventory controls; and

(5) Refund applications.

(c) *Guidance or information.* Guidance or information relating to the processing of donated foods is included on the FNS Web site or may otherwise be obtained from FNS.

Dated: December 23, 2016.

Richard Lucas,

Acting Administrator, Food and Nutrition Service.

[FR Doc. 2016–31561 Filed 1–4–17; 8:45 am]

BILLING CODE 3410–30–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–6928; Directorate Identifier 2016–SW–018–AD]

RIN 2120–AA64

Airworthiness Directives; Airbus Helicopters Deutschland GmbH Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for Airbus Helicopters Deutschland GmbH Helicopters (Airbus Helicopters) Model MBB–BK 117 C–2 and MBB–BK 117 D–2 helicopters. This proposed AD would require installing rivets to the air inlet cover rings (rings). This proposed AD is prompted by reports of rings detaching. The actions of this proposed AD are intended to prevent the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by March 6, 2017.

ADDRESSES: You may send comments by any of the following methods:

• *Federal eRulemaking Docket:* Go to *http://www.regulations.gov.* Follow the

online instructions for sending your comments electronically.

- *Fax:* 202–493–2251.
- *Mail:* Send comments to the U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590–0001.
- *Hand Delivery:* Deliver to the ''Mail'' address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–6928; or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the European Aviation Safety Agency (EASA) AD, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (telephone 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

For service information identified in this proposed rule, contact Airbus Helicopters, 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone (972) 641–0000 or (800) 232–0323; fax (972) 641–3775; or at *http://www.airbushelicopters.com/techpub.* You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N–321, Fort Worth, TX 76177.

FOR FURTHER INFORMATION CONTACT: Matt Fuller, Senior Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone (817) 222–5110; email *matthew.fuller@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

We will file in the docket all comments that we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

Discussion

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD No. 2016–0001, dated January 4, 2016, to correct an unsafe condition for Airbus Helicopters Model MBB–BK 117 C–2, Model MBB–BK117 C–2e, Model MBB–BK117 D–2, and MBB–BK117 D–2m helicopters. EASA advises that a ring detached and got stuck between the air inlet and the cyclic stick on a Model MBB–BK117 C–2 helicopter, restricting the cyclic stick's range of movement. According to EASA, an inspection on another helicopter found a second loose cover ring. EASA states that this condition, if not corrected, could affect the cyclic stick's range of movement, possibly resulting in degraded control of the helicopter. The EASA AD consequently requires inspections and reinforcement of the rings' installation.

Determination

These helicopters have been approved by the aviation authority of Germany and are approved for operation in the United States. Pursuant to our bilateral agreement with Germany, EASA, its technical representative, has notified us of the unsafe condition described in its AD. We are proposing this AD because we evaluated all known relevant information and determined that an unsafe condition is likely to exist or develop on other products of the same type designs.

Related Service Information Under 1 CFR Part 51

We reviewed Airbus Helicopters Alert Service Bulletin (ASB) MBB–BK117 C–2–21A–011 for Model MBB–BK 117 C–2 and Model MBB–BK117 C–2e helicopters and ASB MBB–BK117 D–2–21A–004 for Model MBB–BK 117 D–2 and Model MBB–BK 117 D–2m helicopters. Both ASBs are Revision 0 and dated November 16, 2015. This service information introduces an improved attachment method for the ring using rivets. The ASBs specify inspecting the air inlet to determine whether the ring is loose, and then gluing and riveting the ring to the air inlet at different timeframes, depending on whether it is loose.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Proposed AD Requirements

This proposed AD would require within 100 hours time-in-service (TIS), manually inspecting each ring to determine if it is loose. If the ring is loose, this proposed AD would require gluing and riveting the ring on the air inlet. If the ring is not loose, this proposed AD would require, within 400 hours TIS, manually inspecting the ring again to determine if it is loose. If the ring is loose, this proposed AD would require gluing and riveting the ring on the air inlet. If the ring is not loose, this proposed AD would require riveting the ring on the air inlet.

After the effective date of this AD, this proposed AD would prohibit installing an air inlet P/N B212M20C1005 on any helicopter unless the ring has been riveted to the air inlet in accordance with the requirements of this proposed AD.

Differences Between This Proposed AD and the EASA AD

The EASA AD applies to Model MBB–BK117 D–2m helicopters. This proposed AD would not because this model does not have an FAA type certificate. The EASA AD requires compliance for Model MBB–BK117 D–2 helicopters within 400 hours TIS, while this proposed AD would require compliance within 100 hours TIS. The EASA AD requires marking the air inlet with the applicable ASB once it is glued and riveted, while this proposed AD would not.

Costs of Compliance

We estimate that this proposed AD would affect 141 helicopters of U.S. Registry and that labor costs would average $85 per work-hour. Based on these estimates, we expect the following costs:

Manually inspecting the left and right air inlet cover rings would require a half work-hour for a labor cost of $43 per helicopter. No parts would be needed, so the U.S. fleet cost would total $6,063.

Riveting the rings would require 2 work-hours for a labor cost of $170 per helicopter. The cost for parts would be minimal for a U.S. fleet cost of $23,970.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. ''Subtitle VII: Aviation Programs,'' describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in ''Subtitle VII, Part A, Subpart III, Section 44701: General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed, I certify this proposed regulation:

1. Is not a ''significant regulatory action'' under Executive Order 12866;

2. Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

3. Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Airbus Helicopters Deutschland GmbH Helicopters: Docket No. FAA–2016–6928; Directorate Identifier 2016–SW–018–AD.

(a) Applicability

This AD applies to Airbus Helicopters Deutschland GmbH Helicopters Model MBB–BK 117C–2 (including configuration C–2e) helicopters, serial number 9004 through 9725, and Model MBB–BK 117D–2 helicopters, serial number 20003 through 20045, certificated in any category, with an air inlet part number (P/N) B212M20C1005 installed.

(b) Unsafe Condition

This AD defines the unsafe condition as a detached air inlet cover ring (ring), which could become stuck between the air inlet and the cyclic stick, restricting movement of the cyclic stick. This condition could result in loss of helicopter control.

(c) Comments Due Date

We must receive comments by March 6, 2017.

(d) Compliance

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

(e) Required Actions

(1) Within 100 hours time-in-service (TIS), manually inspect each ring to determine if it is loose. If a ring is loose, before further flight, glue the ring on the air inlet using an adhesive (CM 687 or CM 6044 or equivalent) as shown in Figure 1 of Airbus Helicopters Alert Service Bulletin (ASB) MBB–BK117 C–2–21A–011, Revision 0, dated November 16, 2015 (ASB C–2–21A–011), or ASB MBB–BK117 D–2–21A–004, Revision 0, dated November 16, 2015 (ASB D–2–21A–004), as applicable to your model helicopter. Rivet the ring to the air inlet in accordance with the Accomplishment Instructions, paragraphs 3.B.4.2 through 3.B.4.4 of ASB C–2–21A–011 or paragraphs 3.B.3.2 through 3.B.3.4 of ASB D–2–21A–004.

(2) If a ring is not loose, within 400 hours TIS:

(i) Manually inspect the ring to determine if it is loose. If the ring is loose, before further flight, glue the ring on the air inlet using an adhesive (CM 687 or CM 6044 or equivalent) as shown in Figure 1 of ASB C–2–21A–011 or ASB D–2–21A–004.

(ii) Rivet the ring to the air inlet in accordance with the Accomplishment Instructions, paragraphs 3.B.3.2 through 3.B.3.4 of ASB C–2–21A–011 or paragraphs 3.B.2.2 through 3.B.2.4 of ASB D–2–21A–004.

(3) After the effective date of this AD, do not install an air inlet P/N B212M20C1005 on any helicopter unless the ring has been riveted to the air inlet in accordance with the requirements of this AD.

(f) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Safety Management Group, FAA, may approve AMOCs for this AD. Send your proposal to: Matt Fuller, Senior Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone (817) 222–5110; email *9-ASW-FTW-AMOC-Requests@faa.gov.*

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office before operating any aircraft complying with this AD through an AMOC.

(g) Additional Information

The subject of this AD is addressed in European Aviation Safety Agency (EASA) AD No. 2016–0001, dated January 4, 2016. You may view the EASA AD on the Internet at *http://www.regulations.gov* in the AD Docket.

(h) Subject

Joint Aircraft Service Component (JASC) Code: 2150, Cabin Cooling System.

Issued in Fort Worth, Texas, on December 21, 2016.

Lance T. Gant,

Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. 2016–31865 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–9523; Directorate Identifier 2016–NM–134–AD]

RIN 2120–AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede Airworthiness Directive (AD) 2014–12–13, which applies to all The Boeing Company Model 737–100, –200, –200C, –300, –400, and –500 series airplanes. AD 2014–12–13 currently requires repetitive inspections for cracking of the main landing gear (MLG) beam, and the

rear spar upper chord and rear spar web; and repair if necessary. Since we issued AD 2014–12–13, we received reports of additional cracking in the inspar upper skin, rear spar web and rear spar upper chord. This proposed AD would expand the inspection area and add related investigative and corrective actions if necessary. We are proposing this AD to address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by February 21, 2017.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110–SK57, Seal Beach, CA 90740; telephone 562–797–1717; Internet *https://www.myboeingfleet.com.* You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221. It is also available on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9523.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9523; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Payman Soltani, Aerospace Engineer, Airframe Branch, ANM–120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712–4137; phone: 562–627–5313; fax: 562–627–5210; email: *payman.soltani@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include ''Docket No. FAA–2016–9523; Directorate Identifier 2016–NM–134–AD'' at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to *http://www.regulations.gov,* including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

On June 6, 2014, we issued AD 2014–12–13, Amendment 39–17874 (79 FR 39300, July 10, 2014) (''AD 2014–12–13''), for all The Boeing Company Model 737–100, –200, –200C, –300, –400, and –500 series airplanes. AD 2014–12–13 requires repetitive inspections for cracking of the aft support fitting for the MLG beam, the rear spar upper chord and rear spar web in the area of rear spar station (RSS) 224.14; and repair if necessary. AD 2014–12–13 resulted from reports of cracks found in the aft support fitting, the rear spar upper chord, and the rear spar web. We issued AD 2014–12–13 to detect and correct cracking of the aft support fitting for the MLG beam, the rear spar upper chord and rear spar web in the area of RSS 224.14, which could grow and result in a fuel leak and possible fire.

Other Related Rulemaking

On October 11, 2015, we issued AD 2015–21–08, Amendment 39–18301 (80 FR 65921, October 28, 2015) (''AD 2015–21–08''), for certain The Boeing Company Model 737–100, –200, –200C, –300, –400, and –500 series airplanes. AD 2015–21–08 was prompted by a report that an operator discovered a crack in a certain section of the inspar upper skin, just forward of the rear spar on the right wing. AD 2015–21–08 requires repetitive eddy current inspections for any cracking in the inspar upper skin, and related investigative and corrective actions if necessary. We issued AD 2015–21–08 to detect and correct any cracking in the inspar upper skin and rear spar upper chord, which could result in the inability of the structure to carry limit load, or result in a fuel leak, which could prevent continued safe flight and landing.

Actions Since AD 2014–12–13 and 2015–21–08 Were Issued

Since we issued AD 2014–12–13 and AD 2015–21–08, an operator discovered a 2.375-inch-long crack in the inspar upper skin at wing buttock line (WBL) 157, just forward of the rear spar on the right wing and adjacent to the inspection area specified in Boeing Special Attention Service Bulletin 737–57–1318, dated May 15, 2013 (the source of service information for the actions required by AD 2014–12–13). Two additional smaller cracks were found in the skin at two holes common to the rear spar in the same area. Subsequent inspections revealed that the right rear spar upper chord was almost completely severed and the left rear spar chord was completely severed. Rear spar web cracks were also noted on both wings. The affected airplane had accumulated 51,548 total flight cycles.

After the initial report of the inspar upper skin crack, additional reports of inspar upper skin cracking were found in the same area. Inspar upper skin cracking at this location is the subject of AD 2015–21–08, which correlates with Boeing Alert Service Bulletin 737–57A1326, dated September 22, 2015; and Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016. Although skin cracking is addressed outside of Boeing Special Attention Service Bulletin 737–57–1318, dated May 15, 2013, analysis shows that rear spar upper chord cracking can negatively influence the inspar upper skin cracking condition. In addition to influencing skin cracking, rear spar upper chord cracking can also influence cracking at other mating structures.

In addition, since Boeing Alert Service Bulletin 737–57A1318, dated May 15, 2013, has been issued, multiple operators have also reported cracking in the MLG beam forward support fitting, which was found while doing repairs to address cracked chords. Therefore, the MLG beam forward support fitting has been added to the inspection area, and the inspection threshold and intervals have been shortened, as specified in Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016. The service information describes procedures for repetitive high frequency eddy current (HFEC) open hole inspections for any cracking in the forward support fitting, the aft support fitting, the rear spar upper chord, and the rear spar web at the 12 fastener holes (locations 1–12). The service information also describes the option of HFEC open hole inspections for any cracking in the forward support fitting and the aft support fitting, and HFEC surface inspections for any cracking in the rear spar upper chord and rear spar upper web, as applicable, and related investigative and corrective actions.

We also reviewed Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016. The service information describes procedures for repetitive eddy current inspections of the left and right wing for any cracking in the inspar upper skin and the repair parts if applicable, and related investigative and corrective actions.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

Although this proposed AD does not explicitly restate the requirements of AD 2014–12–13, this proposed AD would retain all of the requirements of AD 2014–12–13. Those requirements are referenced in the service information identified previously, which, in turn, is referenced in paragraphs (g) and (h) of this proposed AD. This proposed AD would also require accomplishing the actions specified in the service information described previously, except as discussed under ''Differences Between this Proposed AD and the Service Information.'' For information on the procedures and compliance times, see this service information at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9523.

The phrase ''related investigative actions'' is used in this proposed AD. Related investigative actions are follow-on actions that (1) are related to the primary action, and (2) further investigate the nature of any condition found. Related investigative actions in an AD could include, for example, inspections.

The phrase ''corrective actions'' is used in this proposed AD. Corrective actions correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

Differences Between This Proposed AD and the Service Information

Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016; and Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016; specify to contact the manufacturer for certain instructions, but this proposed AD would require accomplishment of repair methods, modification deviations, and alteration deviations in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

Costs of Compliance

We estimate that this proposed AD affects 471 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
HFEC open hole inspections	82 work-hours × $85 per hour = $6,970 per inspection cycle.	$0	$6,970 per inspection cycle	$3,282,870 per inspection cycle.
Eddy current inspection	14 work-hours × $85 per hour = $1,190 per inspection cycle.	0	$1,190 per inspection cycle	$560,490 per inspection cycle.

ESTIMATED COSTS FOR OPTIONAL ACTIONS

Action	Labor cost	Parts cost	Cost per product
Inspection	Up to 41 work-hours × $85 per hour = $3,485 per inspection cycle.	$0	Up to $1,641,435 per inspection cycle.

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this proposed AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, ''General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this proposed AD would not have federalism

implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2014–12–13, Amendment 39–17874 (79 FR 39300, July 10, 2014), and adding the following new AD:

The Boeing Company: Docket No. FAA–2016–9523; Directorate Identifier 2016–NM–134–AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by February 21, 2017.

(b) Affected ADs

This AD replaces AD 2014–12–13, Amendment 39–17874 (79 FR 39300, July 10, 2014). This AD affects AD 2015–21–08, Amendment 39–18301 (80 FR 65921, October 28, 2015).

(c) Applicability

This AD applies to all The Boeing Company Model 737–100, –200, –200C, –300, –400, and –500 series airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 57, Wings.

(e) Unsafe Condition

This AD was prompted by reports of additional cracking in the inspar upper skin at Wing Buttock Line (WBL) 157 and in the skin at two holes common to the rear spar in the same area, and rear spar web cracks were also noted on both wings. Subsequent inspections revealed that the right rear spar upper chord was almost completely severed and the left rear spar upper chord was completely severed. We are issuing this AD to detect and correct cracking of the forward and aft support fittings for the main landing gear (MLG) beam, the rear spar upper chord and rear spar web in the area of rear spar station (RSS) 224.14, which could grow and result in a fuel leak and possible fire.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions for Group 1 Airplanes

For airplanes identified as Group 1 in Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016: At the applicable time specified in table 1 of paragraph 1.E., ''Compliance,'' of Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016, except as required by paragraph (j)(3) of this AD, do applicable inspections and corrective actions using a method approved in accordance with the procedures specified in paragraph (m) of this AD.

(h) Required Actions for Groups 2–7 Airplanes

For airplanes identified as Groups 2–7 in Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016: At the applicable time specified in table 2 through table 9 of paragraph 1.E., ''Compliance,'' of Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016, except as required by paragraph (j)(3) of this AD: Do high frequency eddy current (HFEC) open hole inspections for any cracking in the forward support fitting, the aft support fitting, the rear spar upper chord, and the rear spar web at the 12 fastener holes (locations 1–12); or HFEC open hole inspections for any cracking in the forward support fitting and the aft support fitting, and HFEC surface inspection for any cracking in the rear spar upper chord and rear spar upper web; as applicable, and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016. Do all applicable related investigative and corrective actions before further flight. Thereafter, repeat the HFEC inspection at the applicable time specified in table 2 through table 9 of paragraph 1.E., ''Compliance,'' of Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016. Options provided in Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016, for accomplishing the inspection are acceptable for the corresponding requirements of this paragraph provided that the inspections are done at the applicable times in paragraph 1.E., ''Compliance,'' of Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016.

(i) Eddy Current Inspection

For airplanes identified in Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016: At the applicable time specified in table 1 and table 2 of paragraph 1.E., ''Compliance,'' of Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016, except as required by paragraph (j)(2) of this AD, do an eddy current inspection of the left and right wings for any cracking in the inspar upper skin, and at the repair parts if applicable, and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016. Do all related investigative and corrective actions before further flight. Thereafter, repeat the eddy current inspection at the applicable time specified in table 1 and table 2 of paragraph 1.E., ''Compliance,'' of Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016.

(j) Exceptions to the Service Information

(1) If any cracking is found during any inspection required by this AD, and Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016, specifies to contact Boeing for appropriate action: Before further flight, repair using a method approved in accordance with the procedures specified in paragraph (m) of this AD.

(2) Where Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016, specifies a compliance time ''after the Original Issue date of this service bulletin,'' paragraph (i) of this AD requires compliance within the specified compliance time after the effective date of this AD.

(3) Where Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016, specifies a compliance time ''after the Revision 1 date of this service bulletin, whichever occurs later,'' paragraphs (g) and (h) of this AD require compliance within the specified compliance time after the effective date of this AD.

(k) Terminating Action

Accomplishing the initial inspections and applicable related investigative and corrective actions required by paragraphs (g), (h), and (i) of this AD, as applicable, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737–57A1318, Revision 1, dated July 22, 2016; and Boeing Alert Service Bulletin 737–57A1328, dated July 22, 2016, terminates all requirements of AD 2015–21–08.

(l) Credit for Previous Actions

This paragraph provides credit for the actions specified in paragraphs (g) and (h) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 737–57A1318, May 15, 2013, which was incorporated by reference in AD 2014–03–06, Amendment 39–17743 (79 FR 39300, July 10, 2014).

(m) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles Aircraft Certification Office (ACO), ANM–120L, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (n)(1) of this AD. Information may be emailed to: *9-ANM-LAACO-AMOC-Requests@faa.gov.*

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) Except as required by paragraph (j) of this AD: For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (m)(4)(i) and (m)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or sub-step is labeled ''RC Exempt,'' then the RC requirement is removed from that step or sub-step. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(n) Related Information

(1) For more information about this AD, contact Payman Soltani, Aerospace Engineer, Airframe Branch, ANM–120L, FAA, Los Angeles ACO, 3960 Paramount Boulevard, Lakewood, CA 90712–4137; phone: 562–627–5313; fax: 562–627–5210; email: *payman.soltani@faa.gov.*

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110–SK57, Seal Beach, CA 90740; telephone 562–797–1717; Internet *https://www.myboeingfleet.com.* You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221.

Issued in Renton, Washington, on December 16, 2016.

Ross Landes,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–31367 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–9380; Directorate Identifier 2016–NE–21–AD]

RIN 2120–AA64

Airworthiness Directives; CFE Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain CFE Company (CFE) turbofan engines. This proposed AD was prompted by a quality escape for high-pressure compressor (HPC) impellers made from forgings with nonconforming material grain size. This proposed AD would require removal of the HPC impeller. We are proposing this AD to correct the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by February 21, 2017.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact CFE Company, 111 S. 34th Street, Phoenix, Arizona 85034–2802; phone: 800–601–3099; Internet: *https://www.myaerospace.com.* You may view this referenced service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781–238–7125.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9380; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Martin Adler, Aerospace Engineer, Engine Certification Office, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781–238–7157; fax: 781–238–7199; email: *martin.adler@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the **ADDRESSES** section. Include ''Docket No. FAA–2016–9380; Directorate Identifier 2016–NE–21–AD'' at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to *http://www.regulations.gov,* including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

We propose to adopt an AD for certain CFE CFE738–1–1B model turbofan engines with HPC impeller, part number (P/N) 6079T77P07 or P/N 6079T77P09 installed. This proposed AD was prompted by a quality escape for HPC impellers made from forgings with nonconforming material grain size. This condition, if not corrected, could result in failure of the HPC impeller, damage to the engine, and damage to the airplane.

Related Service Information Under 1 CFR Part 51

We reviewed CFE Service Bulletin (SB) CFE738–72–8080, Revision 0, dated August 18, 2016. The SB

describes procedures for replacing specific serial numbered HPC impellers, P/N 6079T77P07 or P/N 6079T77P09. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require removal of affected HPC impellers from service and replacement with a part eligible for installation.

Costs of Compliance

We estimate that this proposed AD affects 176 engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Pro-rated HPC impeller	$0.00	$42,240	$42,240	$7,434,240

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: ''General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

CFE Company: Docket No. FAA–2016–9380; Directorate Identifier 2016–NE–21–AD.

(a) Comments Due Date

We must receive comments by February 21, 2017.

(b) Affected ADs

None.

(c) Applicability

This AD applies to CFE Company (CFE) CFE738–1–1B model turbofan engines with a high-pressure compressor (HPC) impeller, part number (P/N) 6079T77P07 or P/N 6079T77P09, with a serial number listed in CFE Service Bulletin (SB) CFE738–72–8080, Revision 0, dated August 18, 2016, installed.

(d) Subject

Joint Aircraft System Component (JASC) of America Code 7230, Turbine Engine Compressor Section.

(e) Unsafe Condition

This AD was prompted by a quality escape for HPC impellers made from forgings with nonconforming material grain size. We are issuing this AD to prevent uncontained failure of the HPC impeller, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Action

Remove all affected HPC impellers from service at the next piece-part exposure and replace with a part eligible for installation.

(h) Definition

For the purposes of this AD, ''piece-part exposure'' is defined as separation of the impeller from the compressor rotor assembly.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: *ANE-AD-AMOC@faa.gov.*

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/ certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact Martin Adler, Aerospace Engineer, Engine Certification Office, FAA, 1200 District Avenue, Burlington, MA 01803; phone: 781–238–7157; fax: 781–238–7199; email: *martin.adler@faa.gov.*

(2) For service information identified in this proposed AD, contact CFE Company, 111 S. 34th Street, Phoenix, Arizona 85034–2802; phone: 800–601–3099; Internet: *https://www.myaerospace.com.*

(3) You may view this service information at FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781–238–7125.

Issued in Burlington, Massachusetts, on December 22, 2016.

Carlos A. Pestana,

Acting Manager, Engine & Propeller Directorate, Aircraft Certification Service.

[FR Doc. 2016–31780 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–6693; Directorate Identifier 2015–SW–033–AD]

RIN 2120–AA64

Airworthiness Directives; Airbus Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for Airbus Helicopters Model AS332C, AS332C1, AS332L, AS332L1, AS332L2, and EC225LP helicopters. This proposed AD would require repetitive inspections of the intermediate gear box (IGB) fairing. This proposed AD is prompted by separation of the IGB fairing from the fairing gutter and subsequent interference with the drive shaft. The actions of this proposed AD are intended to prevent the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by March 6, 2017.

ADDRESSES: You may send comments by any of the following methods:

- *Federal eRulemaking Docket:* Go to *http://www.regulations.gov.* Follow the online instructions for sending your comments electronically.
- *Fax:* 202–493–2251.
- *Mail:* Send comments to the U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590–0001.
- *Hand Delivery:* Deliver to the ''Mail'' address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–6693; or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the economic evaluation, any comments received, the European Aviation Safety Agency (EASA) AD, and other information. The street address for the Docket Operations Office (telephone 800–647–5527) is in the *ADDRESSES* section. Comments will be available in the AD docket shortly after receipt.

For service information identified in this proposed rule, contact Airbus Helicopters, 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone (972) 641–0000 or (800) 232–0323; fax (972) 641–3775; or at *http://www.airbushelicopters.com/techpub.* You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N–321, Fort Worth, TX 76177.

FOR FURTHER INFORMATION CONTACT: David Hatfield, Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone (817) 222–5116; email *david.hatfield@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

We will file in the docket all comments that we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

Discussion

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD No. 2015–0092, dated May 26, 2015, to correct an unsafe condition for Airbus Model AS332C, AS332C1, AS332L, AS332L1, AS332L2, and EC225LP helicopters with certain part-numbered IGB fairings installed. EASA advises of occurrences involving separation of the angle section of the IGB fairing from the IGB fairing gutter, which caused interference with the tail rotor (T/R) inclined drive shaft. EASA states that this condition, if not detected and corrected, could lead to failure of the T/R drive shaft, loss of the T/R drive, and consequent reduced control of the helicopter. To address this condition, EASA issued a series of ADs to require repetitive inspections of the IGB fairing and its attachment supports and other corrective actions. According to EASA, reports of cracks and separation of the gutter continued to occur. EASA superseded its previous ADs and issued AD No. 2011–0189–E, dated September 29, 2011, to require additional inspections of the IGB fairing and attachment supports.

After EASA issued AD No. 2011–0189–E, Airbus Helicopters developed a new IGB fairing, part number (P/N) 332A24–0322–00, which is a one-piece full composite part that integrates a gutter. EASA then superseded AD No. 2011–0189–E and issued AD No. 2015–0092, retaining the inspection requirements but requiring installation of the new composite IGB fairing as terminating action for the inspections.

FAA's Determination

These helicopters have been approved by the aviation authority of France and are approved for operation in the United States. Pursuant to our bilateral agreement with France, EASA, its technical representative, has notified us of the unsafe condition described in its AD. We are proposing this AD because we evaluated all known relevant information and determined that an unsafe condition is likely to exist or develop on other products of the same type design.

Related Service Information Under 1 CFR part 51

We reviewed Airbus Helicopters Emergency Alert Service Bulletin (EASB), Revision 5, dated March 9, 2015, which is one document with three different identification numbers. EASB No. 53.01.47 is for Model AS332C, C1, L, L1, L2, and military model B, B1, M, M1, and F1 helicopters. EASB No. 53.00.48 is for military Model AS532-series helicopters. EASB No. 53A001 is for Model EC225 LP and the military Model EC725AP helicopter. EASB Nos. 53.01.47 and 53A001 are proposed for incorporation by reference in this

proposed AD. EASB No. 53.00.48 is not proposed for incorporation by reference in this proposed AD.

This service information specifies repetitive inspections of the IGB fairing, attachment supports, and fairing gutter. This service information also advises that IGB fairing P/Ns 332A24–0303–05XX, 332A24–0303–06XX, 332A08–1391–00, and 332A08–1391–01 are unfit for flight beginning December 1, 2017, and that these fairings should be replaced with a new composite fairing P/N 332A24–0322–00.

We also reviewed Airbus Helicopters Service Bulletin No. AS332–53.01.78, Revision 0, dated March 9, 2015, for FAA type-certificated Model AS332C, C1, L, L1, and L2 helicopters and military Model AS332B, B1, F1, M, and M1 helicopters, and Airbus Helicopter Service Bulletin No. EC225–53–041, Revision 0, dated March 9, 2015, for the Model EC225LP helicopter. The service information specifies replacing each IGB fairing with a newly designed fairing. Airbus Helicopters identifies replacement of the IGB fairing under these service instructions as Modification 0726819.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Proposed AD Requirements

This proposed AD would require repetitively inspecting the IGB fairing and attachment supports for a crack. If there is a crack in an attachment support, this proposed AD would require replacing the attachment support. If there is a crack in the fairing, this proposed AD would require replacing the IGB fairing with a composite fairing P/N 332A24–0322–00.

For helicopters with IGB fairing P/N 332A24–0303–05XX or P/N 332A24–0303–06XX, this proposed AD would also require repetitively inspecting the fairing gutter for a crack. If there is a crack in the fairing gutter, this proposed AD would require inspecting for interference and separation.

This proposed AD would also require replacing the IGB fairing with IGB fairing P/N 332A24–0322–00 within 150 hours TIS, if not previously replaced as the result of the repetitive inspections. Replacing the IGB fairing with IGB fairing P/N 332A24–0322–00 would be terminating action for the repetitive inspections.

Lastly, this proposed AD would prohibit installing an IGB fairing P/N 332A24–0303–05XX, P/N 332A24–0303–06XX, P/N 332A08–1391–00, or P/N 332A08–1391–01 on any helicopter.

Differences Between This Proposed AD and the EASA AD

The EASA AD requires replacing the IGB fairing with the composite fairing within 31 months. This proposed AD would require this replacement within 150 hours TIS.

Costs of Compliance

We estimate that this proposed AD would affect 11 helicopters of U.S. Registry and that labor costs average $85 per work-hour. Based on these estimates, we expect the following costs:

- Visually inspecting each IGB fairing and the left- and right-hand attachment supports for a crack would require a 0.5 work-hour for a total cost of $43 per helicopter and $473 for the U.S. fleet, per inspection cycle.
- Replacing the IGB fairing would require 2 work hours and parts would cost $2,600, for a total cost of $2,770 per helicopter and $30,470 for the U.S. fleet.
- Replacing the attachment supports would require 2 work hours and parts would cost $1,100 for a total cost of $1,270 per helicopter.
- Visually inspecting for a crack in the fairing gutter would require 0.5 work hour for a total cost of about $43 per helicopter.
- Inspecting for interference and separation of the fairing gutter would require 0.5 work hour for a total cost of $43 per helicopter.
- Replacing the inclined drive shaft tube would require 2 work hours and parts would cost $18,399, for a total cost of $18,569 per helicopter.
- Replacing a hydraulic pipe would require 2 work hours and parts would cost $1,322, for a total cost of $1,492 per helicopter.
- Repairing the flight control assembly would require 2 work hours and parts would cost $484, for a total cost of $654 per helicopter.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. ''Subtitle VII: Aviation Programs,'' describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in ''Subtitle VII, Part A, Subpart III, Section 44701: General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed, I certify this proposed regulation:

1. Is not a ''significant regulatory action'' under Executive Order 12866;
2. Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Airbus Helicopters: Docket No. FAA–2016–6693; Directorate Identifier 2015–SW–033–AD.

(a) Applicability

This AD applies to Model AS332C, AS332C1, AS332L, AS332L1, AS332L2, and EC225LP helicopters with an intermediate gear box (IGB) fairing part number (P/N) 332A24–0303–05XX, 332A24–0303–06XX, 332A08–1391–00, or 332A08–1391–01

installed, where ''XX'' is any two alphanumeric characters, certificated in any category.

(b) Unsafe Condition

This AD defines the unsafe condition as detachment of the angle section of an IGB and subsequent interference between an IGB fairing and tail rotor inclined drive shaft. This condition could result in failure of a tail rotor drive shaft, loss of the tail rotor drive, and subsequent loss of control of the helicopter.

(c) Comments Due Date

We must receive comments by March 6, 2017.

(d) Compliance

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

(e) Required Actions

(1) Within 15 hours time-in-service (TIS) and thereafter at intervals not to exceed 15 hours TIS, visually inspect the IGB fairing and the left- and right-hand attachment supports for a crack as shown in Figure 2 of Airbus Helicopters Emergency Alert Service Bulletin (EASB) No. 53.01.47, Revision 5, dated March 5, 2015 (EASB No. 53.01.47) or EASB No. 53A001, Revision 5, dated March 5, 2015 (EASB No. 53A001), as appropriate for your model helicopter.

(i) If there is a crack in an attachment support, replace the attachment support.

(ii) If there is a crack in the fairing, replace the IGB fairing with IBG fairing P/N 332A24–0322–00 in accordance with the Accomplishment Instructions, paragraph 3.B.2, of Airbus Helicopters Service Bulletin No. AS332–53.01.78, Revision 0, dated March 9, 2015 (SB No. AS332–53.01.78) or Service Bulletin No. EC225–53–041, Revision 0, dated March 9, 2015 (SB No. EC225–53–041), as appropriate for your model helicopter.

(2) For helicopters with IGB fairing P/N 332A24–0303–05XX or P/N 332A24–0303–06XX, within 15 hours TIS and thereafter at intervals not to exceed 15 hours TIS, visually inspect for a crack in the fairing gutter as shown in Figure 1 of EASB No. 53.01.47 or EASB No. 53A001. If there is a crack in the fairing gutter:

(i) Inspect for interference and separation of the fairing gutter. If there is any interference between the gutter and the tail rotor inclined drive shaft tube, replace the tail rotor inclined drive shaft tube. If there is any interference between the gutter and a hydraulic pipe, repair or replace the hydraulic pipe. If there is any interference between the gutter and the flight controls, repair the flight controls in accordance with FAA-approved procedures. If there is any separation of the gutter, remove the gutter.

(ii) Replace the IGB fairing with IBG fairing P/N 332A24–0322–00 in accordance with the Accomplishment Instructions, paragraph 3.B.2, of SB No. AS332–53.01.78 or SB No. EC225–53–041.

(3) Within 150 hours TIS, replace the IGB fairing P/N 332A24–0303–05XX, 332A24–0303–06XX, 332A08–1391–00, or 332A08–1391–01 with IGB fairing P/N 332A24–0322–00 in accordance with the Accomplishment Instructions, paragraph 3.B.2, of SB No. AS332–53.01.78 or SB No. EC225–53–041.

(4) Replacing the IGB fairing with IGB fairing P/N 332A24–0322–00 is terminating action for the repetitive inspections required by this AD.

(5) Do not install an IGB fairing P/N 332A24–0303–05XX, P/N 332A24–0303–06XX, P/N 332A08–1391–00, or P/N 332A08–1391–01 on any helicopter.

(f) Credit for Actions Previously Completed

Compliance with Airbus Helicopters Emergency Alert Service Bulletin No. 53.01.47, Revision 4, dated September 27, 2011, before the effective date of this AD is considered acceptable for compliance with the initial inspections specified in paragraphs (e)(1) and (e)(2) of this AD, but does not constitute terminating action for the repetitive inspections required by this AD.

(g) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Safety Management Group, FAA, may approve AMOCs for this AD. Send your proposal to: David Hatfield, Aviation Safety Engineer, Safety Management Group, Rotorcraft Directorate, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone (817) 222–5116; email *9-ASW-FTW-AMOC-Requests@faa.gov.*

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office before operating any aircraft complying with this AD through an AMOC.

(h) Additional Information

The subject of this AD is addressed in European Aviation Safety Agency (EASA) AD No. 2015–0092, dated May 26, 2015. You may view the EASA AD on the Internet at *http://www.regulations.gov* in the AD Docket.

(i) Subject

Joint Aircraft Service Component (JASC) Code: 5350 Aerodynamic Fairings.

Issued in Fort Worth, Texas, on December 21, 2016.

Lance T. Gant,

Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. 2016–31866 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–9566; Directorate Identifier 2016–NM–191–AD]

RIN 2120–AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all The Boeing Company Model 757–200, –200PF, and –200CB series airplanes. This proposed AD was prompted by an evaluation by the design approval holder (DAH) indicating that certain fuselage circumferential splice plates are subject to widespread fatigue damage (WFD). This proposed AD would require repetitive low frequency eddy current (LFEC) inspections for cracks of certain circumferential splice plates, and repairs if necessary. We are proposing this AD to address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by February 21, 2017.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110–SK57, Seal Beach, CA 90740–5600; telephone 562–797–1717; Internet *https://www.myboeingfleet.com.* You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221. It is also available on the internet at *http://www.regulations.gov* by searching for

and locating Docket No. FAA–2016–9566.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9566; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Eric Schrieber, Aerospace Engineer, Airframe Branch, ANM–120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, CA 90712–4137; phone: 562–627–5348; fax: 562–627–5210; email: *eric.schrieber@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the **ADDRESSES** section. Include ''Docket No. FAA–2016–9566; Directorate Identifier 2016–NM–191–AD'' at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to *http://www.regulations.gov,* including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

Fatigue damage can occur locally, in small areas or structural design details, or globally, in widespread areas. Multiple-site damage is widespread damage that occurs in a large structural element such as a single rivet line of a lap splice joining two large skin panels. Widespread damage can also occur in multiple elements such as adjacent frames or stringers. Multiple-site damage and multiple-element damage cracks are typically too small initially to be reliably detected with normal inspection methods. Without intervention, these cracks will grow, and eventually compromise the structural integrity of the airplane. This condition is known as widespread fatigue damage. It is associated with general degradation of large areas of structure with similar structural details and stress levels. As an airplane ages, WFD will likely occur, and will certainly occur if the airplane is operated long enough without any intervention.

The FAA's WFD final rule (75 FR 69746, November 15, 2010) became effective on January 14, 2011. The WFD rule requires certain actions to prevent structural failure due to WFD throughout the operational life of certain existing transport category airplanes and all of these airplanes that will be certificated in the future. For existing and future airplanes subject to the WFD rule, the rule requires that DAHs establish a limit of validity (LOV) of the engineering data that support the structural maintenance program. Operators affected by the WFD rule may not fly an airplane beyond its LOV, unless an extended LOV is approved.

The WFD rule (75 FR 69746, November 15, 2010) does not require identifying and developing maintenance actions if the DAHs can show that such actions are not necessary to prevent WFD before the airplane reaches the LOV. Many LOVs, however, do depend on accomplishment of future maintenance actions. As stated in the WFD rule, any maintenance actions necessary to reach the LOV will be mandated by airworthiness directives through separate rulemaking actions.

In the context of WFD, this action is necessary to enable DAHs to propose LOVs that allow operators the longest operational lives for their airplanes, and still ensure that WFD will not occur. This approach allows for an implementation strategy that provides flexibility to DAHs in determining the timing of service information development (with FAA approval), while providing operators with certainty regarding the LOV applicable to their airplanes.

We have received a report indicating that the fuselage circumferential splice plates along the center fastener rows, forward and aft of station 900 and station 1180 splice centerlines, are susceptible to WFD. There have been no reports of cracking on airplanes in service. Inspections will mitigate a safety issue, allowing continued operation to the limit of validity. This condition, if not corrected, could result in failure of a principle structural element, which could adversely impact the structural integrity of the airplane.

Related Service Information Under 1 CFR Part 51

We reviewed Boeing Alert Service Bulletin 757–53A0105, dated June 10, 2016. The service information describes procedures for repetitive LFEC inspections and repairs of the circumferential splice plates at station 900 and station 1180, from stringer S–6L to stringer S–6R, for any cracks. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require accomplishing the actions specified in the service information described previously, except as discussed under ''Differences Between this Proposed AD and the Service Information.'' For information on the procedures and compliance times, see this service information at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9566.

The phrase ''corrective actions'' is used in this proposed AD. Corrective actions correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

Differences Between This Proposed AD and the Service Information

Boeing Alert Service Bulletin 757–53A0105, dated June 10, 2016, specifies to contact the manufacturer for certain instructions, but this proposed AD would require using repair methods, modification deviations, and alteration deviations in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

Costs of Compliance

We estimate that this proposed AD affects 634 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
LFEC inspection	6 work-hours × $85 per hour = $510 per inspection cycle.	$0	$510 per inspection cycle	$323,340 per inspection cycle.

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this proposed AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: ''General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

The Boeing Company: Docket No. FAA–2016–9566; Directorate Identifier 2016–NM–191–AD.

(a) Comments Due Date

We must receive comments by February 21, 2017.

(b) Affected ADs

This AD affects AD 2006–11–11, Amendment 39–14615 (71 FR 30278, May 26, 2006) (''AD 2006–11–11'').

(c) Applicability

This AD applies to all The Boeing Company Model 757–200, –200PF, and –200CB series airplanes, certificated in any category.

(d) Subject

Air Transport Association (ATA) of America Code 53, Fuselage.

(e) Unsafe Condition

This AD was prompted by an evaluation by the design approval holder (DAH) indicating that the fuselage circumferential splice plates along the center fastener rows, forward and aft of station 900 and station 1180 splice centerlines, are subject to widespread fatigue damage (WFD). We are issuing this AD to detect and correct any such cracks, which could lead to the failure of a principal structural element and consequently adversely affect the structural integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Repetitive Low Frequency Eddy Current (LFEC) Inspections and Corrective Actions

At the applicable time specified in paragraph 1.E., ''Compliance,'' of Boeing Alert Service Bulletin 757–53A0105, dated June 10, 2016, except as required by paragraph (h)(1) of this AD: Do an LFEC inspection for cracking of the circumferential splice plates at station 900 and station 1180, from stringer S–6L to stringer S–6R, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 757–53A0105, dated June 10, 2016, except as required by paragraph (h)(2) of this AD. Do all applicable corrective actions before further flight. Repeat the inspections thereafter at the applicable times specified in paragraph 1.E., ''Compliance,'' of Boeing Alert Service Bulletin 757–53A0105, dated June 10, 2016. Accomplishing these inspections terminates the requirements of paragraph (h) of AD 2006–11–11 for the inspections of structurally significant item (SSI) 53–40–05, circumferential skin splice body station BS900 stringer S–6L to stringer S–6R and circumferential skin splice body station BS1180 stringer S–6L to stringer S–6R, as specified in Section 9 of Boeing Maintenance Planning Data (MPD) Document D622N001–9, May 2003 or June 2005 revisions. All other provisions of AD 2006–11–11 remain fully applicable and must be complied with.

(h) Service Information Exceptions

(1) Where Boeing Alert Service Bulletin 757–53A0105, dated June 10, 2016, specifies a compliance time ''after the original issue date of this service bulletin,'' this AD requires compliance within the specified compliance time after the effective date of this AD.

(2) Where Boeing Alert Service Bulletin 757–53A0105, dated June 10, 2016, specifies to contact Boeing for repair instructions, and specifies that action as Required for Compliance (RC), this AD requires repair using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Los Angeles Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to: *9-ANM-LAACO-AMOC-Requests@faa.gov.*

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) Except as required by paragraph (h) of this AD: For service information that contains steps that are labeled as RC, the provisions of paragraphs (i)(4)(i) and (i)(4)(ii) of this AD apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. If a step or substep is labeled ''RC Exempt,'' then the RC requirement is removed from that step or substep. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

(j) Related Information

(1) For more information about this AD, contact Eric Schrieber, Aerospace Engineer, Airframe Branch, ANM–120L, FAA, Los Angeles ACO, 3960 Paramount Boulevard, Lakewood, CA 90712–4137; phone: 562–627–5348; fax: 562–627–5210; email: *eric.schrieber@faa.gov.*

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminster Blvd., MC 110–SK57, Seal Beach, CA 90740–5600; telephone 562–797–1717; Internet *https://www.myboeingfleet.com.* You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221.

Issued in Renton, Washington, on December 22, 2016.

Robert D. Breneman,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–31619 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–9405; Directorate Identifier 2016–NE–22–AD]

RIN 2120–AA64

Airworthiness Directives; Pratt & Whitney Division Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for certain Pratt & Whitney Division (PW) PW2037, PW2037M, and PW2040 turbofan engines. This proposed AD was prompted by an unrecoverable engine in-flight shutdown (IFSD) after an ice crystal icing event. This proposed AD would require installing a software standard eligible for installation and preclude the use of electronic engine control (EEC) software standards earlier than SCN 5B/I. We are proposing this AD to correct the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by February 21, 2017.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Pratt & Whitney Division, 400 Main St., East Hartford, CT 06118; phone: 800–565–0140; fax: 860–565–5442. You may view this service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781–238–7125.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9405; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Kevin Clark, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781–238–7088; fax: 781–238–7199; email: *kevin.m.clark@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this NPRM. Send your comments to an address listed under the section. Include ''Docket No. FAA–2016–9405; Directorate Identifier 2016–NE–22–AD'' at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to *http://www.regulations.gov,* including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this NPRM.

Discussion

We propose to adopt an AD for certain PW PW2037, PW2037M, and PW2040 turbofan engines with EEC, model number EEC104–40 or EEC104–60, installed with an EEC software standard earlier than SCN 5B/I. This proposed AD was prompted by a report of an unrecoverable engine IFSD after an ice crystal icing event. The root cause of the event is ice crystal icing causing the engine to flameout. An attempt to restart the engine was made while the active clearance control was on, which caused damage to the HPT and rotor seizure. This condition, if not corrected, could result in failure of the HPT, rotor seizure, failure of one or more engines, loss of thrust control, and loss of the airplane.

Related Service Information Under 1 CFR Part 51

We reviewed PW Alert Service Bulletin (ASB) PW2000 A73–170, dated July 14, 2016. The ASB describes

procedures for modifying or replacing the EEC. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

FAA's Determination

We are proposing this NPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would require modifying or replacing the EEC.

Differences Between This Proposed AD and the Service Information

PW ASB PW2000 A73–170, dated July 14, 2016, specifies compliance for any engine flown, or expected to be flown, in the Asian Pacific latitudes and longitudes, while this proposed AD specifically lists the serial numbers (S/Ns) of certain affected engines. Also, PW ASB PW2000 A73–170, dated July 14, 2016, provides until 2026 to comply, while this proposed AD provides until July 2024 to comply.

Costs of Compliance

We estimate that this NPRM affects 713 engines, installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
EEC software installation	1.8 work-hours × $85 per hour = $153.00	0.00	$153.00	$109,089.00

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: ''General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Pratt & Whitney Division: Docket No. FAA–2016–9405; Directorate Identifier 2016–NE–22–AD.

(a) Comments Due Date

We must receive comments by February 21, 2017.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Pratt & Whitney Division (PW) PW2037, PW2037M, and PW2040 turbofan engines with electronic engine control (EEC), model number EEC104–40 or EEC104–60, installed, with an EEC software standard earlier than SCN 5B/I.

(d) Subject

Joint Aircraft System Component (JASC) of America Code 7321, Fuel Control Turbine Engines.

(e) Unsafe Condition

This AD was prompted by unrecoverable engine in-flight shutdown (IFSD) after an ice crystal icing event. We are issuing this AD to prevent failure of the high-pressure turbine (HPT), rotor seizure, failure of one or more engines, loss of thrust control, and loss of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Action

Remove EEC software standards earlier than SCN 5B/I and install EEC software eligible for installation as follows:

(1) For engines with serial numbers listed in Figure 1, remove the software at next shop visit, or prior to December 2018, whichever occurs first.

(2) For engines with serial numbers not listed in Figure 1, remove the software at next shop visit, or prior to July 2024, whichever occurs first.

FIGURE 1 TO PARAGRAPH (G)—ENGINE S/NS

716402	727272	728741
727103	727280	728743
727134	727281	728748
727152	727282	728779
727158	727286	728785
727189	727287	728795
727202	727288	728806
727204	728709	728811
727231	728715	728812
727239	728716	728820
727240	728719	728824
727251	728720	728826
727252	728725	728827
727253	728726	728840
727257	728729	728864
727269	728730	728870

(h) Installation Prohibition

After the effective date of this AD, do not install any software standard earlier than SCN 5B/I into any EEC.

(i) Definition

For the purpose of this AD, an ''engine shop visit'' is the induction of an engine into the shop for maintenance involving the separation of any major mating flange, except that the separation of engine flanges solely for the purposes of transportation without subsequent maintenance does not constitute an engine shop visit.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Engine Certification Office, FAA, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request. You may email your request to: *ANE–AD–AMOC@faa.gov.*

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/ certificate holding district office.

(k) Related Information

(1) For more information about this AD, contact Kevin Clark, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA 01803; phone: 781–238–7088; fax: 781–238–7199; email: *kevin.m.clark@faa.gov.*

(2) PW Alert Service Bulletin PW2000 A73–170, dated July 14, 2016, can be obtained from PW using the contact information in paragraph (k)(3) of this AD.

(3) For service information identified in this AD, contact Pratt & Whitney Division, 400 Main St., East Hartford, CT 06118; phone: 800–565–0140; fax: 860–565–5442.

(4) You may view this referenced service information at the FAA, Engine & Propeller Directorate, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781–238–7125.

Issued in Burlington, Massachusetts, on December 28, 2016.

Colleen M. D'Alessandro,

Manager, Engine & Propeller Directorate, Aircraft Certification Service.

[FR Doc. 2016–31870 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–6968; Directorate Identifier 2015–SW–020–AD]

RIN 2120–AA64

Airworthiness Directives; Sikorsky Aircraft Corporation Helicopters (Type Certificate Previously Held by Schweizer Aircraft Corporation)

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede airworthiness directive (AD) 93–17–13 for Schweizer Aircraft Corporation and Hughes Helicopters, Inc. (now Sikorsky Aircraft Corporation) (Sikorsky) Model TH55A, 269A, 269A–1, 269B, and 269C helicopters. AD 93–17–13 requires installing tachometer markings and inspecting the driveshaft. This proposed AD would require recurring inspections of the driveshaft and would expand the applicability to include Model 269C–1 helicopters. This proposed AD is prompted by reports of accidents because of driveshaft failures. The actions of this proposed AD are intended to prevent the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by March 6, 2017.

ADDRESSES: You may send comments by any of the following methods:

- *Federal eRulemaking Docket:* Go to *http://www.regulations.gov.* Follow the online instructions for sending your comments electronically.
- *Fax:* 202–493–2251.
- *Mail:* Send comments to the U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590–0001.
- *Hand Delivery:* Deliver to the ''Mail'' address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (telephone 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

For service information identified in this proposed AD, contact Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1–800–Winged–S or 203–416–4299; email *wcs_cust_service_eng.gr-sik@lmco.com.* You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N–321, Fort Worth, TX 76177.

FOR FURTHER INFORMATION CONTACT: Blaine Williams, Aerospace Engineer, Boston Aircraft Certification Office, Engine & Propeller Directorate, 1200 District Avenue, Burlington, Massachusetts 01803; telephone (781) 238–7161; email *blaine.williams@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

We will file in the docket all comments that we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

Discussion

On August 31, 1993, we issued AD 93–17–13, Amendment 39–8684 (58 FR 51770, October 5, 1993), for Schweizer Aircraft Corporation and Hughes Helicopters, Inc., Model 269A, 269A–1, 269B, 269C, and TH55A helicopters. AD 93–17–13 requires within 30 days or 100 hours time-in-service (TIS),

whichever occurs first, and thereafter every 300 hours TIS, visually inspecting for cracks, machining steps, manufacturing tool marks, surface defects, and lack of cleanup during the production grinding operation. AD 93–17–13 also requires installing engine and rotor tachomometer markings and replacing any unairworthy lower coupling driveshaft (driveshaft) before further flight. The actions in AD 93–17–13 are intended to prevent failure of the driveshaft, loss of power to the rotor system, and subsequent loss of helicopter control.

Actions Since AD 93–17–13 Was Issued

Since we issued AD 93–17–13, Sikorsky became the type certificate holder of the Model 269A, 269A–1, 269B, 269C, and TH55A. Sikorsky performed a safety analysis and determined that the initial and recurrent inspection intervals and inspection method were not adequate to detect all corrosion, pits, nicks, scratches, dents, and cracks. Since 1992, 10 accidents, 2 of them fatal, occurred because of driveshaft failures due to static overload or torsional fatigue. Five of the accidents occurred after AD 93–17–13 was issued.

We propose reducing the initial and recurring inspection intervals, changing the type of damage to be detected by the visual inspection, and adding a magnetic particle inspection.

We propose including specific part-numbered driveshafts to the applicability because Sikorsky is developing a new driveshaft that we do not expect to be subject to this AD.

We propose expanding the applicability to include Model 269C–1 helicopters. These helicopters were not manufactured when AD 93–17–13 was issued but have applicable driveshafts installed.

We propose to retain the requirement to install engine and tachometer markings. AD 93–17–13 requires these markings because of reports of driveshaft damage as a result of engine overspeeds during start-up.

Finally, we would require a visual inspection for ''corrosion, a pit, a nick, a scratch, a dent, or a crack'' instead of ''cracks, machining steps, manufacturing tool marks, surface defects and lack of cleanup during the production grinding operation'' contained in AD 93–17–13. Since AD 93–17–13 was issued, we have seen no evidence that the driveshaft failures were caused by production errors.

The proposed actions are intended to prevent failure of the driveshaft, loss of power to the rotor system, and subsequent loss of helicopter control.

FAA's Determination

We are proposing this AD because we evaluated all known relevant information and determined that an unsafe condition exists and is likely to exist or develop on other products of these same type designs.

Related Service Information Under 1 CFR Part 51

We reviewed Sikorsky 269C Helicopter Alert Service Bulletin B–307, Basic Issue, dated December 18, 2014, and Sikorsky 269C–1 Helicopter Alert Service Bulletin C1B–043, Basic Issue, dated December 18, 2014 (ASBs). The ASBs call for a one-time visual and magnetic particle inspection of the driveshaft and driveshaft assembly for damage. The ASBs advise that the driveshaft be sent to Sikorsky and replaced if damaged. The inspection is to be accomplished within 25 hours TIS or within 180 days from the ASBs' issue date, whichever comes first. Sikorsky has since revised its maintenance manual to incorporate these inspections every 150 hours TIS.

We also reviewed Schweizer Aircraft Service Bulletin B–257.1, dated May 21, 1993 (ASB B–257.1). ASB B–257.1 calls for a one-time inspection to look for drive-shaft defects; installing declutched limit markings on the engine/rotor tachometer to reinforce operating limits; and prohibiting engine declutched operations above 1,600 RPM.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Proposed AD Requirements

This proposed AD would require within 25 hours TIS and thereafter at intervals not to exceed 150 hours TIS, visual inspections of the driveshaft. If there are no cracks, corrosion, or other damage, this proposed AD would require performing a magnetic particle inspection. If there is a crack or other damage, this proposed AD would require replacing the driveshaft before further flight. This proposed AD would also require adding tachometer markings if not previously performed.

Differences Between This Proposed AD and the Service Information

The Sikorsky service information calls for the initial inspection to be completed within 180 days or 25 hours time-in-service (TIS). This proposed AD would require the initial inspection to be completed within 25 hours TIS only. The service information requires contacting Sikorsky if a certain part-numbered driveshaft is installed, emailing information to Sikorsky, and returning damaged parts to Sikorsky; this proposed AD would not.

Interim Action

We consider this proposed AD to be an interim action. The design approval holder is developing a replacement driveshaft that will address the unsafe condition identified in this proposed AD. Once the replacement driveshaft is developed, approved and available, we might consider additional rulemaking.

Costs of Compliance

We estimate that this proposed AD would affect 619 helicopters of U.S. Registry and that labor costs average $85 per work hour. Based on these estimates, we expect the following costs:

- We estimate that the visual and magnetic particle inspections of the driveshaft would require 11 work hours for a cost of $935 per helicopter and $578,765 for the U.S. fleet per inspection cycle.
- Replacing the driveshaft, if needed, would cost about $4,574 for parts. No additional labor costs would be necessary.
- Installing engine and rotor tachometer markings would require 0.5 work-hour for a labor cost of about $43. The cost of parts would be minimal.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. ''Subtitle VII: Aviation Programs,'' describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in ''Subtitle VII, Part A, Subpart III, Section 44701: General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the

distribution of power and responsibilities among the various levels of government.

For the reasons discussed, I certify this proposed regulation:

1. Is not a ''significant regulatory action'' under Executive Order 12866;

2. Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

3. Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by Reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) AD 93–17–13, Amendment 39–8684 (58 FR 51770, October 5, 1993) and adding the following new airworthiness directive (AD):

Sikorsky Aircraft Corporation (Type Certificate Previously Held By Schweizer Aircraft Corporation): Docket No. FAA–2016–6968; Directorate Identifier 2015–SW–020–AD.

(a) Applicability

This AD applies to Model TH55A, 269A, 269A–1, 269B, 269C and 269C–1 helicopters, with a lower coupling driveshaft (driveshaft) part number (P/N) 269–5412, 269A5504, 269A5504–003, 269A5504–005, 269A5559, or 269A5559–003 installed, certificated in any category.

(b) Unsafe Condition

This AD defines the unsafe condition as failure of a driveshaft. This condition could result in loss of power to the rotor system and subsequent loss of helicopter control.

(c) Affected ADs

This AD supersedes AD 93–17–13, Amendment 39–8684 (58 FR 51770, October 5, 1993).

(d) Comments Due Date

We must receive comments by March 6, 2017.

(e) Compliance

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

(f) Required Actions

(1) Within 25 hours time-in-service (TIS), install engine and rotor tachometer markings in accordance with Part II of Schweizer Aircraft Service Bulletin B–257.1, dated May 21, 1993.

(2) Within 25 hours TIS and thereafter at intervals not to exceed 150 hours TIS:

(i) Visually inspect the driveshaft for corrosion, a pit, a nick, a scratch, a dent, and a crack in accordance with the Accomplishment Instructions, paragraph 3.B.(1) through 3.B.(6) of Sikorsky 269C Helicopter Alert Service Bulletin B–307, Basic Issue, dated December 18, 2014 (269C ASB), or Sikorsky 269C–1 Helicopter Alert Service Bulletin C1B–043, Basic Issue, dated December 18, 2014 (269C–1 ASB), whichever is applicable for your model helicopter, except we do not require that you use a Sikorsky recommended vendor list. If there is any corrosion, a pit, a nick, a scratch, a dent, or a crack, replace the driveshaft before further flight.

(ii) If there is no corrosion and no pits, nicks, scratches, dents, and cracks, magnetic particle inspect the driveshaft for a crack in accordance with paragraph 3.C.(1) of the 269C ASB or 269C–1 ASB, whichever is applicable for your model helicopter. This magnetic particle inspection must be performed by a Level II or higher technician with the National Aerospace Standard 410 or equivalent certification who has performed a magnetic particle inspection within the last 12 months. If there is a crack, replace the driveshaft before further flight.

(g) Credit for Actions Previously Completed

Compliance with paragraph (a)(1) of AD 93–17–13, Amendment 39–8684 (58 FR 51770, October 5, 1993) before the effective date of this AD is considered acceptable for compliance with the actions specified in paragraph (f)(1) of this AD.

(h) Alternative Methods of Compliance (AMOC)

(1) The Manager, Boston Aircraft Certification Office, FAA, may approve AMOCs for this AD. Send your proposal to: Blaine Williams, Aerospace Engineer, Boston Aircraft Certification Office, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, Massachusetts 01803; telephone (781) 238–7161; email *blaine.williams@faa.gov.*

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office before operating any aircraft complying with this AD through an AMOC.

(i) Additional Information

For service information identified in this AD, contact Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1–800–Winged-S or 203–416–4299; email *wcs_cust_service_eng.gr-sik@lmco.com.* You may review a copy of information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N–321, Fort Worth, TX 76177.

(j) Subject

Joint Aircraft Service Component (JASC) Code: 6300, Main Rotor Drive System.

Issued in Fort Worth, Texas, on December 21, 2016.

Lance T. Gant,

Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. 2016–31622 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2016–9521; Directorate Identifier 2016–NM–061–AD]

RIN 2120–AA64

Airworthiness Directives; Airbus Defense and Space S.A. (Formerly Known as Construcciones Aeronauticas, S.A.) Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for all Airbus Defense and Space S.A. Model CN–235, CN–235–100, CN–235–200, CN–235–300, and C–295 airplanes. This proposed AD was prompted by reports of excessive play between bushings and their respective fitting housings at certain elevator fittings. This proposed AD would require a one-time detailed inspection and repetitive eddy current inspections of the elevator hinge fitting and bracket assembly, and corrective actions if necessary. We are proposing this AD to address the unsafe condition on these products.

DATES: We must receive comments on this proposed AD by February 21, 2017.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Airbus Defense and Space, Services/Engineering Support, Avenida de Aragón 404, 28022 Madrid, Spain; fax +34 91 585 31 27; email *MTA.TechnicalService@airbus.com.* You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9521; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone: 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Shahram Daneshmandi, Aerospace Engineer, International Branch, ANM–116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057–3356; telephone: 425–227–1112; fax: 425–227–1149.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include ''Docket No. FAA–2016–9521; Directorate Identifier 2016–NM–061–AD'' at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD based on those comments.

We will post all comments we receive, without change, to *http://www.regulations.gov,* including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EADS AD 2016–0075, dated April 19, 2016 (referred to after this as the Mandatory Continuing Airworthiness Information, or ''the MCAI''), to correct an unsafe condition for all Airbus Defense and Space S.A. Model CN–235, CN–235–100, CN–235–200, CN–235–300, and C–295 airplanes. The MCAI states:

> Excessive play between bushings and their respective fitting housing was reported at Stabilizer Station (STA) 4850, affecting the outboard and inboard elevator hinge fittings and attachment fittings; and the horizontal stabilizer elevator linkage. Additionally, excessive misalignment was detected between the elevator hinge fittings and the elevator brackets during further analysis of the reported cases. Furthermore, an occurrence of an elevator hinge fitting crack was reported.
>
> This condition, if not detected and corrected, could lead to failure or detachment of any of the affected structural parts, possibly resulting in reduced control of the aeroplane.
>
> To address this potentially unsafe condition, Airbus Defence & Space (D&S) issued Alert Operator Transmissions (AOT) AOT–CN235–55–0001 Revision 2 and AOT–C295–55–0001 Revision 2 to provide inspection instructions to detect misalignment between the elevator hinge fittings and the elevator brackets. Additionally, Airbus D&S issued AOT–CN235–55–0003 and AOT–C295–55–0003 to provide inspection instructions to detect cracking of elevator hinge fitting and attachment fitting.
>
> For the reasons described above, this [EASA] AD requires a one-time [detailed] inspection of the elevator hinge fittings and the elevator brackets, repetitive [eddy current] inspections of elevator hinge fittings and attachment fittings, and depending on findings, accomplishment of applicable corrective action(s) [*e.g.* repair(s)].

You may examine the MCAI in the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9521.

Related Service Information Under 1 CFR Part 51

Airbus Defense and Space S.A. has issued the following Alert Operators Transmissions (AOT).

- Airbus Defense and Space S.A. AOT AOT–CN235–55–0001, Revision 2, dated March 10, 2015. The service information describes procedures for a detailed visual inspection of the elevator hinge fitting and bracket assembly to detect excessive play between bushings and their respective fitting housings, and to detect cracks; and corrective actions if necessary.
- Airbus Defense and Space S.A. AOT AOT–CN235–55–0003, dated December 22, 2015. The service information describes procedures for repetitive eddy current inspections to detect cracks in the elevator hinge fitting and bracket assembly, and corrective actions if necessary.
- Airbus Defense and Space S.A. AOT AOT–C295–55–0001, Revision 2, dated April 09, 2015. The service information describes procedures for a detailed visual inspection of the elevator hinge fitting and bracket assembly to detect excessive play between bushings and their respective fitting housings, and to detect cracks; and corrective actions if necessary.
- Airbus Defense and Space S.A. AOT AOT–C295–55–0003, dated December 22, 2015. The service information describes procedures for repetitive eddy current inspections to detect cracks in the elevator hinge fitting and bracket assembly, and corrective actions if necessary.

These documents are distinct since they apply to different airplane models in different configurations. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

FAA's Determination and Requirements of This Proposed AD

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are proposing this AD because we evaluated all pertinent information and determined an unsafe condition exists and is likely to exist or develop on other products of these same type designs.

Differences Between This Proposed AD and the MCAI or Service Information

The MCAI allows credit for an inspection done in accordance with the following Airbus Defense and Space S.A. AOTs, as applicable:

- AOT–CN235–55–0001, dated December 16, 2014, or
- AOT–C295–55–0001, dated December 16, 2014.

This proposed AD does not give credit for accomplishing those initial issues of the service information because the inspection requirements are different from the initial issues of the service information in both Revision 1 and Revision 2 of Airbus Defense and Space AOT AOT–CN235–55–0001, and AOT AOT–C295–55–0001.

Also, the MCAI identifies a date for Revision 1 of Airbus Defense and Space S.A. AOT AOT–C295–55–0001, which was corrected by Revision 2 of the same service information. Paragraph (m), ''Credit for Previous Actions,'' of this proposed AD shows the correct date.

Costs of Compliance

We estimate that this proposed AD affects 14 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	2 work-hours × $85 per hour = $170 per inspection cycle.	$0	$170 per inspection cycle	$2,380 per inspection cycle.

We estimate the following costs to do any necessary repairs that would be required based on the results of the proposed inspection. We have no way of determining the number of airplanes that might need this repair:

ON-CONDITION COSTS

Action	Labor cost	Parts cost	Cost per product
Repair	45 work-hours × $85 per hour = $3,825	$10,000	$13,825

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. ''Subtitle VII: Aviation Programs,'' describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in ''Subtitle VII, Part A, Subpart III, Section 44701: General requirements.'' Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

1. Is not a ''significant regulatory action'' under Executive Order 12866;

2. Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);

3. Will not affect intrastate aviation in Alaska; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Airbus Defense and Space S.A. (Formerly Known as Construcciones Aeronauticas, S.A.): Docket No. FAA–2016–9521; Directorate Identifier 2016–NM–061–AD.

(a) Comments Due Date

We must receive comments by February 21, 2017.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Airbus Defense and Space S.A. (formerly known as Construcciones Aeronauticas, S.A.) Model CN–235, CN–235–100, CN–235–200, CN–235–300, and C–295 airplanes, certificated in any category, all manufacturer serial numbers.

(d) Subject

Air Transport Association (ATA) of America Code 55, Stabilizers.

(e) Reason

This AD was prompted by reports of excessive play between bushings and their respective fitting housings at certain elevator fittings. We are issuing this AD to prevent excessive play between bushings and their respective fitting housings, which could lead to failure or detachment of any of the affected structural parts, with a possible result of reduced control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) One-Time Detailed Visual Inspection

Before exceeding 600 flight hours since first flight of the airplane, or within 300 flight hours after the effective date of this AD, whichever occurs later, but not before exceeding 300 flight hours since first flight of the airplane: Do a detailed visual inspection of the elevator hinge fitting and bracket assembly to detect excessive play between bushings and their respective fitting housings, and to detect cracks, in accordance with the instructions of Airbus Defense and Space S.A. Alert Operators Transmission

(AOT) AOT–CN235–55–0001, Revision 2, dated March 10, 2015; or AOT AOT–C295–55–0001, Revision 2, dated April 9, 2015; as applicable.

(h) Corrective Action for Discrepancies Found During Detailed Visual Inspection

If, during the inspection required by paragraph (g) of this AD, any discrepancy is detected, as defined in the instructions of Airbus Defense and Space S.A. AOT AOT–CN235–55–0001, Revision 2, dated March 10, 2015; or AOT AOT–C295–55–0001 Revision 2, dated April 9, 2015; as applicable: Before further flight, accomplish applicable corrective actions, in accordance with the instructions of Airbus Defense and Space S.A. AOT AOT–CN235–55–0001, Revision 2, dated March 10, 2015; or AOT AOT–C295–55–0001, Revision 2, dated April 9, 2015; as applicable. Where Airbus Defense and Space S.A. AOT AOT–CN235–55–0001, Revision 2, dated March 10, 2015; or AOT AOT–C295–55–0001 Revision 2, dated April 9, 2015; specifies to contact Airbus Defense and Space S.A. for corrective actions, before further flight, accomplish corrective actions in accordance with the procedures specified in paragraph (n)(2) of this AD.

(i) Repetitive Eddy Current Inspections—Model CN–235, CN–235–100, CN–235–200, and CN–235–300 Airplanes

For Model CN–235, CN–235–100, CN–235–200, and CN–235–300 airplanes: Do the actions required by paragraphs (i)(1) and (i)(2) of this AD.

(1) Within the applicable compliance time specified in table 1 to paragraph (i)(1) of this AD: Do an eddy current inspection to detect cracks in the elevator hinge fitting and bracket assembly, in accordance with the instructions of Airbus Defense and Space S.A. AOT AOT–CN235–55–0003, dated December 22, 2015.

TABLE 1 TO PARAGRAPH (I)(1) OF THIS AD—INITIAL COMPLIANCE TIMES FOR MODEL CN–235, CN–235–100, CN–235–200, AND CN–235–300 AIRPLANES

Manufacturer's Serial Number (MSN)	Elevator hinge fitting (part No.)	Compliance time for initial eddy current inspection (whichever occurs later)	
MSN001 through MSN154 inclusive.	35–31193–0201 35–31193–0202	Before exceeding 8,800 flight cycles since first flight of the airplane; or before exceeding the applicable flight hours since first flight of the airplane as calculated in table 2 to paragraph (i)(1) of this AD; whichever occurs first.	Within 300 flight cycles after the effective date of this AD.
MSN155 through MSN241 inclusive.	35–31193–0501 35–31193–0502	Before exceeding 3,600 flight cycles since first flight of the airplane; or before exceeding the applicable flight hours since first flight of the airplane as calculated in table 2 to paragraph (i)(1) of this AD; whichever occurs first.	Within 300 flight cycles after the effective date of this AD.
MSN242 through MSN999 inclusive.	35–31193–0503 35–31193–0504	Before exceeding 1,000 flight cycles since first flight of the airplane; or before exceeding the applicable flight hours since first flight of the airplane as calculated in table 2 to paragraph (i)(1) of this AD; whichever occurs first.	Within 50 flight cycles after the effective date of this AD.

TABLE 2 TO PARAGRAPH (I)(1) OF THIS AD—FLIGHT CYCLES TO FLIGHT HOURS CONVERSION SINCE FIRST FLIGHT OF THE AIRPLANE

CN–235 model/version	Civilian or military type certificate	Flight cycles to flight hours conversion
CN–235 (Commercial Identification S10).	Civilian	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 0.861.
CN–235–100	Civilian	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 0.861.
CN–235–200	Civilian	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 0.806.
CN–235–300	Civilian	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 0.861.
CN–235 (Commercial Identification S10M).	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 0.861.
CN–235–100M	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 2.222.
CN–235–200M	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 2.222.
CN–235–300M	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 2.167.
CN–235–100M/IR01	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 1.389.
CN–235–100M/EA02V	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 1.389.
CN–235–200M/CL02	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 1.389.
CN–235/EA01F (Commercial Identification S10M).	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 0.861.
CN–235–300/SM01	Civilian	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 3.125.
CN–235–300M/CG01, –300M/GC01, –300/MM01, –300/CL04.	Military	Flight hours since first flight of the airplane = the applicable flight cycles from table 1 to paragraph (i)(1) of this AD × 3.125.

(2) Repeat the eddy current inspection specified in paragraph (i)(1) of this AD thereafter within the applicable interval specified in table 3 to paragraph (i)(2) of this AD.

TABLE 3 TO PARAGRAPH (i)(2) OF THIS AD—REPETITIVE INSPECTION INTERVALS

Manufacturer's serial No.	Elevator attachment fitting (P/N)	Compliance time for repetitive eddy current inspections
MSN001 through MSN154 inclusive ...	35–31193–0201 35–31193–0202	Before exceeding 1,300 flight cycles since the most recent inspection; or before exceeding the applicable flight hours since the most recent inspection as calculated in table 4 to paragraph (i)(2) of this AD; whichever occurs first.
MSN155 through MSN241 inclusive ...	35–31193–0501 35–31193–0502	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding the applicable flight hours since the most recent inspection as calculated in table 4 to paragraph (i)(2) of this AD; whichever occurs first.
MSN242 through MSN999 inclusive ...	35–31193–0503 35–31193–0504	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding the applicable flight hours since the most recent inspection as calculated in table 4 to paragraph (i)(2) of this AD; whichever occurs first.

TABLE 4 TO PARAGRAPH (i)(2) OF THIS AD—FLIGHT CYCLES TO FLIGHT HOURS CONVERSION FOR REPETITIVE INSPECTIONS

CN–235 model/version	Civilian or military type certificate	Flight cycles to flight hours conversion
CN–235 (Commercial Identification S10).	Civilian	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 0.861.
CN–235–100	Civilian	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 0.861.
CN–235–200	Civilian	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 0.806.
CN–235–300	Civilian	Flight hours since first flight of the airplane = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 0.861.
CN–235 (Commercial Identification S10M).	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 0.861.
CN–235–100M	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 2.222.
CN–235–200M	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 2.222.
CN–235–300M	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 2.167.
CN–235–100M/IR01	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 1.389.
CN–235–100M/EA02V	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 1.389.
CN–235–200M/CL02	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 1.389.
CN–235/EA01F (Commercial Identification S10M).	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 0.861.
CN–235–300/SM01	Civilian	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 3.125.
CN–235–300M/CG01, –300M/GC01, –300/MM01, –300/CL04.	Military	Flight hours since most recent inspection = the applicable flight cycles from table 3 to paragraph (i)(2) of this AD × 3.125.

(j) Repetitive Eddy Current Inspections—Model C–295 Airplanes

For Model C–295 airplanes: Do the actions required by paragraphs (j)(1) and (j)(2) of this AD.

(1) At the later of the times specified in table 5 to paragraph (j)(1) of this AD: Do an eddy current inspection of the elevator hinge fitting and attachment fitting to detect cracks, in accordance with the instructions of Airbus Defense and Space S.A. AOT AOT–C295–55–0003, dated December 22, 2015.

TABLE 5 TO PARAGRAPH (j)(1) OF THIS AD—INITIAL COMPLIANCE TIMES FOR MODEL C–295 AIRPLANES

C–295 model/version	Manufacturer's Serial Number (MSN)	Elevator hinge fitting (part no.)	Compliance time for initial eddy current inspection (whichever occurs later)	
C–295M/EA03(01–10), RJ01 (01–02), PO01(01–08), AG01(01–06), BR01(01–03).	MSN001 through MSN030 inclusive.	95–31193–0501 95–31193–0502	Since first flight of the airplane: Before exceeding 3,600 flight cycles; or before exceeding 5,040 flight hours; whichever occurs first.	Within 300 flight cycles after the effective date of this AD.
C–295M (from MSN 031) ...	MSN031 through MSN999 inclusive.	95–31193–0503 95–31193–0504	Since first flight of the airplane: Before exceeding 1,000 flight cycles; or before exceeding 1,400 flight hours; whichever occurs first.	Within 50 flight cycles after the effective date of this AD.
C–295M/FI01, FI02	MSN031 through MSN999 inclusive.	95–31193–0503 95–31193–0504	Since first flight of the airplane: Before exceeding 1,000 flight cycles; or before exceeding 1,000 flight hours; whichever occurs first.	Within 50 flight cycles after the effective date of this AD.
C–295M/PG01	MSN031 through MSN999 inclusive.	95–31193–0503 95–31193–0504	Since first flight of the airplane: Before exceeding 1,000 flight cycles; or before exceeding 1,400 flight hours; whichever occurs first.	Within 50 flight cycles after the effective date of this AD.
C–295M/PG02, PG03	MSN031 through MSN999 inclusive.	95–31193–0503 95–31193–0504	Since first flight of the airplane: Before exceeding 1,000 flight cycles; or before exceeding 1,900 flight hours; whichever occurs first.	Within 50 flight cycles after the effective date of this AD.
C–295M/CH01	MSN031 through MSN999 inclusive.	95–31193–0503 95–31193–0504	Since first flight of the airplane: Before exceeding 1,000 flight cycles; or before exceeding 1,200 flight hours; whichever occurs first.	Within 50 flight cycles after the effective date of this AD.
C–295M/CH02, OM03	MSN031 through MSN999 inclusive.	95–31193–0503 95–31193–0504	Since first flight of the airplane: Before exceeding 1,000 flight cycles; or before exceeding 1,500 flight hours; whichever occurs first.	Within 50 flight cycles after the effective date of this AD.
C–295MW	MSN031 through MSN999 inclusive.	95–31193–0503 95–31193–0504	Since first flight of the airplane: Before exceeding 1,000 flight cycles; or before exceeding 1,400 flight hours; whichever occurs first.	Within 50 flight cycles after the effective date of this AD.

(2) Repeat the eddy current inspection specified in paragraph (j)(1) of this AD thereafter within the applicable interval specified in table 6 to paragraph (j)(2) of this AD.

TABLE 6 TO PARAGRAPH (j)(2) OF THIS AD—REPETITIVE INSPECTION INTERVALS FOR MODEL C–295 AIRPLANES

C–295 model/version	Manufacturer's Serial Number (MSN)	Elevator hinge fitting (part no.)	Compliance time for repetitive eddy current inspections
C–295M/EA03(01–10), RJ01 (01–02), PO01(01–08), AG01(01–06), BR01(01–03).	MSN001 through MSN030 inclusive ..	95–31193–0501 95–31193–0502	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding 1,400 flight hours since the most recent inspection; whichever occurs first.
C–295M (from MSN 031)	MSN031 through MSN999 inclusive ..	95–31193–0503 95–31193–0504	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding 1,400 flight hours since the most recent inspection; whichever occurs first.

TABLE 6 TO PARAGRAPH (j)(2) OF THIS AD—REPETITIVE INSPECTION INTERVALS FOR MODEL C–295 AIRPLANES—Continued

C–295 model/version	Manufacturer's Serial Number (MSN)	Elevator hinge fitting (part no.)	Compliance time for repetitive eddy current inspections
C–295M/FI01, FI02	MSN031 through MSN999 inclusive	95–31193–0503 95–31193–0504	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding 1,000 flight hours since the most recent inspection; whichever occurs first.
C–295M/PG01	MSN031 through MSN999 inclusive	95–31193–0503 95–31193–0504	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding 1,400 flight hours since the most recent inspection; whichever occurs first.
C–295M/PG02, PG03	MSN031 through MSN999 inclusive	95–31193–0503 95–31193–0504	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding 1,900 flight hours since the most recent inspection; whichever occurs first.
C–295M/CH01	MSN031 through MSN999 inclusive	95–31193–0503 95–31193–0504	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding 1,200 flight hours since the most recent inspection; whichever occurs first.
C–295M/CH02, OM03	MSN031 through MSN999 inclusive	95–31193–0503 95–31193–0504	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding 1,500 flight hours since the most recent inspection; whichever occurs first.
C–295MW	MSN031 through MSN999 inclusive	95–31193–0503 95–31193–0504	Before exceeding 1,000 flight cycles since the most recent inspection; or before exceeding 1,400 flight hours since the most recent inspection; whichever occurs first.

(k) Corrective Action for Discrepancies Found During Eddy Current Inspection

If, during any inspection required by paragraph (i)(1), (i)(2), (j)(1), or (j)(2) of this AD, any crack is detected, as defined in Airbus Defense and Space S.A. AOT AOT–CN235–55–0003, dated December 22, 2015; or AOT AOT–C295–55–0003, dated December 22, 2015; as applicable: Before further flight, accomplish applicable corrective actions in accordance with the instructions of Airbus Defense and Space S.A. AOT AOT–CN235–55–0003, dated December 22, 2015; or AOT AOT–C295–55–0003, dated December 22, 2015; as applicable. Where Airbus Defense and Space S.A. AOT AOT–CN235–55–0003, dated December 22, 2015; or AOT AOT–C295–55–0003, dated December 22, 2015; specifies to contact Airbus Defense and Space S.A. for corrective actions, before further flight, accomplish corrective actions in accordance with the procedures specified in paragraph (n)(2) of this AD.

(l) Provision Regarding Terminating Action

Accomplishing corrective actions, as required by paragraph (k) of this AD, does not constitute terminating action for the repetitive inspections required by paragraphs (i)(2) and (j)(2) of this AD, unless explicitly stated in the approved method of compliance for the corrective action.

(m) Credit for Previous Actions

This paragraph provides credit for the actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using Airbus Defense and Space S.A. AOT AOT–CN235–55–0001, Revision 1, dated March 6, 2015; or AOT AOT–C295–55–0001, Revision 1, dated May 29, 2014.

(n) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, International Branch, ANM–116, Transport Airplane Directorate, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to ATTN: Shahram Daneshmandi, Aerospace Engineer, International Branch, ANM–116, Transport Airplane Directorate, FAA, 1601 Lind Avenue SW., Renton, WA 98057–3356; telephone: 425–227–1112; fax: 425–227–1149. Information may be emailed to: *9-ANM-116-AMOC-REQUESTS@faa.gov.* Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Branch, ANM–116, Transport Airplane Directorate, FAA; or EASA; or Airbus Defense and Space S.A.'s EASA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

(o) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA AD 2016–0075, dated April 19, 2016, for related information. This MCAI may be found in the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2016–9521.

(2) For service information identified in this AD, contact Airbus Defense and Space, Services/Engineering Support, Avenida de Aragón 404, 28022 Madrid, Spain; fax +34 91 585 31 27; email *MTA.TechnicalService@airbus.com.* You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425–227–1221.

Issued in Renton, Washington, on December 16, 2016.

Ross Landes,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2016–31365 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2016–9556; Airspace Docket No. 16–AEA–2]

RIN 2120–AA66

Proposed Establishment and Modification of Area Navigation Routes, Atlantic Coast Route Project; Northeastern United States.

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This action proposes to establish 12 high altitude area navigation (RNAV) routes (Q-routes), and modify one existing Q-route, in support of the Atlantic Coast Route Project (ACRP). The ACRP goal is to implement a Performance Based Navigation (PBN) route structure within the heavily traveled and constricted airspace along the Atlantic coast of the United States (U.S.)

DATES: Comments must be received on or before February 21, 2017.

ADDRESSES: Send comments on this proposal to the U.S. Department of Transportation, Docket Operations, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 20590; telephone: 1(800) 647–5527 or (202) 366–9826. You must identify FAA Docket No. FAA–2016–9556 and Airspace Docket No. 16–AEA–2 at the beginning of your comments. You may also submit comments through the Internet at *http://www.regulations.gov.* You may review the public docket containing the proposal, any comments received, and any final disposition in person in the Dockets Office between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone: 1(800) 647–5527), is on the ground floor of the building at the above address.

FAA Order 7400.11A, Airspace Designations and Reporting Points, and subsequent amendments can be viewed online at *http://www.faa.gov/air_traffic/publications/.* For further information, you can contact the Airspace Policy Group, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone: (202) 267–8783. The Order is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of FAA Order 7400.11A at NARA, call (202) 741–6030, or go to *http://www.archives.gov/federal_register/code_of_federal-regulations/ibr_locations.html.*

FAA Order 7400.11, Airspace Designations and Reporting Points, is published yearly and effective on September 15.

FOR FURTHER INFORMATION CONTACT: Paul Gallant, Airspace Policy Group, Office of Airspace Services, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone: (202) 267–8783.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority. This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This regulation is within the scope of that authority as it expands the availability of area navigation routes in the northeastern United States to enhance the efficient flow of air traffic.

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal.

Communications should identify both docket numbers (FAA Docket No. FAA–2016–9556 and Airspace Docket No. 16–AEA–2) and be submitted in triplicate to the Docket Management Facility (see **ADDRESSES** section for address and phone number). You may also submit comments through the Internet at *http://www.regulations.gov.*

Commenters wishing the FAA to acknowledge receipt of their comments on this action must submit with those comments a self-addressed, stamped postcard on which the following statement is made: ''Comments to FAA Docket No. FAA–2016–9556 and Airspace Docket No. 16–AEA–2.'' The postcard will be date/time stamped and returned to the commenter.

All communications received on or before the specified comment closing date will be considered before taking action on the proposed rule. The proposal contained in this action may be changed in light of comments received. All comments submitted will be available for examination in the public docket both before and after the comment closing date. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRM's

An electronic copy of this document may be downloaded through the Internet at *http://www.regulations.gov.* Recently published rulemaking documents can also accessed through the FAA's Web page at *http://www.faa.gov/air_Traffic/publications/airspace_amendments.*

You may review the public docket containing the proposal, any comments received and any final disposition in person in the Dockets Office (see **ADDRESSES** section for address and phone number) between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. An informal docket may also be examined during normal business hours at the office of the Eastern Service Center, Federal Aviation Administration, Room 210, 1701 Columbia Ave., College Park, GA 30337.

Availability and Summary of Documents for Incorporation by Reference

This document proposes to amend FAA Order 7400.11A, Airspace Designations and Reporting Points, dated August 3, 2016, and effective September 15, 2016. FAA Order 7400.11A is publicly available as listed in the **ADDRESSES** section of this proposed rule. FAA Order 7400.11A lists Class A, B, C, D, and E airspace areas, air traffic service routes, and reporting points.

Background

The Atlantic Coast Route Project (ACRP) is the first phase of FAA's plan to implement a PBN route structure across the U.S. It would consist primarily of North/South oriented, high-altitude RNAV routes (Q routes) extending from New England to Southern Florida and linking to the Caribbean. The eastern seaboard is an

area containing heavily traveled and constricted airspace.

ACRP aims to couple the stakeholder desire for route flexibility with the route structure needed to support higher air traffic demand levels. As a continuation of FAA's commitment to streamline the National Airspace System (NAS) and realize the benefits of PBN advancements, ARCP seeks to establish a framework for the effective transition away from the less efficient jet route system that is constricted by the current ground-based navigation infrastructure.

The ACRP, itself, would be implemented in two phases. The first phase would establish routes primarily in airspace in the northeastern U.S. that is controlled by Boston Air Route Traffic Control Center (ARTCC) and New York ARTCC. Phase 2 would implement new routes from south of New York ARTCC's airspace to the Caribbean area through separate rulemaking action.

Key guidelines driving the scope of the ACRP effort include:

Reduce the overall route structure;

Reduce ATC facility sector complexity and controller workload;

Reduce flying miles; and

Maintain or improve ATC facility sector throughput.

The Proposal

The FAA is proposing an amendment to Title 14, Code of Federal Regulations (14 CFR) part 71 to establish 12 new Q-routes along the Atlantic Coast, in the northeastern U.S. The new routes, designated Q–75, Q–97, Q–167, Q–220, Q–411, Q–419, Q–430, Q–437, Q–439, Q–445, Q–450 and Q–479, would improve NAS efficiency and facilitate the transition from the current jet route system along the Atlantic Coast of the U.S. The proposed routes' end points are listed below. Full route descriptions are in ''The Proposed Amendment'' section of this notice.

Q–75: The route would extend between Greensboro, NC, and the Boston, MA, area.

Q–97: The route would extend between the HEADI, NJ WP, and the Qubis Canada WP just north of the Maine border.

Q–167: The route would extend between the YAZUU fix (off the coast of New Jersey) and the SSOXS fix south of Boston, MA.

Q–220: The route would extend between the RIFLE fix (south of Long Island, NY) and the LARIE WP over Cape Cod, MA.

Q–411: The route would extend between the Robbinsville, NJ, VORTAC and the FOXWD WP, CT.

Q–419: The route would extend between the Robbinsville, NJ, VORTAC and the Deer Park, NY VOR/DME.

Q–430: The route would extend between the COPES, PA, fix and the Nantucket, MA, VOR/DME.

Q–437: The route would extend between the VILLS, NJ, fix and the KOSPE, VT, fix.

Q–439: The route would extend between the BRIGS, NJ, fix and the Presque Isle, ME, VOR/DME.

Q–445: The route would extend between the BRIGS, NJ, fix and the KYSKY, NY, fix (south of Long Island, NY).

Q–450: The route would extend between the HNNAH, NJ, fix and the Deer Park, NY, VOR/DME.

Q–479: The route would extend between the LEEAH, NJ, fix and the PONCT, NY, WP.

In addition to adding the 12 new Q-Routes, the FAA proposes to amend existing route Q–480 by adding two new waypoints (WP), KYLOH, NH and BEEKN, ME, along the current route between the Barnes, MA, VORTAC and the Kennebunk, ME, VOR/DME. This would provide connectivity and facilitate transitions between Q–480 and the new routes Q–97 and Q–439.

RNAV routes are published in paragraph 2006 of FAA Order 7400.11A dated August 3, 2016, and effective September 15, 2016, which is incorporated by reference in 14 CFR 71.1. The RNAV routes listed in this document will be subsequently published in the Order.

Regulatory Notices and Analyses

The FAA has determined that this proposed regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore: (1) Is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under Department of Transportation (DOT) Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this proposed rule, when promulgated, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Environmental Review

This proposal will be subject to an environmental analysis in accordance with FAA Order 1050.1F, ''Environmental Impacts: Policies and Procedures'' prior to any FAA final regulatory action.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for part 71 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of FAA Order 7400.11A, Airspace Designations and Reporting Points, dated August 3, 2016, and effective September 15, 2016, is amended as follows:

Paragraph 2006 United States Area Navigation Routes.

* * * * *

Q–75 Greensboro, NC (GSO) to COPLY, MA [New]

Greensboro, NC (GSO)	VORTAC	(Lat. 36°02′44.49″ N., long. 79°58′34.95″ W.)
DRAIK, VA	FIX	(Lat. 37°08′02.15″ N., long. 78°58′58.56″ W.)
Gordonsville, VA (GVE)	VORTAC	(Lat. 38°00′48.96″ N., long. 78°09′10.89″ W.)
BINKS, MD	FIX	(Lat. 39°03′07.04″ N., long. 77°01′47.57″ W.)
MURPH, MD	FIX	(Lat. 39°27′51.22″ N., long. 76°23′07.24″ W.)
SACRI, MD	FIX	(Lat. 39°36′07.34″ N., long. 76°10′24.70″ W.)
STOEN, PA	FIX	(Lat. 39°50′17.54″ N., long. 75°47′54.92″ W.)
Modena, PA (MXE)	VORTAC	(Lat. 39°55′05.00″ N., long. 75°40′14.91″ W.)
COPES, PA	FIX	(Lat. 40°07′50.58″ N., long. 75°22′36.37″ W.)
BIGGY, NJ	FIX	(Lat. 40°25′10.76″ N., long. 74°58′21.57″ W.)
Solberg, NJ (SBJ)	VOR/DME	(Lat. 40°34′58.96″ N., long. 74°44′30.46″ W.)

JERSY, NJ	FIX	(Lat. 40°47′28.99″ N., long. 74°23′58.00″ W.)
DUEYS, NY	FIX	(Lat. 41°09′09.46″ N., long. 73°47′48.52″ W.)
BIZEX, NY	WP	(Lat. 41°17′02.86″ N., long. 73°34′50.20″ W.)
GREKI, CT	FIX	(Lat. 41°28′48.03″ N., long. 73°18′50.98″ W.)
NELIE, CT	FIX	(Lat. 41°56′27.64″ N., long. 72°41′18.88″ W.)
SWALO, MA	FIX	(Lat. 42°03′55.75″ N., long. 72°11′37.10″ W.)
Boston, MA	VOR/DME	(Lat. 42°21′26.82″ N., long. 70°59′22.37″ W.)
COPLY, MA	WP	(Lat. 42°29′52.21″ N., long. 70°33′28.57″ W.)

Q–97 HEADI, NJ to QUIBIS, Canada [New]

HEADI, NJ	WP	(Lat. 39°57′49.56″ N., long. 73°43′28.85″ W.)
SAILN, OA	WP	(Lat. 40°15′15.92″ N., long. 73°27′01.93″ W.)
Calverton, NY (CCC)	VOR/DME	(Lat. 40°55′46.63″ N., long. 72°47′55.89″ W.)
NTMEG, CT	WP	(Lat. 41°16′30.75″ N., long. 72°28′52.08″ W.)
VENTE, MA	WP	(Lat. 42°08′24.33″ N., long. 71°53′38.08″ W.)
MANCH, NH	WP	(Lat. 42°52′12.03″ N., long. 71°22′06.54″ W.)
KYLOH, NH	WP	(Lat. 43°03′53.11″ N., long. 71°13′45.49″ W.)
SERPA, ME	FIX	(Lat. 43°50′23.48″ N., long. 70°39′56.87″ W.)
ANSYN, ME	FIX	(Lat. 44°44′46.04″ N., long. 70°00′09.03″ W.)
QUBIS, Canada	WP	(Lat. 47°32′00.15″ N., long. 67°45′58.09″ W.)
Excluding the airspace in Canada.		

Q–167 YAZUU, OA to SSOXS, MA [New]

YAZUU, OA	FIX	(Lat. 39°24′44.82″ N., long. 74°01′01.55″ W.)
TOPRR, OA	WP	(Lat. 39°50′49.13″ N., long. 73°32′12.02″ W.)
EMJAY, OA	FIX	(Lat. 40°05′34.89″ N., long. 73°15′42.31″ W.)
RIFLE, NY	FIX	(Lat. 40°41′24.18″ N., long. 72°34′54.89″ W.)
ORCHA, NY	WP	(Lat. 40°55′08.37″ N., long. 72°19′00.15″ W.)
ALBOW, NY	WP	(Lat. 41°02′04.04″ N., long. 71°58′30.69″ W.)
WIKKD, NY	WP	(Lat. 41°08′42.80″ N., long. 71°45′27.74″ W.)
NESTT, RI	WP	(Lat. 41°21′35.84″ N., long. 71°20′05.38″ W.)
BUZRD, MA	WP	(Lat. 41°32′45.88″ N., long. 70°57′50.69″ W.)
SSOXS, MA	FIX	(Lat. 41°50′12.62″ N., long. 70°44′46.26″ W.)

Q–220 RIFLE, NY to LARIE, MA [New]

RIFLE, NY	FIX	(Lat. 40°41′24.18″ N., long. 72°34′54.89″ W.)
ORCHA, NY	WP	(Lat. 40°55′08.37″ N., long. 72°19′00.15″ W.)
ALBOW, NY	WP	(Lat. 41°02′04.04″ N., long. 71°58′30.69″ W.)
Sandy Point, RI (SEY)	VOR/DME	(Lat. 41°10′02.77″ N., long. 71°34′33.91″ W.)
SKOWL, RI	WP	(Lat. 41°15′47.18″ N., long. 71°16′44.35″ W.)
JAWZZ, MA	WP	(Lat. 41°24′08.08″ N., long. 70°50′33.25″ W.)
LARIE, MA	WP	(Lat. 41°49′23.46″ N., long. 69°58′41.96″ W.)

Q–411 Robbinsville, NJ (RBV) to FOXWD, CT [New]

Robbinsville, NJ (RBV)	VORTAC	(Lat. 40°12′08.65″ N., long. 74°29′42.09″ W.)
LAURN, NY	WP	(Lat. 40°33′00.81″ N., long. 74°07′07.15″ W.)
LLUND, NY	FIX	(Lat. 40°51′45.04″ N., long. 73°46′57.30″ W.)
BAYYS, CT	FIX	(Lat. 41°17′21.27″ N., long. 72°58′16.73″ W,)
FOXWD, CT	WP	(Lat. 41°48′21.66″ N., long. 71°48′07.03″ W.)

Q–419 Robbinsville, NJ (RBV) to Deer Park, NY (DPK) [New]

Robbinsville, NJ (RBV)	VORTAC	(Lat. 40°12′08.65″ N., long. 74°29′42.09″ W.)
LAURN, NY	WP	(Lat. 40°33′00.81″ N., long. 74°07′07.15″ W.)
Kennedy, NY (JFK)	VOR/DME	(Lat. 40°37′58.40″ N., long. 73°46′17.00″ W.)
Deer Park, NY (DPK)	VOR/DME	(Lat. 40°47′30.30″ N., long. 73°18′13.17″ W.)

Q–430 COPES, PA to Nantucket, MA (ACK) [New]

COPES, PA	FIX	(Lat. 40°07′50.58″ N., long. 75°22′36.37″ W.)
Robbinsville, NJ (RBV)	VORTAC	(Lat. 40°12′08.65″ N., long. 74°29′42.09″ W.)
MYRCA, NJ	WP	(Lat. 40°20′42.97″ N., long. 73°56′58.07″ W.)
CREEL, NY	FIX	(Lat. 40°26′50.51″ N., long. 73°33′10.68″ W.)
RIFLE, NY	FIX	(Lat. 40°41′24.18″ N., long. 72°34′54.89″ W.)
KYSKY, NY	FIX	(Lat. 40°46′52.75″ N., long. 72°12′21.45″ W.)
LIBBE, NY	FIX	(Lat. 41°00′15.86″ N., long. 71°21′20.34″ W.)
FLAPE, MA	FIX	(Lat. 41°03′56.30″ N., long. 71°04′10.55″ W.)
DEEPO, MA	FIX	(Lat. 41°06′53.96″ N., long. 70°50′09.85″ W.)
Nantucket, MA (ACK)	VOR/DME	(Lat. 41°16′54.79″ N., long. 70°01′36.16″ W.)

Q–437 VILLS, NJ to KOSPE, VT [New]

VILLS, NJ	FIX	(Lat. 39°18′03.87″ N., long. 75°06′37.89″ W.)
DITCH, NJ	FIX	(Lat. 39°47′37.86″ N., long. 74°42′59.88″ W.)
LUIGI, NJ	FIX	(Lat. 40°04′09.65″ N., long. 74°26′40.32″ W.)
HNNAH, NJ	FIX	(Lat. 40°28′12.73″ N., long. 74°02′36.62″ W.)
LLUND, NY	FIX	(Lat. 40°51′45.04″ N., long. 73°46′57.30″ W.)
BINGS, CT	WP	(Lat. 42°00′33.26″ N., long. 73°30′01.81″ W.)
KOSPE, VT	FIX	(Lat. 43°14′24.06″ N., long. 73°11′09.84″ W.)

Q–439 BRIGS, NJ to Presque Isle, ME (PQI) [New]

BRIGS, NJ	FIX	(Lat. 39°31′24.72″ N., long. 74°08′19.67″ W.)
DRIFT, NJ	FIX	(Lat. 39°48′53.56″ N., long. 73°40′49.53″ W.)
MANTA, NJ	FIX	(Lat. 39°54′07.01″ N., long. 73°32′31.63″ W.)
PLUME, NJ	FIX	(Lat. 40°07′06.67″ N., long. 73°17′08.03″ W.)
DUNEE, NY	FIX	(Lat. 40°19′24.38″ N., long. 73°02′26.06″ W.)
SARDI, NY	FIX	(Lat. 40°31′26.61″ N., long. 72°47′55.87″ W.)
RIFLE, NY	FIX	(Lat. 40°41′24.18″ N., long. 72°34′54.89″ W.)
FOXWD, CT	WP	(Lat. 41°48′21.66″ N., long. 71°48′07.03″ W.)
BOGRT, MA	WP	(Lat. 42°13′56.08″ N., long. 71°31′07.37″ W.)

BLENO, NH	WP	(Lat. 42°54′55.00″ N., long. 71°04′43.37″ W.)
BEEKN, ME	WP	(Lat. 43°20′51.95″ N., long. 70°44′50.28″ W.)
FRIAR, ME	FIX	(Lat. 44°26′28.93″ N., long. 69°53′04.38″ W.)
Presque Isle, ME (PQI)	VOR/DME	(Lat. 46°46′27.07″ N., long. 68°05′40.37″ W.)
Q–445 BRIGS, NJ to KYSKY, NY [New]		
BRIGS, NJ	FIX	(Lat. 39°31′24.72″ N., long. 74°08′19.67″ W.)
SHAUP, NJ	WP	(Lat. 39°44′23.91″ N., long. 73°34′33.84″ W.)
VALCO, NJ	WP	(Lat. 40°05′29.86″ N., long. 73°08′22.91″ W.)
KYSKY, NY	FIX	(Lat. 40°46′52.75″ N., long. 72°12′21.45″ W.)
Q–450 HNNAH, NJ to Deer Park, NY (DPK) [New]		
HNNAH, NJ	FIX	(Lat. 40°28′12.73″ N., long. 74°02′36.62″ W.)
Kennedy, NY (JFK)	VOR/DME	(Lat. 40°37′58.40″ N., long. 73°46′17.00″ W.)
Deer Park, NY (DPK)	VOR/DME	(Lat. 40°47′30.30″ N., long. 73°18′13.17″ W.)
Q–479 LEEAH, NJ to PONCT, NY [New]		
LEEAH, NJ	FIX	(Lat. 39°15′39.27″ N., long. 74°57′11.01″ W.)
MYRCA, NJ	WP	(Lat. 40°20′42.97″ N., long. 73°56′58.07″ W.)
Kennedy, NY (JFK)	VOR/DME	(Lat. 40°37′58.40″ N., long. 73°46′17.00″ W.)
LLUND, NY	FIX	(Lat. 40°51′45.04″ N., long. 73°46′57.30″ W.)
DUEYS, NY	FIX	(Lat. 41°09′09.46″ N., long. 73°47′48.52″ W.)
GANDE, NY	FIX	(Lat. 41°30′36.66″ N., long. 73°48′52.03″ W.)
PONCT, NY	WP	(Lat. 42°44′48.83″ N., long. 73°48′48.07″ W.)
Q–480 ZANDR, OH to Kennebunk, ME (ENE) [Amended]		
ZANDR, OH	FIX	(Lat. 40°00′18.75″ N., long. 81°31′58.35″ W,)
Bellaire, OH (AIR)	VOR/DME	(Lat. 40°01′01.29″ N., long. 80°49′02.02″ W.)
LEJOY, PA	FIX	(Lat. 40°00′12.22″ N., long. 79°24′53.61″ W.)
VINSE, PA	FIX	(Lat. 39°58′16.21″ N., long. 77°57′21.20″ W.)
BEETS, PA	FIX	(Lat. 39°57′20.57″ N., long. 77°26′59.55″ W.)
HOTEE, PA	WP	(Lat. 40°20′36.00″ N., long. 76°29′37.00″ W.)
MIKYG, PA	WP	(Lat. 40°36′06.00″ N., long. 75°49′11.00″ W.)
SPOTZ, PA	WP	(Lat. 40°45′55.00″ N., long. 75°22′59.00″ W.)
CANDR, NJ	FIX	(Lat. 40°58′15.55″ N., long. 74°57′35.38″ W.)
JEFFF, NJ	FIX	(Lat. 41°14′46.38″ N., long. 74°27′43.29″ W.)
Kingston, NY	VOR/DME	(Lat. 41°39′55.62″ N., long. 73°49′20.01″ W.)
LESWL, CT	WP	(Lat. 41°53′31.00″ N., long. 73°19′20.00″ W.)
Barnes, MA (BAF)	VORTAC	(Lat. 42°09′43.05″ N., long. 72°42′58.32″ W.)
KYLOH, NH	WP	(Lat. 43°03′53.11″ N., long. 71°13′45.49″ W.)
BEEKN, ME	WP	(Lat. 43°20′51.95″ N., long. 70°44′50.28″ W.)
Kennebunk, ME (ENE)	VOR/DME	(Lat. 43°25′32.42″ N., long. 70°36′48.69″ W.)

* * * * *

Issued in Washington, DC, on December 20, 2016.

Leslie M. Swann,

Acting Manager, Airspace Policy Group.

[FR Doc. 2016–31911 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2016–9264; Airspace Docket No. 16–AWP–1]

RIN 2120–AA66

Proposed Establishment, Modification and Revocation of Air Traffic Service (ATS) Routes; Western United States

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This action proposes to modify three jet routes and four VHF Omnidirectional Range (VOR) Federal airways; remove two VOR Federal Airway routes, and establish four and modify four low altitude Area Navigation (RNAV) routes (T-routes) in the western United States. The FAA is proposing this action due to the scheduled decommissioning of the Manteca, CA, and Maxwell, CA, VOR facilities, which provide navigation guidance for portions of the affected routes. This action would enhance the safety and management of aircraft within these routes in the National Airspace System (NAS).

DATES: Comments must be received on or before February 21, 2017.

ADDRESSES: Send comments on this proposal to the U.S. Department of Transportation, Docket Operations, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 20590; telephone: 1(800) 617–5527, or (202) 366–9826. You must identify FAA Docket No. FAA–2016–9264 and Airspace Docket No. 16–AWP–1 at the beginning of your comments. You may also submit comments through the Internet at *http://www.regulations.gov.*

FAA Order 7400.11A, Airspace Designations and Reporting Points, and subsequent amendments can be viewed online at *http://www.faa.gov/air_traffic/publications/.* For further information, you can contact the Airspace Policy Group, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC, 20591; telephone: (202) 267–8783. The Order is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of FAA Order 7400.11A at NARA, call (202) 741–6030, or go to *http://www.archives.gov/federal_register/code_of_federal-regulations/*ibr_locations.html.

FAA Order 7400.11, Airspace Designations and Reporting Points, is published yearly and effective on September 15.

FOR FURTHER INFORMATION CONTACT: Kenneth Ready, Airspace Policy Group, Office of Airspace Services, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone: (202) 267–8783.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority. This rulemaking is

promulgated under the authority described in Subtitle VII, Part A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This regulation is within the scope of that authority as it modifies the route structure as necessary to preserve the safe and efficient flow of air traffic within the NAS.

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal.

Communications should identify both docket numbers (FAA Docket No. FAA–2016–9264 and Airspace Docket No. 16–AWP–1) and be submitted in triplicate to the Docket Management Facility (see **ADDRESSES** section for address and phone number). You may also submit comments through the Internet at *http://www.regulations.gov.*

Commenters wishing the FAA to acknowledge receipt of their comments on this action must submit with those comments a self-addressed, stamped postcard on which the following statement is made: ''Comments to FAA Docket No. FAA–2016–9264, and Airspace Docket No. 16–AWP–1.'' The postcard will be date/time stamped and returned to the commenter.

All communications received on or before the specified comment closing date will be considered before taking action on the proposed rule. The proposal contained in this action may be changed in light of comments received. All comments submitted will be available for examination in the public docket both before and after the comment closing date. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRM's

An electronic copy of this document may be downloaded through the Internet at *http://www.regulations.gov.* Recently published rulemaking documents can also be accessed through the FAA's Web page at *http://www.faa.gov/air_traffic/publications/airspace_amendments/.*

You may review the public docket containing the proposal, any comments received and any final disposition in person in the Dockets Office (see **ADDRESSES** section for address and phone number) between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. An informal docket may also be examined during normal business hours at the office of the Western Service Center, Operations Support Group, Federal Aviation Administration, 1601 Lind Ave. SW., Renton, WA 98057.

Availability and Summary of Documents for Incorporation by Reference

This document proposes to amend FAA Order 7400.11A, airspace Designations and Reporting Points, dated August 3, 2016, and effective September 15, 2016. FAA Order 7400.11A is publicly available as listed in the **ADDRESSES** section of this document. FAA Order 7400.11A lists Class A, B, C, D, and E airspace areas, air traffic service routes, and reporting points.

Background

The Manteca, CA VOR (ECA) is being decommissioned due to encroachment of obstructions causing radials to become unreliable and/or unusable. The Maxwell, CA VOR (MXW) is being decommissioned due to the owner requesting the FAA vacate the land so he can develop it. A determination has been made to permanently decommission both facilities as they already are on the list of VORs planned for discontinuance based on the Notice Of Policy ''Provision of Navigation Services for the Next Generation Air Transportation System (NextGen) Transition to Performance-Based Navigation (PBN) Plan for Establishing a VOR Minimum Operational Network'', published July 26, 2016 (81 FR 48694). As a result, the ATS routes that utilize the ECA and MXW VOR facilities must be amended. The affected routes are: Jet route J–58, J–80, J–94; VOR Federal airways V–87, V–109, V–113, V–195, V–244, V–585; and RNAV T-routes T–257, T–259, T–261, T–263. Additionally, the FAA would establish four new RNAV T-routes: T–298, T–329, T–331, and T–333. With the decommissioning of the ECA and MXW VOR facilities, ground-based navigation aid (NAVAID) coverage would be insufficient to enable the continuity of all the airways. Therefore, the proposed modifications to Jet routes J–58, J–80, J–94; and VOR Federal airways V–87, V–109, V–113, V–195, V–244, V–585 would result in a gap in the route structures. To overcome the gaps created in the route structures, air traffic control would either provide radar vectoring or reroute affected aircraft to the new RNAV T-routes established in this proposal.

The Proposal

The FAA is proposing an amendment to Title 14, Code of Federal Regulations (14 CFR) part 71 to amend Jet routes J–58, J–80, J–94; VOR Federal airways V–87, V–113, V–195, V–244; and RNAV T-routes T–257, T–259, T–261, T–263. Additionally, the FAA will establish 4 new Area Navigation T-routes T–298, T–329, T–331, and T–333. The FAA also proposes to remove VOR Federal airway V–109, V–585. The scheduled decommissioning of the ECA and MXW VOR facilities has made this proposed action necessary.

The proposed route changes are outlined below.

J–58: J–58 currently extends between Oakland, CA (OAK) and Harvey, LA (HRV). The FAA proposes to eliminate the segment of the route west of Coaldale, NV (OAL) from Oakland to Coaldale via Manteca. The unaffected portion of the existing route will remain as charted.

J–80: J–80 currently extends between Oakland, CA (OAK) and Bellaire, OH (AIR). The FAA proposes to eliminate the segment of the route west of Coaldale, NV (OAL) from Oakland to Coaldale via Manteca. The unaffected portion of the existing route will remain as charted.

J–94: J–94 currently extends between Oakland, CA (OAK) and Flint, MI (FNT). The FAA proposes to eliminate the segment of the route west of Mustang, NV (FMG) from Oakland to Mustang. The unaffected portion of the existing route will remain as charted.;

V–87: V–87 currently extends between Panoche, CA (PXN) and Red Bluff, CA (RBL). The FAA proposes to end the route at Scaggs Island, CA (SGD) thereby eliminating the segment north of Scaggs Island, CA (SGD) to Red Bluff, CA. The unaffected portion of the existing route will remain as charted.

V–109: V–109 currently extends from Panoche, CA to Oakland CA. The FAA proposes to remove this route.

V–113: V–113 currently extends between Morro Bay, CA (MQO) and Lewistown, MT (LWT). The FAA proposes to eliminate the Manteca, CA segment between Panoche, CA (PXN) and Linden, CA (LIN). The unaffected portions of the existing route will remain as charted in the two remaining segments.

V–195: V–195 currently extends between Manteca, CA (ECA) and Fortuna, CA, (FOT). The FAA proposes to eliminate the part of the route east of Oakland, CA (OAK) from Manteca to Oakland. The unaffected portion of the existing route will remain as charted.

V–244: V–244 currently extends between the intersection of the Oakland, CA (OAK) 077° and Manteca, CA (ECA) 267° radials to Salina, KS (SLN). The beginning portion of the route that was west of Coaldale, NV (OAL) would now be charted from Linden, CA (LIN) to Coaldale, NV (OAL). The unaffected portion of the existing route will remain as charted.

V–585: V–585 currently extends from Clovis, CA to Sacramento, CA. The FAA proposes to remove this route.

T–257: T–257 currently extends between Big Sur, CA (BSR) to Point Reyes, CA (PYE). The FAA proposes to reroute the route from Ventura, CA (VTU) to Tatoosh, WA (TOU). This route would provide separation from the SERFR arrival, a new optimized profile descent into San Francisco, CA (SFO). The current T–257 route also crosses the SFO and Oakland, CA (OAK) departure corridor and aircraft are not allowed to navigate via this route. Currently, aircraft that file for route T–257 are taken off the route upon talking with Northern California Approach Control to separate both the SFO arrivals and SFO/OAK departures. Northern California TRACON (NCT) has received multiple requests to amend this route so pilots will be allowed to fly from points south to the wine country airports. Added utility to this route was gained by extending the route south and north. To the south, the route splits the Special Activity Areas by routing the airway off the coastline, then extending inland over Morro Bay, CA (MQO) terminating at Ventura CA (VTU). To the north, the airway would be extended along the Oregon and Washington coast to Tatoosh CA (TOU) providing easy jump off points into airports with Standard Instrument Approach procedures.

T–259: T–259 currently extends between San Jose, CA (SJC) to Sacramento, CA (SAC). The FAA proposes to reroute the route from Lake Hughes, CA (LHS) to Ely, NV (ELY). This T-route would overlay the vector routes Northern California TRACON (NCT) utilizes to get aircraft in and out of south bay airports [San Jose, CA (SJC), Ried-Hillview, CA (RHV), Pala Alto, CA (PAO), Moffett Federal Airfield, CA (NUQ)] that are destined for or arriving from the northeast. The route would also extend to the TRUCK instrument approach fix for Tahoe airports, which are common destinations during the winter months. The existing location of T–259 is not utilized as it conflicts with East Bay arrivals.

T–261: T–261 currently extends between Woodside, CA (OSI) and the ALTAM waypoint. The FAA proposes to amend the route from Santa Catalina, CA (SXC) to JSTEN waypoint. This route would avoid ORRCA, a highly congested intersection. Aircraft routed via route T–261 today are taken off the airway to avoid conflicts over ORRCA. The route was also extended to the north of Northern California TRACON (NCT) airspace to separate from the TUDOR arrival into Sacramento International Airport, CA (SMF). Added utility was added by extending the route north through eastern Oregon and Washington State east of the Cascade mountain range.

T–263: T–263 currently extends between the SUNOL waypoint and Scaggs Island, CA (SGD). The FAA proposes a new route to begin at Fillmore, CA (FIM) to ELWHA waypoint. This proposed route was developed to the south beginning at Fillmore, CA (FIM) so it can tie into T–329 and other VOR federal airways to continue IFR to airports south or into the Fresno, CA, complex. This would provide a route clear of the SFO Class Bravo while servicing the central valley and wine country airports.

T–298: The FAA proposes to establish T–298 between Oakland, CA (OAK) and Crazy Woman, WY (CZI).

T–329: The FAA proposes to establish T–329 between Morro Bay, CA (MQO) and NACKI, CA waypoint.

T–331: The FAA proposes to establish T–331 between NTELL, CA waypoint and FONIA, ND FIX.

T–333: The FAA proposes to establish T–333 between KLIDE, CA fix and TIPRE, CA waypoint.

The navigation aid radials cited in the proposed route descriptions, below, are unchanged from the existing routes and stated relative to True north.

Jet routes are published in paragraph 2004, VOR Federal airways are published in paragraph 6010(a), United States Area Navigation Routes (T-Routes) are published in paragraph 6011, respectively, of FAA Order 7400.11A dated August 3, 2016, and effective September 15, 2016, which is incorporated by reference in 14 CFR 71.1. The Jet routes, VOR Federal airways and United States Area Navigation Routes (T-Routes) listed in this document will be subsequently published in the Order.

Regulatory Notices and Analyses

The FAA has determined that this proposed regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current. It, therefore: (1) Is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under Department of Transportation (DOT) Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this proposed rule, when promulgated, will not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Environmental Review

This proposal will be subject to an environmental analysis in accordance with FAA Order 1050.1F, ''Environmental Impacts: Policies and Procedures'' prior to any FAA final regulatory action.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

The Proposed Amendment

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for part 71 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of FAA Order 7400.11A, Airspace Designations and Reporting Points, dated August 3, 2016 and effective September 15, 2016, is amended as follows:

Paragraph 2004 Jet Routes.

J–58 [Amended]

From Coaldale, NV; Wilson Creek, NV; Milford, UT; Rattlesnake, NM; Fort Union, NM; Panhandle, TX; Wichita Falls, TX; Ranger, TX; Alexandria, LA; to Harvey, LA.

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J–80 [Amended]

From Coaldale, NV; Wilson Creek, NV; Milford, UT; Grand Junction, CO; Red Table, CO; Falcon, CO; Goodland, KS; Hill City, KS; Kansa City, MO; Spinner, IL; Brickyard, IN; to Bellaire, OH.

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J–94 [Amended]

From Mustang, NV; Lovelock, NV; Battle Mountain, NV; Lucin, UT; Rock Springs, WY; Scottsbluff, NE; O'Neill, NE; Fort Dodge, IA; Dubuque, IA; Northbrook, IL; Pullman, MI; to Flint, MI.

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Paragraph 6010 Domestic VOR Federal Airways.

V–87 [Amended]

From Panoche, CA; INT Panoche 245° and Salinas, CA, 100° radials; Salinas; INT Salinas 310° and Woodside, CA, 158° radials; Woodside; San Francisco, CA; INT San Francisco 359° and Scaggs Island, CA, 182° radials; to Scaggs Island, CA.

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V–109 [Removed]

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V–113 [Amended]

From Morro Bay, CA; Paso Robles, CA; Priest, CA; to Panoche, CA. From Linden, CA; INT Linden 046 °and Mustang, NV, 208° radials; Mustang; 42 miles, 24 miles, 115 MSL, 95 MSL, Sod House, NV; 67 miles, 95 MSL, 85 MSL, Rome, OR; 61 miles, 85 MSL, Boise, ID; Salmon, ID; Coppertown, MT; Helena, MT; to Lewistown, MT.

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V–195 [Amended]

From Oakland, CA; INT Oakland 004° and Williams, CA, 191° radials; Williams; INT Williams 002° and Red Bluff, CA, 158° radials; Red Bluff; to Fortuna, CA.

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V–244 [Amended]

From Linden, CA; Coaldale, NV; Tonopah, NV; 40 miles, 115 MSL, Wilson Creek, NV; 28 miles, 115 MSL, Milford, UT; Hanksville, UT; 63 miles, 13 miles, 140 MSL, 36 miles, 115 MSL, Montrose, CO; Blue Mesa, CO; 33 miles, 122 MSL, 27 miles, 155 MSL, Pueblo, CO; 18 miles, 48 miles, 60 MSL, Lamar, CO; 20 miles, 116 miles, 65 MSL, Hays, KS; to Salina, KS.

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V–585 [Removed]

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Paragraph 6011 United States Area Navigation Routes.

T–257 Ventura, CA (VTU) to Tatoosh, WA (TOU) [Amended]

Ventura, CA (VTU)	VOR/DME	(Lat. 34°06′54.21″ N., long. 119°02′58.17″ W.)
San Marcus, CA (RZS)	VORTAC	(Lat. 34°30′34.32″ N., long. 119°46′15.57″ W.)
Morro Bay, CA (MQO)	VORTAC	(Lat. 35°15′08.12″ N., long. 120°45′34.44″ W.)
BLANC, CA	FIX	(Lat. 35°37′53.19″ N., long. 121°21′23.04″ W.)
CAATE, CA	WP	(Lat. 36°46′32.29″ N., long. 122°04′09.57″ W.)
CHAWZ, CA	WP	(Lat. 37°06′48.59″ N., long. 122°21′09.58″ W.)
PORTE, CA	FIX	(Lat. 37°29′23.23″ N., long. 122°28′28.48″ W.)
THHEO, CA	WP	(Lat. 37°44′54.55″ N., long. 122°36′54.79″ W.)
JAMIN, CA	WP	(Lat. 37°51′16.99″ N., long. 122°40′12.05″ W.)
Point Reyes, CA (PYE)	VORTAC	(Lat. 38°04′47.12″ N., long. 122°52′04.18″ W.)
FREES, CA	FIX	(Lat. 38°23′38.47″ N., long. 122°55′33.24″ W.)
NACKI, CA	WP	(Lat. 38°43′47.73″ N., long. 123°05′52.93″ W.)
Mendocino, CA (ENI)	VORTAC	(Lat. 39°03′11.58″ N., long. 123°16′27.58″ W.)
FLUEN, CA	FIX	(Lat. 39°32′47.92″ N., long. 123°33′42.75″ W.)
PLYAT, CA	FIX	(Lat. 40°20′20.90″ N., long. 123°41′35.88″ W.)
CCHUK, CA	WP	(Lat. 40°31′42.18″ N., long. 124°04′16.08″ W.)
SCUPY, CA	WP	(Lat. 40°55′23.94″ N., long. 124°18′09.85″ W.)
OLJEK, CA	FIX	(Lat. 41°28′30.66″ N., long. 124°14′20.68″ W.)
CIGCA, CA	WP	(Lat. 41°36′39.60″ N., long. 124°17′27.58″ W.)
FURNS, CA	WP	(Lat. 41°55′15.86″ N., long. 124°26′09.40″ W.)
MITUE, OR	FIX	(Lat. 43°18′49.00″ N., long. 124°30′22.74″ W.)
JANAS, OR	FIX	(Lat. 44°17′33.63″ N., long. 124°05′14.25″ W.)
Newport, OR (ONP)	VORTAC	(Lat. 44°34′31.26″ N., long. 124°03′38.14″ W.)
CUTEL, OR	FIX	(Lat. 44°54′27.50″ N., long. 124°01′25.30″ W.)
ILWAC, WA	FIX	(Lat. 46°19′46.62″ N., long. 124°10′49.49″ W.)
ZEDAT, WA	FIX	(Lat. 46°35′50.64″ N., long. 124°10′01.14″ W.)
WAVLU, WA	FIX	(Lat. 46°50′00.90″ N., long. 124°06′35.70″ W.)
Hoquiam, WA (HQM)	VORTAC	(Lat. 46°56′49.35″ N., long. 124°08′57.37″ W.)
COPLS, WA	WP	(Lat. 47°06′46.78″ N., long. 124°07′40.80″ W.)
WAPTO, WA	FIX	(Lat. 47°28′19.54″ N., long. 124°13′50.38″ W.)
OZETT, WA	WP	(Lat. 48°03′07.00″ N., long. 124°35′54.42″ W.)
Tatoosh, WA (TOU)	VORTAC	(Lat. 48°17′59.64″ N., long. 124°37′37.36″ W.)

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T–259 Lake Hughes, CA (LHS) to Ely, NV (ELY) [Amended]

Lake Hughes, CA (LHS)	VORTAC	(Lat. 34°40′58.70″ N., long. 118°34′36.98″ W.)
Shafter, CA (EHF)	VORTAC	(Lat. 35°29′04.40″ N., long. 119°05′50.27″ W.)
Avenal, CA (AVE)	VOR/DME	(Lat. 35°38′49.11″ N., long. 119°58′42.98″ W.)
MBARI, CA	WP	(Lat. 36°01′37.09″ N., long. 120°34′38.27″ W.)
LKHRN, CA	WP	(Lat. 36°05′59.82″ N., long. 120°45′22.53″ W.)
Salinas, CA (SNS)	VORTAC	(Lat. 36°39′49.81″ N., long. 121°36′11.47″ W.)
CAATE, CA	WP	(Lat. 36°46′32.29″ N., long. 122°04′09.57″ W.)
SANTY, CA	FIX	(Lat. 36°58′45.26″ N., long. 122°04′23.07″ W.)
SAPID, CA	FIX	(Lat. 37°11′28.73″ N., long. 122°10′47.00″ W.)
CRTER, CA	WP	(Lat. 37°27′09.35″ N., long. 121°50′28.62″ W.)
MOVDD, CA	FIX	(Lat. 37°39′40.88″ N., long. 121°26′53.53″ W.)
OXJEF, CA	WP	(Lat. 37°46′11.40″ N., long. 121°02′03.31″ W.)
SAAGO, CA	WP	(Lat. 37°51′19.01″ N., long. 120°05′09.54″ W.)
BNAKI, CA	WP	(Lat. 37°53′25.61″ N., long. 119°40′02.43″ W.)
WEXIM, CA	WP	(Lat. 37°59′12.54″ N., long. 119°14′15.57″ W.)
NIKOL, CA	FIX	(Lat. 37°58′02.88″ N., long. 118°40′57.19″ W.)
DAYMN, NV	WP	(Lat. 38°59′19.00″ N., long. 115°51′00.00″ W.)
Ely, NV (ELY)	VOR/DME	(Lat. 39°17′53.25″ N., long. 114°50′53.90″ W.)

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T–261 Santa Catalina, CA (SXC), to JSTEN, WA [Amended]

Santa Catalina, CA (SXC)	VORTAC	(Lat. 33°22′30.20″ N., long. 118°25′11.68″ W.)
Gaviota, CA (GVO)	VORTAC	(Lat. 34°31′52.75″ N., long. 120°05′27.92″ W.)
Morro Bay, CA (MQO)	VORTAC	(Lat. 35°15′08.12″ N., long. 120°45′34.44″ W.)
CLMNS, CA	FIX	(Lat. 35°24′45.26″ N., long. 121°09′45.91″ W.)
HRRNG, CA	WP	(Lat. 35°37′39.24″ N., long. 121°25′19.36″ W.)
HMPBK, CA	WP	(Lat. 36°03′16.11″ N., long. 121°45′05.32″ W.)
WOZZZ, CA	WP	(Lat. 36°13′59.12″ N., long. 121°48′24.46″ W.)
Salinas, CA (SNS)	VORTAC	(Lat. 36°39′49.81″ N., long. 121°36′11.47″ W.)
WINDY, CA	FIX	(Lat. 37°17′36.96″ N., long. 121°11′00.75″ W.)
MOVDD, CA	FIX	(Lat. 37°39′40.88″ N., long. 121°26′53.53″ W.)
GIFME, CA	WP	(Lat. 38°12′02.39″ N., long. 121°35′11.42″ W.)
GRIDD, CA	FIX	(Lat. 39°19′38.69″ N., long. 121°50′07.50″ W.)
GONGS, CA	FIX	(Lat. 39°44′36.22″ N., long. 122°03′01.33″ W.)
HOMAN, CA	FIX	(Lat. 40°24′17.88″ N., long. 122°07′44.68″ W.)
GARSA, CA	FIX	(Lat. 40°42′05.61″ N., long. 122°01′26.87″ W.)
CCAPS, CA	WP	(Lat. 41°28′40.20″ N., long. 121°48′51.96″ W.)
MUREX, CA	FIX	(Lat. 41°52′11.03″ N., long. 121°44′02.93″ W.)
MIXUP, OR	FIX	(Lat. 42°31′07.79″ N., long. 121°59′49.66″ W.)
Deschutes, OR (DSD)	VORTAC	(Lat. 44°15′09.95″ N., long. 121°18′12.69″ W.)
CUPRI, OR	FIX	(Lat. 44°37′03.76″ N., long. 121°15′13.89″ W.)
SUPOC, OR	WP	(Lat. 44°54′05.94″ N., long. 120°58′53.25″ W.)
KUKTE, OR	FIX	(Lat. 45°19′55.95″ N., long. 121°09′17.29″ W.)
SUNSN, WA	WP	(Lat. 45°57′09.59″ N., long. 120°38′38.03″ W.)
MUDLE, WA	FIX	(Lat. 46°23′38.69″ N., long. 120°34′53.38″ W.)
Yakima, WA (YKM)	VORTAC	(Lat. 46°34′12.87″ N., long. 120°26′40.69″ W.)
SELAH, WA	FIX	(Lat. 46°42′03.01″ N., long. 120°32′59.48″ W.)
GEBTE, WA	FIX	(Lat. 46°51′39.01″ N., long. 120°30′17.18″ W.)
QUINT, WA	FIX	(Lat. 47°12′50.29″ N., long. 119°54′31.59″ W.)
PAWYO, WA	WP	(Lat. 48°10′04.08″ N., long. 119°29′30.00″ W.)
HVARD, WA	WP	(Lat. 48°17′32.75″ N., long. 119°30′16.09″ W.)
SOFFE, WA	WP	(Lat. 48°41′41.31″ N., long. 119°29′21.93″ W.)
JSTEN, WA	WP	(Lat. 48°57′50.34″ N., long. 119°26′15.47″ W.)

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T–263 Fillmore, CA (FIM) to ELWHA, WA [Amended]

Fillmore, CA (FIM)	VORTAC	(Lat. 34°21′24.10″ N., long. 118°52′52.65″ W.)
Avenal, CA (AVE)	VOR/DME	(Lat. 35°38′49.11″ N., long. 119°58′42.98″ W.)
Panoche, CA (PXN)	VORTAC	(Lat. 36°42′55.65″ N., long. 120°46′43.26″ W.)
WINDY, CA	FIX	(Lat. 37°17′36.96″ N., long. 121°11′00.75″ W.)
MOVDD, CA	FIX	(Lat. 37°39′40.88″ N., long. 121°26′53.53″ W.)
RBLEW, CA	WP	(Lat. 37°53′49.80″ N., long. 121°30′30.31″ W.)
PITTS, CA	FIX	(Lat. 38°02′59.59″ N., long. 121°53′28.90″ W.)
Scaggs Island, CA (SGD)	VORTAC	(Lat. 38°10′45.70″ N., long. 122°22′23.35″ W.)
POPES, CA	FIX	(Lat. 38°29′09.41″ N., long. 122°20′45.16″ W.)
DIBLE, CA	FIX	(Lat. 40°13′22.13″ N., long. 122°17′43.51″ W.)
KENDL, CA	FIX	(Lat. 40°27′20.50″ N., long. 122°23′04.50″ W.)
FOLDS, CA	FIX	(Lat. 40°44′16.56″ N., long. 122°30′10.69″ W.)
HOMEG, CA	WP	(Lat. 41°20′09.00″ N., long. 122°51′05.00″ W.)
ZUNAS, CA	FIX	(Lat. 41°51′34.17″ N., long. 122°50′54.37″ W.)
TALEM, OR	FIX	(Lat. 42°08′49.70″ N., long. 122°52′41.50″ W.)
OREGN, OR	WP	(Lat. 42°50′22.63″ N., long. 123°31′55.53″ W.)
EROWY, OR	WP	(Lat. 43°03′20.67″ N., long. 123°30′02.52″ W.)
NOTTI, OR	FIX	(Lat. 44°03′23.13″ N., long. 123°27′29.76″ W.)
Corvallis, OR (CVO)	VOR/DME	(Lat. 44°29′58.45″ N., long. 123°17′37.21″ W.)
ARTTY, OR	FIX	(Lat. 45°00′00.00″ N., long. 123°04′28.96″ W.)
Newberg, OR (UBG)	VOR/DME	(Lat. 45°21′11.62″ N., long. 122°58′41.37″ W.)
LOATH, OR	FIX	(Lat. 46°00′41.95″ N., long. 123°03′39.04″ W.)
WINLO, WA	FIX	(Lat. 46°27′27.26″ N., long. 123°06′03.90″ W.)
ULESS, WA	FIX	(Lat. 47°07′54.58″ N., long. 123°28′12.15″ W.)
ARRIE, WA	FIX	(Lat. 47°52′47.61″ N., long. 123°28′33.00″ W.)
ELWHA, WA	WP	(Lat. 48°08′55.11″ N., long. 123°40′15.06″ W.)

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T–298 Oakland, CA (OAK) to Crazy Woman, WY (CZI) [New]

Oakland, CA (OAK)	VORTAC	(Lat. 37°43′33.32″ N., long. 122°13′24.91″ W.)
ALTAM, CA	FIX	(Lat. 37°48′43.82″ N., long. 121°44′49.54″ W.)
ORANG, CA	FIX	(Lat. 37°59′00.43″ N., long. 121°15′50.95″ W.)
ELKHN, CA	WP	(Lat. 38°09′24.47″ N., long. 120°22′23.46″ W.)
NIKOL, CA	FIX	(Lat. 37°58′02.88″ N., long. 118°40′57.19″ W.)
Coaldale, NV (OAL)	VORTAC	(Lat. 38°00′11.74″ N., long. 117°46′13.61″ W.)
KATTS, NV	WP	(Lat. 38°20′00.00″ N., long. 116°20′00.00″ W.)
KITTN, NV	WP	(Lat. 38°19′44.23″ N., long. 114°57′41.27″ W.)
Wilson Creek, NV (ILC)	VORTAC	(Lat. 38°15′00.69″ N., long. 114°23′39.22″ W.)
Milford, UT, (MLF)	VORTAC	(Lat. 38°21′37.28″ N., long. 113°00′47.64″ W.)
DETAN, UT	FIX	(Lat. 38°22′22.30″ N., long. 112°37′46.69″ W.)
EBOVE, UT	WP	(Lat. 39°02′44.32″ N., long. 111°46′24.18″ W.)
Carbon, UT (PUC)	VOR/DME	(Lat. 39°36′11.49″ N., long. 110°45′12.70″ W.)
Myton, UT (MTU)	VOR/DME	(Lat. 40°08′56.74″ N., long. 110°07′37.30″ W.)
Rock Springs, WY (OCS)	VOR/DME	(Lat. 41°35′24.76″ N., long. 109°00′55.18″ W.)
DORTN, WY	WP	(Lat. 43°02′36.63″ N., long. 107°13′03.27″ W.)
Crazy Woman, WY (CZI)	VOR/DME	(Lat. 43°59′59.02″ N., long. 106°26′08.63″ W.)

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T–329 Morro Bay, CA (MQO) to NACKI, CA [New]

Morro Bay, CA (MQO)	VORTAC	(Lat. 35°15′08.12″ N., long. 120°45′34.44″ W.)
Paso Robles, CA (PRB)	VORTAC	(Lat. 35°40′20.87″ N., long. 120°37′37.59″ W.)
LKHRN, CA	WP	(Lat. 36°05′59.82″ N., long. 120°45′22.53″ W.)
Panoche, CA (PXN)	VORTAC	(Lat. 36°42′55.65″ N., long. 120°46′43.26″ W.)
MKNNA, CA	WP	(Lat. 37°04′23.41″ N., long. 120°50′22.26″ W.)
OXJEF, CA	WP	(Lat. 37°46′11.40″ N., long. 121°02′03.31″ W.)
TIPRE, CA	WP	(Lat. 38°12′21.00″ N., long. 121°02′09.00″ W.)
HNNRY, CA	WP	(Lat. 38°23′27.61″ N., long. 121°37′43.50″ W.)
ROWWN, CA	WP	(Lat. 38°24′55.86″ N., long. 121°47′00.05″ W.)
RAGGS, CA	FIX	(Lat. 38°28′34.94″ N., long. 122°09′24.65″ W.)
POPES, CA	FIX	(Lat. 38°29′09.41″ N., long. 122°20′45.16″ W.)
NACKI, CA	WP	(Lat. 38°43′47.73″ N., long. 123°05′52.93″ W.)

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T–331 NTELL, CA to FONIA, ND [New]

NTELL, CA	WP	(Lat. 36°53′58.99″ N., long. 119°53′22.21″ W.)
KARNN, CA	FIX	(Lat. 37°09′03.79″ N., long. 121°16′45.22″ W.)
VINCO, CA	FIX	(Lat. 37°22′35.11″ N., long. 121°42′59.52″ W.)
NORCL, CA	WP	(Lat. 37°31′02.66″ N., long. 121°43′10.60″ W.)
MOVDD, CA	FIX	(Lat. 37°39′40.88″ N., long. 121°26′53.53″ W.)
EVETT, CA	WP	(Lat. 38°00′36.11″ N., long. 121°07′48.14″ W.)
TIPRE, CA	WP	(Lat. 38°12′21.00″ N., long. 121°02′09.00″ W.)
ESSOH, CA	WP	(Lat. 38°43′11.37″ N., long. 120°38′10.87″ W.)
Squaw Valley, CA (SWR)	VOR/DME	(Lat. 39°10′49.16″ N., long. 120°16′10.60″ W.)
TRUCK, CA	FIX	(Lat. 39°26′15.67″ N., long. 120°09′42.48″ W.)
Mustang, NV (FMG)	VORTAC	(Lat. 39°31′52.55″ N., long. 119°39′21.86″ W.)
HIXUP, NV	WP	(Lat. 39°58′08.32″ N., long. 118°51′52.25″ W.)
Lovelock, NV (LLC)	VORTAC	(Lat. 40°07′30.95″ N., long. 118°34′39.34″ W.)
CUTVA, NV	FIX	(Lat. 40°23′27.16″ N., long. 117°35′59.79″ W.)
Battle Mountain, NV (BAM)	VORTAC	(Lat. 40°34′08.69″ N., long. 116°55′20.12″ W.)
PARZZ, NV	WP	(Lat. 41°36′14.64″ N., long. 115°02′09.69″ W.)
TULIE, ID	WP	(Lat. 42°37′58.49″ N., long. 113°06′44.54″ W.)
AMFAL, ID	WP	(Lat. 42°45′56.67″ N., long. 112°50′04.64″ W.)
Pocatello, ID (PIH)	VOR/DME	(Lat. 42°52′13.38″ N., long. 112°39′08.05″ W.)
VIPUC, ID	WP	(Lat. 43°21′09.64″ N., long. 112°14′44.08″ W.)
Idaho Falls, ID (IDA)	VOR/DME	(Lat. 43°31′08.42″ N., long. 112°03′50.10″ W.)
SABAT, ID	FIX	(Lat. 44°00′59.71″ N., long. 111°39′55.04″ W.)
WAHNZ, ID	WP	(Lat. 44°17′15.61″ N., long. 111°13′32.75″ W.)
SPECT, MT	WP	(Lat. 45°20′00.37″ N., long. 109°27′47.95″ W.)
Billings, MT (BIL)	VORTAC	(Lat. 45°48′30.81″ N., long. 108°37′28.73″ W.)
TRUED, MT	WP	(Lat. 46°08′27.38″ N., long. 107°54′36.55″ W.)
EXADE, MT	FIX	(Lat. 47°35′56.78″ N., long. 104°32′40.61″ W.)
JEKOK, MT	WP	(Lat. 47°59′31.05″ N., long. 103°27′17.51″ W.)
FONIA, ND	FIX	(Lat. 48°15′35.07″ N., long. 103°10′37.54″ W.)

* * * * * *

T–333 KLIDE, CA to TIPRE, CA [New]

KLIDE, CA	FIX	(Lat. 37°09′51.03″ N., long. 121°42′46.98″ W.)
BORED, CA	FIX	(Lat. 37°18′34.16″ N., long. 121°27′48.06″ W.)
SMONE, CA	WP	(Lat. 37°32′10.45″ N., long. 121°21′30.65″ W.)
TIPRE, CA	WP	(Lat. 38°12′21.00″ N., long. 121°02′09.00″ W.)

Issued in Washington, DC, on December 28, 2016.

M. Randy Willis,

Acting Manager, Airspace Policy Group.

[FR Doc. 2016–31818 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF THE INTERIOR

Bureau of Safety and Environmental Enforcement

30 CFR Part 250

[Docket ID: BSEE–2016–0003; 17XE1700DX EEEE500000 EX1SF0000.DAQ000]

RIN 1014–AA31

Oil, Gas, and Sulfur Activities on the Outer Continental Shelf—Adjustments to Cost Recovery Fees

AGENCY: Bureau of Safety and Environmental Enforcement, Interior.

ACTION: Extension of comment period for notice of proposed rulemaking.

SUMMARY: The Bureau of Safety and Environmental Enforcement (BSEE) is extending the public comment period on the proposed rule regarding adjustments to cost recovery fees, which was published in the **Federal Register** on November 17, 2016 (81 FR 81033). The original public comment period would have ended on January 17, 2017. However, BSEE has received multiple requests from various stakeholders to extend the comment period. BSEE has reviewed the extension requests and determined that a 30-day comment period extension—to February 16, 2017—is appropriate.

DATES: Written comments must be received by the extended due date of February 16, 2017. BSEE may not fully consider comments received after this date.

ADDRESSES: You may submit comments on the rulemaking by any of the following methods. Please use the Regulation Identifier Number (RIN) 1014–AA31 as an identifier in your comments. *See also* Public Availability of Comments under Procedural Matters.

- *Federal eRulemaking Portal: http://www.regulations.gov.* In the entry titled Enter Keyword or ID, enter BSEE–2016–0003 then click search. Follow the instructions to submit public comments and view supporting and related materials available for this rulemaking. BSEE may post all submitted comments.
- Mail or hand-carry comments to the Department of the Interior (DOI); Bureau of Safety and Environmental Enforcement; Attention: Regulations and Standards Branch; Mail Code VAE ORP; 45600 Woodland Road, Sterling, VA 20166. Please reference *Proposed Adjustment of Service Fees Relating to the Regulation of Oil, Gas, and Sulfur*

Activities on the Outer Continental Shelf, AA31, in your comments and include your name and return address.

• Comments on the information collection contained in this proposed rule are separate from those on the substance of the proposed rule. Send comments on the information collection burden in this rule to: OMB, Interior Desk Officer, 202–395–5806 (fax); email *OIRA_submissions@omb.eop.gov.* Please also send a copy to BSEE at *regs@bsee.gov,* fax number (703) 787–1546, or by the address listed above.

• *Public Availability of Comments*—Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

FOR FURTHER INFORMATION CONTACT: Kimberly Monaco, Budget Analyst, Office of Budget at (703) 787–1658, *Kimberly.Monaco@bsee.gov.*

SUPPLEMENTARY INFORMATION: BSEE published a proposed rulemaking to adjust its cost recovery fees on November 17, 2016 (81 FR 81033). The proposed rule would adjust 31 existing cost recovery fees and pre-production site visits for services BSEE provides when it receives a plan, application, permit, or other request from non-Federal recipients, including the acceptable payment type for each service. The proposed rule also proposed new fees for certain pre-production site visits to support the review and approval of production safety system facilities offshore and in shipyards. The proposed rule identified when credit cards or electronic checks for payment of fees would be acceptable.

Upon publication of the proposed rule, BSEE received several written requests from oil and gas companies and industry groups asking BSEE to extend the comment period on the proposed rule by an additional 30 days. BSEE has considered those requests and the reason provided and has determined that an additional 30 days is reasonable and appropriate. Accordingly, BSEE is extending its original 60-day comment period by an additional 30 days, from January 17, 2017, to February 16, 2017.

Dated: December 27, 2016.

Brian Salerno,

Director, Bureau of Safety and Environmental Enforcement.

[FR Doc. 2016–31999 Filed 1–4–17; 8:45 am]

BILLING CODE 4310–VH–P

DEPARTMENT OF TRANSPORTATION

Saint Lawrence Seaway Development Corporation

33 CFR Part 401

[Docket No. SLSDC–2016–0006]

RIN 2135–AA42

Seaway Regulations and Rules: Periodic Update, Various Categories

AGENCY: Saint Lawrence Seaway Development Corporation, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Saint Lawrence Seaway Development Corporation (SLSDC) and the St. Lawrence Seaway Management Corporation (SLSMC) of Canada, under international agreement, jointly publish and presently administer the St. Lawrence Seaway Regulations and Rules (Practices and Procedures in Canada) in their respective jurisdictions. Under agreement with the SLSMC, the SLSDC is amending the joint regulations by updating the Seaway Regulations and Rules in various categories. The changes will update the following sections of the Regulations and Rules: Condition of Vessels; Seaway Navigation; Radio Communications; General; and, Vessels Transiting U.S. Waters. These amendments are necessary to take account of updated procedures and will enhance the safety of transits through the Seaway. Several of the amendments are merely editorial or for clarification of existing requirements.

DATES: Comments are due February 6, 2017.

ADDRESSES: *Docket:* For access to the docket to read background documents or comments received, go to *http://www.Regulations.gov*; or in person at the Docket Management Facility; U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 20590–001, between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays.

FOR FURTHER INFORMATION CONTACT: Carrie Mann Lavigne, Chief Counsel, Saint Lawrence Seaway Development Corporation, 180 Andrews Street, Massena, New York 13662; 315/764–3200.

SUPPLEMENTARY INFORMATION: The Saint Lawrence Seaway Development Corporation (SLSDC) and the St. Lawrence Seaway Management Corporation (SLSMC) of Canada, under international agreement, jointly publish and presently administer the St. Lawrence Seaway Regulations and Rules (Practices and Procedures in Canada) in their respective jurisdictions. Under agreement with the SLSMC, the SLSDC is amending the joint regulations by updating the Regulations and Rules in various categories. The changes will update the following sections of the Regulations and Rules: Condition of Vessels; Seaway Navigation; Radio Communications; General; and, Vessels Transiting U.S. Waters. These updates are necessary to take account of updated procedures which will enhance the safety of transits through the Seaway. Many of these changes are to clarify existing requirements in the regulations. Where new requirements or regulations are made, an explanation for such a change is provided below.

Regulatory Notices: Privacy Act: Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78) or you may visit *http://www.Regulations.gov*.

The SLSDC is amending two sections of the Condition of Vessels portion of the joint Seaway regulations. In section 401.08, ''Landing booms'', the two Corporations are proposing to require vessels with freeboard greater than 2 m and not equipped with landing booms to use the Seaway tie-up service at approach walls. Under the current rules, crew members on vessels with freeboard greater than 2 m and no landing booms jump approximately 4–6 feet from the vessel to the approach wall. This proposed rule would eliminate the safety risks associated with this practice.

In 401.9, ''Radio telephone and navigation equipment'', the SLSDC and SLSMC are proposing to require that vessels maintain radio transmitters on board that are fitted to communicate on additional VHF channels to reduce possible interference from channels transmitting lock operation instructions to vessels via specially designated VHF channels.

In the Seaway Navigation portion of the regulations, a change to Section

401.44, ''Mooring in locks'', is being proposed that would require one crew member to be present on deck during lockage to assist the Bridge team. A change to 401.89, ''Transit refused'' of the General section of the regulations would clarify that vessels need to be in compliance with Transport Canada's Marine Safety and Security regulations in order to transit the Seaway.

The other changes to the joint regulations are merely editorial or to clarify existing requirements.

Regulatory Evaluation

This proposed regulation involves a foreign affairs function of the United States and therefore, Executive Order 12866 does not apply and evaluation under the Department of Transportation's Regulatory Policies and Procedures is not required.

Regulatory Flexibility Act Determination

I certify that this proposed regulation will not have a significant economic impact on a substantial number of small entities. The St. Lawrence Seaway Regulations and Rules primarily relate to commercial users of the Seaway, the vast majority of who are foreign vessel operators. Therefore, any resulting costs will be borne mostly by foreign vessels.

Environmental Impact

This proposed regulation does not require an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321, *et seq.*) because it is not a major federal action significantly affecting the quality of the human environment.

Federalism

The Corporation has analyzed this proposed rule under the principles and criteria in Executive Order 13132, dated August 4, 1999, and have determined that this proposal does not have sufficient federalism implications to warrant a Federalism Assessment.

Unfunded Mandates

The Corporation has analyzed this proposed rule under Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, 109 Stat. 48) and determined that it does not impose unfunded mandates on State, local, and tribal governments and the private sector requiring a written statement of economic and regulatory alternatives.

Paperwork Reduction Act

This proposed regulation has been analyzed under the Paperwork Reduction Act of 1995 and does not contain new or modified information collection requirements subject to the Office of Management and Budget review.

List of Subjects in 33 CFR Part 401

Hazardous materials transportation, Navigation (water), Penalties, Radio, Reporting and recordkeeping requirements, Vessels, Waterways.

Accordingly, the Saint Lawrence Seaway Development Corporation is proposing to amend 33 CFR part 401, Regulations and Rules, as follows:

PART 401—SEAWAY REGULATIONS AND RULES

Subpart A—Regulations

■ 1. The authority citation for subpart A of part 401 continues to read as follows:

Authority: 33 U.S.C. 983(a) and 984(a) (4), as amended; 49 CFR 1.52, unless otherwise noted.

■ 2. In § 401.8, redesignate paragraph (c) as paragraph (d) and add new paragraph (c) to read as follows:

§ 401.8 Landing booms.

* * * * *

(c) Vessels with freeboard greater than 2 m and not equipped with landing booms shall utilize the Seaway tie-up service at approach walls.

* * * * *

■ 3. In § 401.9, revise paragraph (b)(2) to read as follows:

§ 401.9 Radio telephone and navigation equipment.

* * * * *

(b) * * *

(2) Be fitted to operate from the conning position in the wheelhouse and to communicate on channels 11, 12, 13, 14, 15, 16, 17, 66a, 75, 76 and 77.

* * * * *

■ 4. In § 401.29, revise paragraph (c)(2)(iii), redesignate paragraph (c)(2)(iv) as paragraph (c)(2)(v) and add a new paragraph 2(c)(iv) to read as follows:

§ 401.29 Maximum draft.

* * * * *

(c) * * *

(2) * * *

(iii) Any vessel intending to use the DIS for the first time must notify the Manager of the Corporation in writing at least 24 hours prior to the commencement of its initial transit in the System with the DIS.

(iv) In every navigation season a vessel intending to use an approved DIS to transit the System must fax a completed confirmation checklist found at *www.greatlakes-seaway.com* to the Manager or the Corporation prior to its initial transit of the season.

* * * * *

■ 5. In § 401.44, revise paragraph (d) to read as follows:

§ 401.44 Mooring in locks.

* * * * *

(d) Vessels being moored by a ''Hands Free Mooring'' (HFM) system shall have a minimum of 1 well rested crew member on deck during the lockage to assist the Bridge team.

■ 6. In § 401.58, revise paragraph (b) to read as follows:

§ 401.58 Pleasure craft scheduling.

* * * * *

(b) Every pleasure craft seeking to transit Canadian locks shall stop at a pleasure craft dock and arrange for transit by contacting the lock personnel using the direct-line phone and make the lockage fee payment by purchasing a ticket using the automated ticket dispensers or prior to transiting Seaway locks, purchase a ticket through PayPal on the Seaway Web site.

■ 7. In § 401.64, revise paragraph (c) to read as follows:

§ 401.64 Calling in.

* * * * *

(c) A down bound vessel in St. Lambert Lock shall switch to channel 10 (156.5 MHz) for a traffic report from Quebec Vessel Management Center.

* * * * *

■ 8. In § 401.89, revise paragraph (d) as follows:

§ 401.89 Transit refused.

* * * * *

(d) The vessel is not in compliance with Transport Canada Marine Safety and Security, flag state and/or classification society regulations.

■ 9. In Part 401, Schedule I, redesignate paragraphs (c) and (d) as paragraphs (d) and (e), respectively, and add a new paragraph (c) to read as follows:

Schedule I to Subpart A of Part 401—Vessels Transiting U.S. Waters

* * * * *

(c) U.S. Coast Pilot, current edition.

* * * * *

Issued at Washington, DC, on December 30, 2016.

Saint Lawrence Seaway Development Corporation.

Carrie Lavigne,

Chief Counsel.

[FR Doc. 2016–32000 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–61–P

DEPARTMENT OF TRANSPORTATION

Saint Lawrence Seaway Development Corporation

33 CFR Part 402

[Docket No. SLSDC–2016–0005]

RIN 2135–AA41

Tariff of Tolls

AGENCY: Saint Lawrence Seaway Development Corporation, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Saint Lawrence Seaway Development Corporation (SLSDC) and the St. Lawrence Seaway Management Corporation (SLSMC) of Canada, under international agreement, jointly publish and presently administer the St. Lawrence Seaway Tariff of Tolls in their respective jurisdictions. The Tariff sets forth the level of tolls assessed on all commodities and vessels transiting the facilities operated by the SLSDC and the SLSMC. The SLSDC is revising its regulations to reflect the fees and charges levied by the SLSMC in Canada starting in the 2017 navigation season, which are effective only in Canada. An amendment to increase the minimum charge per lock for those vessels that are not pleasure craft or subject in Canada to tolls under items 1 and 2 of the Tariff for full or partial transit of the Seaway will apply in the U.S. (See **SUPPLEMENTARY INFORMATION**.)

DATES: Comments are due February 6, 2017.

ADDRESSES: *Docket:* For access to the docket to read background documents or comments received, go to *http://www.Regulations.gov*; or in person at the Docket Management Facility; U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC 20590–001, between 9 a.m. and 5 p.m., Monday through Friday, except Federal Holidays.

FOR FURTHER INFORMATION, CONTACT: Carrie Mann Lavigne, Chief Counsel, Saint Lawrence Seaway Development Corporation, 180 Andrews Street, Massena, New York 13662; 315/764–3200.

SUPPLEMENTARY INFORMATION: The Saint Lawrence Seaway Development Corporation (SLSDC) and the St. Lawrence Seaway Management Corporation (SLSMC) of Canada, under international agreement, jointly publish and presently administer the St. Lawrence Seaway Tariff of Tolls (Schedule of Fees and Charges in Canada) in their respective jurisdictions.

The Tariff sets forth the level of tolls assessed on all commodities and vessels transiting the facilities operated by the SLSDC and the SLSMC. The SLSDC is proposing to revise 33 CFR 402.12, ''Schedule of tolls'', to reflect the fees and charges levied by the SLSMC in Canada beginning in the 2017 navigation season. With one exception, the changes affect the tolls for commercial vessels and are applicable only in Canada. The collection of tolls by the SLSDC on commercial vessels transiting the U.S. locks is waived by law (33 U.S.C. 988a(a)). Accordingly, no notice or comment is necessary on these amendments.

The SLSDC is proposing to amend 33 CFR 402.12, ''Schedule of tolls'', to increase the minimum charge per vessel per lock for full or partial transit of the Seaway from $27.46 to $28.01. This charge is for vessels that are not pleasure craft or subject in Canada to the tolls under items 1 and 2 of the Tariff. This increase is due to higher operating costs at the locks.

Regulatory Notices: Privacy Act: Anyone is able to search the electronic form of all comments received into any of our dockets by the name of the individual submitting the comment (or signing the comment, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78) or you may visit *http://dms.dot.gov.*

Regulatory Evaluation

This proposed regulation involves a foreign affairs function of the United States and therefore, Executive Order 12866 does not apply and evaluation under the Department of Transportation's Regulatory Policies and Procedures is not required.

Regulatory Flexibility Act Determination

I certify this proposed regulation will not have a significant economic impact on a substantial number of small entities. The St. Lawrence Seaway Tariff of Tolls primarily relate to commercial users of the Seaway, the vast majority of whom are foreign vessel operators. Therefore, any resulting costs will be borne mostly by foreign vessels.

Environmental Impact

This proposed regulation does not require an environmental impact statement under the National Environmental Policy Act (49 U.S.C. 4321, et reg.) because it is not a major federal action significantly affecting the quality of the human environment.

Federalism

The Corporation has analyzed this proposed rule under the principles and criteria in Executive Order 13132, dated August 4, 1999, and has determined that this proposal does not have sufficient federalism implications to warrant a Federalism Assessment.

Unfunded Mandates

The Corporation has analyzed this proposed rule under Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4, 109 Stat. 48) and determined that it does not impose unfunded mandates on State, local, and tribal governments and the private sector requiring a written statement of economic and regulatory alternatives.

Paperwork Reduction Act

This proposed regulation has been analyzed under the Paperwork Reduction Act of 1995 and does not contain new or modified information collection requirements subject to the Office of Management and Budget review.

List of Subjects in 33 CFR part 402

Vessels, Waterways.

Accordingly, the Saint Lawrence Seaway Development Corporation proposes to amend 33 CFR part 402, Tariff of Tolls, as follows:

PART 402—TARIFF OF TOLLS

■ 1. The authority citation for part 402 continues to read as follows:

Authority: 33 U.S.C. 983(a), 984(a)(4) and 988, as amended; 49 CFR 1.52.

■ 2. In § 402.12 the table is revised to read as follows:

§ 402.12 Schedule of tolls.

Column 1		Column 2	Column 3
Item	Description of Charges	Rate ($) Montreal to or from Lake Ontario (5 locks)	Rate ($) Welland Canal—Lake Ontario to or from Lake Erie (8 locks)
1.	Subject to item 3, for complete transit of the Seaway, a composite toll, comprising:	.	

Column 1		Column 2	Column 3
Item	Description of Charges	Rate ($) Montreal to or from Lake Ontario (5 locks)	Rate ($) Welland Canal—Lake Ontario to or from Lake Erie (8 locks)
	(1) a charge per gross registered ton of the ship, applicable whether the ship is wholly or partially laden, or is in ballast, and the gross registered tonnage being calculated according to prescribed rules for measurement or under the International Convention on Tonnage Measurement of Ships, 1969, as amended from time to time [1].	0.1082	0.1732.
	(2) a charge per metric ton of cargo as certified on the ship's manifest or other document, as follows:		
	(*a*) bulk cargo	1.1217	0.7656.
	(*b*) general cargo	2.7028	1.2253.
	(*c*) steel slab	2.4461	0.8772.
	(*d*) containerized cargo	1.1217	0.7656.
	(*e*) government aid cargo	n/a	n/a.
	(*f*) grain	0.6891	0.7656.
	(*g*) coal	0.6891	0.7656.
	(3) a charge per passenger per lock	1.6806	1.6806.
	(4) a lockage charge per Gross Registered Ton of the vessel, as defined in tem 1(1), applicable whether the ship is wholly or partially laden, or is in ballast, for transit of the Welland Canal in either direction by cargo ships,.	n/a	0.2884.
	Up to a maximum charge per vessel	n/a	4,034.
2.	Subject to item 3, for partial transit of the Seaway	20 per cent per lock of the applicable charge under items 1(1), 1(2) and 1(4) plus the applicable charge under items 1(3).	13 per cent per lock of the applicable charge under items 1(1), 1(2) and 1(4) plus the applicable charge under items 1(3).
3.	Minimum charge per vessel per lock transited for full or partial transit of the Seaway.	28.01 [2]	28.01.
4.	A charge per pleasure craft per lock transited for full or partial transit of the Seaway, including applicable federal taxes [3].	30.00 [4]	30.00.
5.	Under the New Business Initiative Program, for cargo accepted as New Business, a percentage rebate on the applicable cargo charges for the approved period.	20%	20%.
6.	Under the Volume Rebate Incentive program, a retroactive percentage rebate on cargo tolls on the incremental volume calculated based on the pre-approved maximum volume.	10%	10%.
7.	Under the New Service Incentive Program, for New Business cargo moving under an approved new service, an additional percentage refund on applicable cargo tolls above the New Business rebate.	20%	20%.

[1] Or under the U.S. GRT for vessels prescribed prior to 2002.
[2] The applicable charged under item 3 at the Saint Lawrence Seaway Development Corporation's locks (Eisenhower, Snell) will be collected in U.S. dollars. The collection of the U.S. portion of tolls for commercial vessels is waived by law (33 U.S.C. 988a(a)). The other charges are in Canadian dollars and are for the Canadian share of tolls.
[3] $5.00 discount per lock applicable on ticket purchased for Canadian locks via PayPal.
[4] The applicable charge at the Saint Lawrence Seaway Development Corporation's locks (Eisenhower, Snell) for pleasure craft is $30 U.S. or $30 Canadian per lock.

Issued at Washington, DC, on December 30, 2016.

Saint Lawrence Seaway Development Corporation.

Carrie Lavigne,

Chief Counsel.

[FR Doc. 2016–32001 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–61–P

DEPARTMENT OF VETERANS AFFAIRS

38 CFR Part 17

RIN 2900–AP83

Ecclesiastical Endorsing Organizations

AGENCY: Department of Veterans Affairs.

ACTION: Proposed rule.

SUMMARY: The Department of Veterans Affairs (VA) proposes to amend its medical regulations by establishing in regulation the eligibility requirements that ecclesiastical endorsing organizations must meet in order to provide ecclesiastical endorsements of individuals seeking employment as VA chaplains or of individuals who are seeking to be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405. VA considers the veterans' spiritual care an integral part of the veterans' overall health care. As such, VA is committed to providing qualified VA chaplains to address the veterans' spiritual needs by engaging chaplains that are ecclesiastically endorsed. Ecclesiastical endorsement would certify that the individual is qualified to perform all the religious sacraments, rites, rituals, ceremonies and ordinances needed by members of a particular faith.

DATES: Comments must be received by VA on or before March 6, 2017.

ADDRESSES: Written comments may be submitted through *http://www.Regulations.gov*; by mail or hand-delivery to: Director, Regulation Policy and Management (00REG), Department of Veterans Affairs, 810 Vermont Ave. NW., Room 1068, Washington, DC 20420; or by fax to (202) 273–9026. (This is not a toll-free telephone number.) Comments should indicate that they are submitted in response to ''RIN 2900–AP83-Ecclesiastical Endorsing Organizations.'' Copies of comments received will be available for public inspection in the Office of Regulation Policy and Management, Room 1068, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday (except holidays). Please call (202) 461–4902 for an appointment. (This is not a toll-free telephone number.) In addition, during the comment period, comments may be viewed online through the Federal Docket Management System (FDMS) at *http://www.Regulations.gov*.

FOR FURTHER INFORMATION CONTACT: John Batten, Program Analyst, National Chaplain Center, Veterans Health Administration, Department of Veterans Affairs Medical Center, 100

Emancipation Dr., Hampton VA 23667; (757) 728–7062. (This is not a toll-free number.)

SUPPLEMENTARY INFORMATION: Under 38 CFR 17.33, VA shall make available to each patient the opportunity for religious worship. The VA National Chaplain Service was established on August 1, 1945, to provide veterans the opportunity for such worship and other forms of spiritual care. VA employs chaplains in accordance with 5 CFR 213.3102(a) to provide for the spiritual component of health care in accordance to the spiritual needs of veterans. VA may employ chaplains in temporary appointments, on an on-facility fee basis appointment under 38 U.S.C. 7405, and may engage chaplains under contract. By requiring that chaplains be ecclesiastically endorsed, VA ensures that chaplains are qualified to perform the rites, rituals, or ceremonies that are unique to each faith. Before the year 2000, VA did not have a process in place to address endorsement of chaplains and relied on criteria established by the Department of Defense's (DoD) Armed Forces Chaplain Board (AFCB) at DoD Instruction 1304.28. Under these criteria, an individual cannot serve as chaplain unless he or she is endorsed by an ecclesiastical endorsing organization. The purpose is to ensure that the chaplain is recognized as an individual who is authorized by that organization to perform pastoral duties. The ecclesiastical endorsing organization must submit a request to VA to designate an ecclesiastical endorser. This request provides VA with the information on the ecclesiastical endorsing organization and identifies the individual whom the organization designates as the official authorized to sign ecclesiastical endorsements. VA reviews the information provided and approves the request.

Before the year 2000, VA accepted endorsements from ecclesiastical endorsing organizations recognized by DoD to perform this function as a means of avoiding duplication of effort on VA's part and because such organizations would be better able to address veterans' needs, having provided for the veterans' spiritual care while on active duty. In 1998, VA determined that it needed to establish its own policy on accepting ecclesiastical endorsements. The rationale was that there might be organizations that would endorse members seeking to work for VA, but would not permit their members to work as military chaplains, either for theological or other reasons. There might also be ecclesiastical endorsing organizations that have members who wish to work as VA chaplains and none who wish to become military chaplains. By accepting endorsements only from ecclesiastical endorsing organizations recognized by DoD, VA was unnecessarily limiting the pool of ministers who could serve as VA chaplains. We would, however, use similar definitions of terms defined by DoD in order to maintain consistency between government agencies. VA has been successfully implementing since the year 2000, via internal policy, the eligibility requirements that ecclesiastical endorsing organizations must meet to endorse individuals who are seeking employment as VA chaplains or of individuals who are seeking to be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405.[1] However, VA subsequently determined a formal rulemaking would be prudent in order to make the process transparent. VA considers a veteran's spiritual care an integral part of the veteran's health care. By requiring that all VA chaplains be endorsed by an ecclesiastical endorsing organization that meets certain criteria, VA is ensuring that chaplains are providing for the religious needs of veterans. VA does not prefer any religion and respects a veteran's right by only providing religious and spiritual care to those veterans who request it. VA has established in policy a process by which ecclesiastical endorsing organizations designate an individual as authorized to sign ecclesiastical endorsements of its members seeking employment as VA chaplains or be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405. Through this rulemaking, VA would establish this policy in regulation, which would promote transparency in the process as well as safeguard VA from the appearance of favoritism of an ecclesiastical endorsing organization over another. We would establish this process in proposed § 17.655.

17.655 Ecclesiastical Endorsing Organizations

Proposed paragraph (a) would be the purpose paragraph. We would state that proposed § 17.655 ''establishes the eligibility requirements that an ecclesiastical endorsing organization must meet in order to provide ecclesiastical endorsements of individuals who are seeking employment as VA chaplains or are seeking to be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405.'' VA protects a veteran's right to exercise his or her religion. However, VA does not imply approval of the theology or practices of the religious organization to which the chaplain belongs. VA is also not obligated to employ or engage under VA contract or to appoint under 38 U.S.C. 7405 an individual who is endorsed by an ecclesiastical endorsing organization for the reasons stated in our discussion of proposed paragraph (c). We would state these caveats in proposed paragraph (a).

Proposed paragraph (b) would provide the definitions of terms used within proposed § 17.655. In order to be considered for and maintain employment as a VA chaplain or be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405, an individual must have ecclesiastical endorsement from an ecclesiastical endorsing organization. This requirement would be needed to make certain that individuals providing ministry to veterans are authorized by their ecclesiastical endorsing organization to provide specific ministries. We would add this requirement to the proposed definition of ecclesiastical endorsement, which would be defined to mean ''a written statement addressed to VA and signed by the designated endorsing official of an ecclesiastical endorsing organization certifying that an individual is in good standing with the faith group or denomination and, in the opinion of the endorsing official, is qualified to perform the full range of ministry, including all sacraments, rites, ordinances, rituals, and liturgies required by members of the faith group.''

Each ecclesiastical endorsing organization designates an ecclesiastical endorsing official or officials, who would endorse individuals as being in good standing within that faith and able to perform the full range of ministries. We propose to define ecclesiastical endorsing official as ''an individual who is authorized to provide or withdraw ecclesiastical endorsements on behalf of an ecclesiastical endorsing organization.'' This definition would be similar to that of DoD.

An organization that meets the eligibility requirements of proposed paragraph (c) and has also been designated as an endorsing agent in accordance with proposed paragraph (e) would be termed an ecclesiastical endorsing organization. We would

[1] Ecclesiastical Endorsing Organizations, VA Handbook 1111.1.

define this term in proposed paragraph (b).

Proposed paragraph (c) would state that ecclesiastical endorsing organization must ''meet the following requirements before the organization can endorse an applicant for VA chaplaincy.'' The first requirement is that the ecclesiastical endorsing organization must ''Be organized and function exclusively or substantially to provide religious ministries to a lay constituency and possess authority to both grant and withdraw initial and subsequent ecclesiastical endorsement.'' Organizations whose only function is to provide social services to the community, health care or education cannot become ecclesiastical endorsing organizations. The organization must designate an individual(s) who can sign an ecclesiastical endorsement of a member of the organization. Maintaining an ecclesiastical endorsement is a requirement to maintain employment as a VA chaplain or be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405. The second requirement is that the organization has ''tax-exempt status as a religious organization or church under the Internal Revenue Code, section 501(c)(3).'' Generally, section 501(c) of the Internal Revenue Code provides exemption from some federal income taxes for various types of nonprofit organizations. Section 501(c)(3) of the Internal Revenue code addresses religious organizations. In order for a religious organization to be tax-exempt under rules established by the Internal Revenue Service (IRS), the organization must meet the following requirements: be organized and operated exclusively for religious, educational, scientific or other charitable purposes; net earnings may not inure to the benefit of any private individual or shareholder; no substantial part of its activity may be attempting to influence legislation; the organization may not intervene in political campaigns; and the organization's purposes and activities may not be illegal or violate fundamental public policy. The IRS makes a distinction between tax-exempt status of a religious organization and that of a church. Religious organizations that meet the requirements of section 501(c)(3) of the IRC must apply to the IRS for tax-exempt status, unless their gross receipts do not normally exceed $5,000.00 annually.

Churches are automatically considered tax-exempt and are not required to apply for and obtain recognition of tax-exempt status from the IRS. However, although there is no requirement to file for tax-exempt status, many churches seek recognition of tax-exempt status from the IRS because this recognition assures the religious leaders, members, and contributors that the church is recognized as exempt and qualifies for related tax benefits. VA would require that an ecclesiastical endorsing organization, that is seeking to endorse an individual for employment as a VA chaplain or an individual seeking to be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405, obtain the recognition of its status as a tax-exempt religious organization or church under section 501(c)(3) of the Internal Revenue Code.

The third requirement is that ecclesiastical endorsing organizations would need to agree to abide by ''all Federal and VA laws, regulations, policies, and issuances on the qualification and endorsement of persons for service as VA chaplains.'' We would add this requirement as a form of commitment by the ecclesiastical endorsing organization to only endorse individuals for service as VA chaplains who are willing to abide by these rules.

We propose to state that the ecclesiastical endorsing organization must notify VA in writing of any withdrawal of the ecclesiastical endorsement of an endorsed VA chaplain. Such notification must be received by VA within ten days of the withdrawal. VA is committed to provide veterans with spiritual care from the most qualified individuals. If an individual is no longer endorsed by an ecclesiastical endorsing organization, such individual will cease to meet the requirements of a VA chaplain and may lose his or her VA employment, VA contract, or appointment as on-facility fee basis VA chaplains under 38 U.S.C. 7405. We would also state that the ecclesiastical endorsing organization must provide the documents stated in proposed paragraph (d). If an ecclesiastical endorsing organization changes the individual authorized as its endorsing official, the organization must notify VA of the name and address of the new official. VA would need to maintain contact with the ecclesiastical endorsing organization through the ecclesiastical endorsing official to verify the endorsement status of VA chaplains. The ecclesiastical endorsing official of an ecclesiastical endorsing organization is the key point of contact between VA and the organization and also between an individual who seeks employment as a VA chaplain or an individual who is seeking to be engaged under VA contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405. The name and address of the current official would be maintained by VA for current and future VA chaplains. VA publishes the names and contact information of the endorsing officials in its Web site so that individuals of a particular faith who wish to become VA chaplains know whom they must contact within their religious community to seek endorsement. Lastly, all ecclesiastical endorsing officials of an ecclesiastical endorsing organization must be designated by the same official within such an organization. If an ecclesiastical endorsing organization already has a recognized ecclesiastical endorsing official and is, therefore, accepted as an ecclesiastical endorsing organization, a component of that organization cannot designate its own endorsing official and become a separate endorsing organization. VA would add this requirement to maintain a central point of contact within an organization and to avoid any confusion if, for example, one portion of an ecclesiastical endorsing organization endorses an individual while another portion denies endorsement to that same individual.

Proposed paragraph (d) would state the documentation that an ecclesiastical endorsing organization would need to submit in order to be recognized by VA as an ecclesiastical endorsing agent. The Department of Defense requires that endorsing organizations submit certain materials, and VA also proposes to require those same materials.[2] Further,

[2] The relevant section of Enclosure 3 of the Department of Defense Instruction states:

E3.1.3. The religious organization shall submit documents verifying the following information with regard to such organization:

E3.1.3.1. That the religious organization is organized as an entity functioning primarily to perform religious ministries to a non-military lay constituency and currently holds a section 501(c)(3) exempt status (Reference (i)) as a church for Federal tax purposes from the Internal Revenue Service (IRS) (note ''church'' is used by the IRS not to denote a belief system, but to distinguish ''churches'' from other types of religious organizations; see IRS Instructions for Form 1023 Schedule A). Such rules stipulate that the particular religious beliefs of the organization are truly and sincerely held and that the practices and rituals associated with the organization's religious belief or creed are not illegal or contrary to clearly defined public policy. In order to determine whether a particular religious organization has properly acquired, and currently maintains, an IRS tax exempt status and does not engage in practices that are illegal or contrary to defined public policy, the USD(PR) shall take appropriate steps to verify with the DoD Components and other Federal Agencies compliance with these requirements.

E3.1.3.2. That it possesses ecclesiastical authority to grant and withdraw initial and subsequent ecclesiastical endorsement for ministry in the Armed Forces.

E3.1.3.3. That it verifies the religious organization shall provide chaplains who shall function in a

the ecclesiastical endorsing organization must complete the VA form that requests designation as an ecclesiastical endorsing agent. In order to ensure that the expressed religious needs of the veteran population would be met, VA also proposes that ecclesiastical endorsing organizations submit documentation that states the organization's structure, including copies of the by-laws, constitution, articles of incorporation; membership requirements of the organization; membership requirements for clergy (education, licensure, experience, ordination, etc.); and the organization's beliefs and practices. VA cannot recognize more than one ecclesiastical endorsing organization from a faith, so this information would also help VA to verify whether the ecclesiastical endorsing organization is part of a larger organization that has already designated an ecclesiastical endorsing official. VA would also request the name of the individual who is seeking employment as a VA chaplain or seeking to be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405. VA would not commence the process of considering the request from an ecclesiastical endorsing organization unless an individual from that organization seeks to be an active member of the VA chaplaincy. VA seeks comment on whether any of these requirements would place an undue burden on ecclesiastical organizations, and, if so, whether there are any alternate, less burdensome ways of ensuring that VA is able to meet the expressed religious needs of its veteran population. VA also seeks comment on whether it would be better to seek some of these materials through sub-regulatory rather than regulatory processes.[3]

Proposed paragraph (e) would state the notification that VA would provide to an ecclesiastical endorsing organization. If an ecclesiastical endorsing organization meets the requirements of proposed paragraph (c) and has submitted the required documentation stated in proposed paragraph (d), VA will notify the ecclesiastical endorsing organization in writing that the organization has been designated as an ecclesiastical endorsing organization. We would state that the designation of an ecclesiastical endorsing organization is for a period of 3 years from the date of notification. VA would continue to accept ecclesiastical endorsements for 3 years from that organization without requiring further documentation unless VA receives evidence that the ecclesiastical endorsing organization no longer meets the requirements of proposed § 17.655. This would relieve the ecclesiastical endorsing organization's burden of supplying VA the required documentation every time that the organization endorses an individual.

VA proposes to only consider requests from ecclesiastical endorsing organizations to designate an ecclesiastical endorsing official when an individual of the requesting ecclesiastical endorsing organization who meets the education, training and experience requirements for VA chaplains is actively applying for a VA chaplain vacancy, or applying for engagement as a VA chaplain under VA contract or applying for an appointment as on-facility fee basis VA chaplains under 38 U.S.C. 7405. VA has received requests to designate an ecclesiastical endorsing official in the past without receiving an application from an individual who meets VA chaplain qualification requirements. In such cases, VA has instructed the ecclesiastical endorsing organization that we would not take any action on such request, but VA would keep the request on file for a period of 2 years.

Proposed paragraph (f) would state the reporting requirements. Because ecclesiastical endorsement is a condition of VA employment for a VA chaplain, VA must verify the endorsement of each VA chaplain. We would state that an ecclesiastical endorsing organization must provide an alphabetical listing of individuals endorsed for VA chaplaincy by the organization by January 1 of every calendar year. This certification would ensure that veterans receive spiritual care from endorsed individuals. As previously stated, VA would designate an organization as an ecclesiastical endorsing organization for a period of 3 years. In order to remain an ecclesiastical endorsing organization the organization must provide written documentation that the organization continues to meet the requirements of proposed § 17.655 every 3 years.

Proposed paragraph (g) would state the steps VA would take to rescind an organization's status as an ecclesiastical endorsing organization. In most circumstances, a rescission of such status would not be considered permanent. VA would first send the ecclesiastical endorsing organization written notice stating the reasons for the rescission. The ecclesiastical endorsing organization will be given 60 days to provide a written response addressing VA's concerns. Once the ecclesiastical endorsing organization submits the requested evidence or after the 60 day time period has expired, whichever comes first, VA will review the evidence provided and notify, in writing, the organization, and all VA chaplains endorsed by the organization, of its decision. An ecclesiastical endorsing organization must submit all documentation stated in proposed paragraph (d) to be reconsidered as an endorsing organization. As previously stated in this rulemaking, an ecclesiastical endorsing organization must meet the eligibility requirements of proposed paragraph (c) and submit all of the evidence listed in proposed paragraph (d) in order for such organization to ecclesiastically endorse individuals for employment as VA chaplains or be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405. We would, therefore, state ''If an ecclesiastical endorsing organization is no longer able to endorse individuals for VA chaplaincy in accordance with this section, all ecclesiastical endorsements issued by that organization are considered to be withdrawn.''

Effect of Rulemaking

Title 38 of the Code of Federal Regulations, as proposed to be revised by this rulemaking, would represent the exclusive legal authority on this subject. No contrary rules or procedures would be authorized. All VA guidance would be read to conform with this proposed rulemaking if possible or, if not possible, such guidance would be superseded by this rulemaking.

Paperwork Reduction Act

This proposed rule includes a provision constituting a collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3521) that requires approval by the Office of Management and Budget (OMB). Accordingly, under 44 U.S.C. 3507(d), VA has submitted a copy of this rulemaking to OMB for review.

OMB assigns control numbers to collections of information it approves. VA may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control

pluralistic environment, as defined in this Instruction, and who shall support directly and indirectly the free exercise of religion by all members of the Military Services, their family members, and other persons authorized to be served by the military chaplaincies.

E3.1.3.4. That it agrees to abide by all DoD Directives, Instructions, and other guidance and with Military Department regulations and policies on the qualification and endorsement of RMPs for service as military chaplains.

[3] See Ecclesiastical Endorsing Organizations, VA Handbook 1111.1.

number. Proposed § 17.655 contains a collection of information under the Paperwork Reduction Act of 1995. VA was previously collecting this information under OMB control number 2900–0610, which expired on September 2, 2008. If OMB does not approve the collection of information as requested, VA will immediately remove the provision containing a collection of information or take such other action as is directed by OMB.

Comments on the collection of information contained in this proposed rule should be submitted to the Office of Management and Budget, Attention: Desk Officer for the Department of Veterans Affairs, Office of Information and Regulatory Affairs, Washington, DC 20503, with copies sent by mail or hand delivery to the Director, Regulations Management (02REG), Department of Veterans Affairs, 810 Vermont Avenue NW., Room 1068, Washington, DC 20420; fax to (202) 273–9026; or through *www.Regulations.gov*. Comments should indicate that they are submitted in response to ''RIN 2900-[WP2015–35] Ecclesiastical Endorsing Organizations.''

OMB is required to make a decision concerning the collections of information contained in this proposed rule between 30 and 60 days after publication of this document in the **Federal Register**. Therefore, a comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication. This does not affect the deadline for the public to comment on the proposed rule.

VA considers comments by the public on proposed collections of information in—

- Evaluating whether the proposed collections of information are necessary for the proper performance of the functions of VA, including whether the information will have practical utility;
- Evaluating the accuracy of VA's estimate of the burden of the proposed collections of information, including the validity of the methodology and assumptions used;
- Enhancing the quality, usefulness, and clarity of the information to be collected; and
- Minimizing the burden of the collections of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses.

The collections of information contained in § 17.655 are described immediately following this paragraph, under their respective titles.

Title: Ecclesiastical Endorsing Organizations.

Summary of collection of information and description of the need for information and proposed use of information: Proposed paragraph (d) in *§ 17.655* would read that an ecclesiastical endorsing organization would need to submit documentation in order for VA to accept ecclesiastical endorsements of individuals of such organization. The information is needed to establish the eligibility requirements that an ecclesiastical endorsing organization must meet in order to provide ecclesiastical endorsements of an individual who is seeking employment as a VA chaplain or who is seeking to be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405. VA has collected this information in the past through internal policy and guidance.[4]

Description of likely respondents: Ecclesiastical endorsing organizations wishing to endorse applicants for VA Chaplaincy.

Estimated number of respondents per year: 50.

Estimated frequency of responses per year: 50 times per year.

Estimated average burden per response: 45 minutes.

Estimated total annual reporting and recordkeeping burden: 37.5 hours.

Regulatory Flexibility Act

The Secretary hereby certifies that this proposed rule would not have a significant economic impact on a substantial number of small entities as they are defined in the Regulatory Flexibility Act, 5 U.S.C. 601–612. This proposed rule would directly affect only individuals and would not directly affect small entities. Therefore, pursuant to 5 U.S.C. 605(b), this rulemaking is exempt from the initial and final regulatory flexibility analysis requirements of 5 U.S.C. 603 and 604.

Executive Orders 12866 and 13563

Executive Orders 12866 and 13563 direct agencies to assess the costs and benefits of available regulatory alternatives and, when regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, and other advantages; distributive impacts; and equity). Executive Order 13563 (Improving Regulation and Regulatory Review) emphasizes the importance of quantifying both costs and benefits, reducing costs, harmonizing rules, and promoting flexibility. Executive Order 12866 (Regulatory Planning and Review) defines a ''significant regulatory action,'' requiring review by the Office of Management and Budget (OMB), unless OMB waives such review, as ''any regulatory action that is likely to result in a rule that may: (1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.''

The economic, interagency, budgetary, legal, and policy implications of this regulatory action have been examined, and it has been determined not to be a significant regulatory action under Executive Order 12866. VA's impact analysis can be found as a supporting document at *http://www.regulations.gov,* usually within 48 hours after the rulemaking document is published. Additionally, a copy of the rulemaking and its impact analysis are available on VA's Web site at *http://www.va.gov/orpm/,* by following the link for ''VA Regulations Published From FY 2004 Through Fiscal Year to Date.''

Unfunded Mandates

The Unfunded Mandates Reform Act of 1995 requires, at 2 U.S.C. 1532, that agencies prepare an assessment of anticipated costs and benefits before issuing any rule that may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100 million or more (adjusted annually for inflation) in any one year. This proposed rule would have no such effect on State, local, and tribal governments, or on the private sector.

Catalog of Federal Domestic Assistance

There are no Catalog of Federal Domestic Assistance numbers and titles for this rule.

Signing Authority

The Secretary of Veterans Affairs, or designee, approved this document and

[4] Ecclesiastical Endorsing Organizations, VA Handbook 1111.1.

authorized the undersigned to sign and submit the document to the Office of the Federal Register for publication electronically as an official document of the Department of Veterans Affairs. Gina S. Farrisee, Deputy Chief of Staff, Department of Veterans Affairs, approved this document on September 15, 2016, for publication.

List of Subjects in 38 CFR Part 17

Administrative practice and procedure, Health professions, Veterans.

Signing Authority

The Secretary of Veterans Affairs, or designee, approved this document and authorized the undersigned to sign and submit the document to the Office of the Federal Register for publication electronically as an official document of the Department of Veterans Affairs. Gina S. Farrisee, Deputy Chief of Staff, Department of Veterans Affairs, approved this document on September 15, 2016, for publication.

Janet Coleman,

Chief, Regulation Policy & Management, Office of the Secretary, Department of Veterans Affairs.

For the reasons set out in the preamble, VA proposes to amend 38 CFR part 17 as follows:

PART 17—MEDICAL

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 38 U.S.C. 501, and as noted in specific sections.
under 38 U.S.C. 501(a), 7304, 7405.

■ 2. Add a center heading immediately after § 17.647 to read as follows:

Chaplain Services

■ 3. Add § 17.655 to read as follows:

§ 17.655 Ecclesiastical endorsing organizations.

(a) *Purpose.* This section establishes the eligibility requirements that an ecclesiastical endorsing organization must meet in order to provide ecclesiastical endorsements of individuals who are seeking employment as VA chaplains or seeking to be engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405. Acceptance of an ecclesiastical endorsement by VA does not imply any approval by VA of the theology or practices of an ecclesiastical endorsing organization, nor does it obligate VA to employ the endorsed individual or any other member of the organization.

(b) *Definitions:* The following definitions apply to this section:

(1) *Ecclesiastical endorsement* means a written statement addressed to VA and signed by the designated endorsing official of an ecclesiastical endorsing organization certifying that an individual is in good standing with the faith group or denomination and, in the opinion of the endorsing official, is qualified to perform the full range of ministry, including all sacraments, rites, ordinances, rituals, and liturgies required by members of the faith group. Ecclesiastical endorsement is a condition of employment as a VA chaplain. An individual must obtain and maintain a full and active ecclesiastical endorsement to be employed as a VA chaplain.

(2) *Ecclesiastical endorsing official* means an individual who is authorized to provide or withdraw ecclesiastical endorsements on behalf of an ecclesiastical endorsing organization.

(3) *Ecclesiastical endorsing organization* means an organization that meets the eligibility requirements of paragraph (c) of this section and has been properly designated as an endorsing organization in accordance with paragraph (e) of this section.

(c) *Eligibility to Serve as an Ecclesiastical Endorsing Organization.* An ecclesiastical endorsing organization must meet the following requirements before such organization can endorse an applicant for VA chaplaincy:

(1) Be organized and function exclusively or substantially to provide religious ministries to a lay constituency and possess authority to both grant and withdraw initial and subsequent ecclesiastical endorsements;

(2) Have tax-exempt status as a religious organization or church under the Internal Revenue Code, section 501(c)(3);

(3) Agree to abide by all Federal and VA laws, regulations, policies, and issuances on the qualification and endorsement of persons for service as VA chaplains;

(4) Agree to notify VA in writing of any withdrawal of an existing ecclesiastical endorsement within ten days after the date of such withdrawal;

(5) Provide VA the documents stated in paragraph (d) of this section;

(6) Notify VA in writing within 30 days of any change of the name, address or contact information of the individual that it designates as its ecclesiastical endorsing official; and

(7) An ecclesiastical endorsing organization that is part of an endorsing organization by which its members can be endorsed cannot become a separate endorsing organization without the written permission of the larger endorsing organization.

(d) *Request to Designate Ecclesiastical Endorser.* In order for an ecclesiastical endorsing organization to be recognized by VA such organization must submit the following:

(1) A complete VA form that requests the designation of an ecclesiastical endorsing official;

(2) A copy of an Internal Revenue Service document verifying that the organization currently holds a section 501(c)(3) exempt status (Reference (i)) as a church for Federal tax purposes from the Internal Revenue Service (IRS) (note ''church'' is used by the IRS not to denote a belief system, but to distinguish ''churches'' from other types of religious organizations; see IRS Instructions for Form 1023 Schedule A). Such rules stipulate that the particular religious beliefs of the organization are truly and sincerely held and that the practices and rituals associated with the organization's religious belief or creed are not illegal or contrary to clearly defined public policy. In order to determine whether a particular religious organization has properly acquired, and currently maintains, an IRS tax exempt status and does not engage in practices that are illegal or contrary to defined public policy, VA shall take appropriate steps to verify compliance with these requirements.

(3) A document verifying that the organization shall provide chaplains who shall function in a pluralistic environment, and who shall support directly and indirectly the free exercise of religion by all veterans, their family members, and other persons authorized to be served by VA.

(4) That it agrees to abide by all VA Directives, Instructions, and other guidance, regulations and policies on the qualification and endorsement of ministers for service as VA chaplains.

(5) Documentation that states the structure of the organization, including copies of the articles of incorporation, by-laws and constitution, membership requirements of the organization, if any, the religious beliefs and practices of the organization, and the organization's requirements to become clergy; and

(6) The name and address of the individual who is applying to become a VA chaplain. (The Office of Management and Budget has approved the information collection requirements in this section under control number XXXX–XXXX.)

(e) *Approval of Request to Designate an Ecclesiastical Endorsing Official.* If an ecclesiastical endorsing organization meets the requirements of paragraph (c) of this section and has submitted the documents stated in paragraph (d) of this section, VA will notify the

organization in writing that such organization has been designated as an ecclesiastical endorsing organization. The designation will be for a period of 3 years from the date of notification. Once an organization is designated as an ecclesiastical endorsing organization, VA will accept ecclesiastical endorsements from that organization without requiring any further documentation from the organization during the 3 year period, unless VA receives evidence that an organization no longer meets the requirements of this section. VA will only take action on an initial request to designate an ecclesiastical endorsing official when VA receives an application from an individual who is seeking employment as a VA chaplain or is seeking to be engaged under VA contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405.

(f) *Reporting requirement.* (1) To certify that VA chaplains continue to be endorsed by an ecclesiastical endorsing organization, such organization must provide VA an alphabetical listing of individuals who are endorsed by that endorsing organization and are employed as VA chaplains or are engaged by VA under contract or appointed as on-facility fee basis VA chaplains under 38 U.S.C. 7405 by January 1 of every calendar year.

(2) In order for VA to continue to recognize an ecclesiastical endorsing organization, such organization must provide written documentation that it continues to meet the requirements of this section every 3 years.

(g) *Rescission of ecclesiastical endorsing organization.* VA may rescind an organization's status as an ecclesiastical endorsing organization and refuse to accept ecclesiastical endorsements from such organization if it no longer meets the requirements of paragraph (c) of this section. VA will take the following steps before it rescinds the organization's status:

(1) VA will give the ecclesiastical endorsing organization written notice stating the reasons for the rescission and give the organization 60 days to provide a written reply addressing VA's concerns.

(2) VA will notify the ecclesiastical endorsing organization and all VA chaplains endorsed by the organization in writing of its decision after VA reviews the evidence provided by the organization or after the 60 day time period has expired, whichever comes first.

(3) Ecclesiastical endorsing organizations that are notified that they may no longer endorse individuals for VA chaplaincy because they do not meet the requirements of paragraph (c) of this section must resubmit all of the evidence stated in paragraph (d) of this section in order to be reconsidered as an endorsing organization.

(4) If an ecclesiastical endorsing organization is no longer able to endorse individuals for VA chaplaincy in accordance with this section, all ecclesiastical endorsements issued by that organization are considered to be withdrawn.

[FR Doc. 2016–31949 Filed 1–4–17; 8:45 am]

BILLING CODE 8320–01–P

POSTAL SERVICE

39 CFR Part 501

Revisions to the Requirements for Authority To Manufacture and Distribute Postage Evidencing Systems; Customized Postage Products

AGENCY: Postal Service.

ACTION: Proposed rule.

SUMMARY: The Postal Service proposes to amend its Postage Evidencing Systems regulations to add standardized requirements for the authorization to produce Customized Postage products, a Special Service approved by the Postal Regulatory Commission. Customized Postage products are provided through authorized Postage Evidencing System manufacturer-distributors or through companies affiliated with authorized Postage Evidencing System manufacturer-distributors and approved by the Postal Service. During the development of this service, the requirements for authorization to produce Customized Postage products have been described in **Federal Register** notices and in individual approval letters issued to providers. These amendments would give regulatory form to the existing requirements for authorization to produce Customized Postage products, and incorporate procedures for the protection of Postal Service business interests.

DATES: Comments must be received on or before February 6, 2017.

ADDRESSES: Mail or deliver written comments to the Manager, Payment Technology, U.S. Postal Service®, 475 L'Enfant Plaza SW., Room 3500, Washington, DC 20260. You may inspect and photocopy all written comments at the Payment Technology office by appointment only between the hours of 9 a.m. and 4 p.m., Monday through Friday by calling 1–202–268–7613 in advance. Email and faxed comments are not accepted.

FOR FURTHER INFORMATION CONTACT: Christy Noel, Legal Policy & Legislative Advice, U.S. Postal Service, (202) 268–3484.

SUPPLEMENTARY INFORMATION: The Postal Reorganization Act authorizes the Postal Service to provide such evidence of postage payment ''as may be necessary or desirable.'' 39 U.S.C. 404(a)(4). The Postal Service exercises this authority through 39 CFR part 501, which protects postal revenues by regulation of manufacturer-distributors of Postage Evidencing Systems. Customized Postage products were developed through market tests allowing Authorized Postage Evidencing System providers to combine evidence of prepayment of postage with a customer-selected or customer-provided graphic image for printing and fulfillment. *See,* 70 FR 21821 (April 27, 2005); 71 FR 12718 (March 13, 2006). Subsequently, Customized Postage products were approved as a Special Service by the Postal Regulatory Commission. *See,* 75 FR 11452, 11459 (March 11, 2010). These proposed amendments to 39 CFR 501 would create standardized definitions, requirements, and procedures applicable to the authorization to provide Customized Postage products, and incorporate protections for the Postal Service's legal, financial, or brand interests. Existing providers of Customized Postage products would be able to continue provision of Customized Postage products for the remainder of the product year in accordance with these revisions upon their effective date, and subject to any requirements set forth in individual authorization letters. Alternatively, existing providers would be able to discontinue provision of Customized Postage products and request a refund from the Postal Service of their annual fee, pro-rated for the remainder of the product year.

List of Subjects in 39 CFR Part 501

Administrative practice and procedure.

Accordingly, for the reasons discussed above, the Postal Service proposes to amend 39 CFR part 501 as follows:

PART 501—AUTHORIZATION TO MANUFACTURE AND DISTRIBUTE POSTAGE EVIDENCING SYSTEMS

■ 1. The authority citation for 39 CFR part 501 continues to read as follows:

Authority: 5 U.S.C. 552(a); 39 U.S.C. 101, 401, 403, 404, 410, 2601, 2605, Inspector General Act of 1978, as amended (Pub. L. 95–452, as amended); 5 U.S.C. App. 3.

■ 2. In § 501.1, revise paragraph (d) and add paragraph (h) to read as follows:

§ 501.1 Definitions.

* * * * *

501.1 Definitions.

* * * * *

(d) A *provider* is: (1) A person or entity authorized under this section to manufacture or distribute Postage Evidencing Systems to customers; or

(2) A company that is:

(i) Affiliated under conditions respecting postage revenue security with a person or entity authorized under this section to manufacture or distribute Postage Evidencing Systems to customers; and

(ii) Authorized by the Postal Service to produce Customized Postage products in accordance with this section and subject to all procedures and regulations set forth throughout this section and to any additional requirements set forth in individual approval letters.

* * * * *

(h) *Customized Postage products* are products combining barcode indicia of postage payment with digital, graphic, or pictorial images or text. Customers select or provide images or text that meet Eligibility Criteria established by the Postal Service, and the image or text is combined with the barcode indicia by providers and printed under controlled conditions for mailing to customers.

■ 3. In § 501.6, remove the term ''PT'' wherever it appears and add in its place the term ''the Postal Service''; and revise paragraph (a), the final sentence of paragraph (b), paragraph (c)(1), and paragraph (f) to read as follows:

§ 501.6 Suspension and Revocation of Authorization.

(a) The Postal Service may suspend or revoke authorization to manufacture or distribute any or all of a provider's approved Postage Evidencing Systems, or to produce Customized Postage products, if the provider engages in any unlawful scheme or enterprise; fails to comply with any provision in this Part 501, or any provision in an individual approval letter; fails to implement instructions issued in accordance with any final decision issued by the Postal Service within its authority over Postage Evidencing Systems or Customized Postage products; or if the Postage Evidencing Systems, Customized Postage products, or infrastructure of the provider is determined to constitute an unacceptable risk to Postal Service business interests, including legal, financial, or brand interests.

(b) * * * Before determining that a provider's authorization to manufacture or distribute Postage Evidencing Systems or to produce Customized Postage products should be suspended or revoked, the procedures in paragraph (c) of this section shall be followed.

(c)(1) *Suspension or revocation* procedures: Upon determination by the Postal Service that a provider is in violation of a provision of this part, or that its Postage Evidencing System or Customized Postage products pose an unacceptable risk to Postal Service business interests, including legal, financial, or brand interests, the Postal Service shall issue a written notice of proposed suspension citing the specific conditions or deficiencies for which suspension may be imposed. Except in cases of willful violation, the provider shall be given an opportunity to correct deficiencies and achieve compliance within a time limit corresponding to the potential risk to Postal Service business interests.

* * * * *

(f) An order or final decision under this section does not preclude any other remedy that is available by law to the Postal Service, the United States, or any other person or entity.

■ 4. In § 501.7(c), in the first sentence, remove the words ''postal evidencing system'' and add in their place the words ''postage meter''.

■ 5. Revise § 501.13 to read as follows:

§ 501.13 False Representations of Postal Service Actions.

Providers, their agents, and employees must not misrepresent to customers of the Postal Service any decisions, actions, or proposed actions of the Postal Service respecting its regulation of Postage Evidencing Systems or Customized Postage products. The Postal Service reserves the right pursuant to § 501.6 to suspend or revoke the authorization to manufacture or distribute Postage Evidencing Systems or to produce Customized Postage when it determines that the provider, its agents, or employees failed to comply with this section.

■ 6. Add § 501.21 to read as follows:

§ 501.21 Customized Postage Products.

(a) *Eligibility Criteria.* The Postal Service reserves the right to determine independently whether any image, text, or category of images or texts meets any of the Eligibility Criteria contained in this section. To be eligible for use in Customized Postage products, images and/or text must meet criteria established by the Postal Service, which are:

(1) Images or text must not contain:

(i) Any image or text the customer or provider does not have the right to use either directly or under license, including but not limited to images or text that may be the subject of third party rights such as copyright, trademarks, or rights of publicity or privacy;

(ii) Any depiction of alcohol; tobacco; controlled substances, including but not limited to marijuana; gambling; or firearms or other weapons;

(iii) Any depiction of political, religious, violent or sexual content, including content not suitable for minors; or

(iv) Any depiction of any other subject matter prohibited for display under U.S. law.

(2) Images or text must be ''commercial'' or ''social,'' as defined below:

(i) *Commercial* means intended for no other purpose than the sale of goods or services in commerce.

(ii) *Social* means promoting or depicting people, animals, items, or events commonly associated with friendly relations or companionship and likely to generate invitations, announcements, notices, thank you notes, RSVPs, or similar correspondence.

(b) *Customized Postage provider authorization* is conditioned on the following requirements:

(1) *Use of Eligibility Criteria in purchases.* Providers must use only the Eligibility Criteria set forth in paragraph (a) of this subsection in providing or accepting images and/or text for Customized Postage products. Providers may not use any other eligibility criteria, represent the use of any other eligibility criteria to customers, or otherwise give the appearance that any eligibility criteria other than the Eligibility Criteria set forth in paragraph (a) of this subsection apply to purchases of Customized Postage products.

(2) *Use of Eligibility Criteria in promotional material.* Providers must ensure that any images and/or text used in providing or promoting Customized Postage products, for individual sale or as part of a category of images and/or text provided or made available for customer selection, displayed on provider Web sites or in any medium, including without limitation exemplars, ordering templates, customization options, or customer correspondence:

(i) Are fully compatible with the Eligibility Criteria set forth in paragraph (a) of this subsection; and

(ii) Do not give the appearance that images that are not fully compatible with the Eligibility Criteria set forth in

paragraph (a) of this subsection are available or offered for purchase through providers or otherwise.

(3) *Disassociation from U.S. stamps.* Providers must not refer to Customized Postage products as ''stamps'' or make any other representations tending to imply that Customized Postage products are related in any way to official U.S. postage stamps or to any aspect of the Postal Service philatelic program.

(4) *Authorization fee and Eligibility Criteria audit.* Providers must pay an annual authorization fee and participate in any audit conducted by the Postal Service to ensure that the customer-selected or -provided images or text displayed on Customized Postage products or in the promotion in any medium of Customized Postage products are in compliance with the Eligibility Guidelines set forth in paragraph (a) of this subsection.

(5) *Individual authorization letters.* Additional conditions and requirements for provider authorization may be set forth in individual provider authorization letters.

(6) *Correspondence.* The Postal Service office responsible for administration of this part is the Office of Brand Marketing or its successor organization. All correspondence with the Postal Service required by this part is to be made to this office in person or via mail to 475 L'Enfant Plaza SW., Room 5117, Washington, DC 20260–0004.

Stanley F. Mires,

Attorney, Federal Compliance.

[FR Doc. 2016–31856 Filed 1–4–17; 8:45 am]

BILLING CODE 7710–12–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R04–OAR–2016–0468; FRL–9957–51–Region 4]

Air Plan Approval; Georgia: Procedures for Testing and Monitoring Sources of Air Pollutants

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve portions of State Implementation Plan (SIP) revisions submitted by the State of Georgia, through the Georgia Department of Natural Resources' Environmental Protection Division (GA EPD), on April 11, 2003, November 29, 2010, July 25, 2014, November 23, 2015, and November 29, 2016. The SIP submittals include changes to GA EPD's air quality rules that modify definitions. The portions of the SIP revisions that EPA is proposing to approve are consistent with the requirements of the Clean Air Act (CAA or Act).

DATES: Written comments must be received on or before February 6, 2017.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–R04–OAR–2016–0468 at *http://www.regulations.gov.* Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from *Regulations.gov.* EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *http://www2.epa.gov/dockets/commenting-epa-dockets.*

FOR FURTHER INFORMATION CONTACT: Sean Lakeman, Air Regulatory Management Section, Air Planning and Implementation Branch, Air, Pesticides and Toxics Management Division, U.S. Environmental Protection Agency, Region 4, 61 Forsyth Street SW., Atlanta, Georgia 30303–8960. Mr. Lakeman can be reached by phone at (404) 562–9043 or via electronic mail at *lakeman.sean@epa.gov.*

SUPPLEMENTARY INFORMATION: In the Final Rules section of this **Federal Register**, EPA is approving the State's implementation plan revision as a direct final rule without prior proposal because the Agency views this as a noncontroversial submittal and anticipates no adverse comments. A detailed rationale for the approval is set forth in the direct final rule. If no adverse comments are received in response to this rule, no further activity is contemplated. If EPA receives adverse comments, the direct final rule will be withdrawn and all public comments received will be addressed in a subsequent final rule based on this proposed rule. EPA will not institute a second comment period on this document. Any parties interested in commenting on this document should do so at this time.

Dated: December 15, 2016.

Heather McTeer Toney,

Regional Administrator, Region 4.

[FR Doc. 2016–31754 Filed 1–4–17; 8:45 am]

BILLING CODE 6560–50–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2016–0127; FXES11130900000 167 FF09E42000]

RIN 1018–BB39

Endangered and Threatened Wildlife and Plants; Removing *Trichostema austromontanum* ssp. *compactum* (Hidden Lake Bluecurls) From the Federal List of Endangered and Threatened Plants

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; availability of a draft post-delisting monitoring plan.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to remove the plant *Trichostema austromontanum* ssp. *compactum* (Hidden Lake bluecurls) from the Federal List of Endangered and Threatened Plants on the basis of recovery. This determination is based on a review of the best available scientific and commercial information, which indicates that the threats to *T. a.* ssp. *compactum* have been eliminated or reduced to the point where it no longer meets the definition of an endangered species or a threatened species under the Endangered Species Act of 1973, as amended (Act). We are seeking information and comments from the public regarding this proposed rule and the draft post-delisting monitoring (PDM) plan for *T. a.* ssp. *compactum.*

DATES: We will accept comments received or postmarked on or before March 6, 2017. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by February 21, 2017.

ADDRESSES: *Comment submission:* You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: *http://www.regulations.gov.* In the Search box, enter FWS–R8–ES–2016–0127, which is

the docket number for this rulemaking. Then click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on ''Comment Now!''.

(2) *By hard copy:* Submit by U.S. mail or hand-deliver to: Public Comments Processing, Attn: Docket No. FWS–R8–ES–2016–0127, U.S. Fish and Wildlife Service, MS: BPHC; 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *http://www.regulations.gov.* This generally means that we will post any personal information you provide us (see Information Requested, below, for more information).

Document availability: A copy of the draft PDM plan referenced throughout this document can be viewed at *http://ecos.fws.gov/ecp0/profile/speciesProfile?sId=1285,* at *http://www.regulations.gov* under Docket No. FWS–R8–ES–2016–0127, or at the Carlsbad Fish and Wildlife Office's Web site at *http://www.fws.gov/Carlsbad/.*

FOR FURTHER INFORMATION CONTACT: G. Mendel Stewart, Field Supervisor, Carlsbad Fish and Wildlife Office, 2177 Salk Avenue, Suite 250, Carlsbad, CA 92008; telephone 760–431–9440; facsimile (fax) 760–431–5901. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Information Requested

We intend any final action resulting from this proposal will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other governmental agencies, tribes, the scientific community, industry, or other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) Reasons why we should or should not remove *Trichostema austromontanum* ssp. *compactum* from the List of Endangered and Threatened Plants (*i.e.,* ''delist'' the subspecies) under the Act;

(2) New biological or other relevant data concerning any threat (or lack thereof) to this subspecies (for example, those associated with climate change);

(3) New information on any efforts by the State or other entities to protect or otherwise conserve the subspecies;

(4) New information concerning the range, distribution, and population size or trends of this subspecies;

(5) New information on the current or planned activities in the habitat or range that may adversely affect or benefit the subspecies; and

(6) Information pertaining to the requirements for post-delisting monitoring of *Trichostema austromontanum* ssp. *compactum.*

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include. Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, may not meet the standard of information required by section 4(b)(1)(A) of the Act (16 U.S.C. 1531 *et seq.*), which directs that determinations as to whether any species is an endangered or threatened species must be made ''solely on the basis of the best scientific and commercial data available.''

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**. If you submit information via *http://www.regulations.gov,* your entire submission—including any personal identifying information—will be posted on the Web site. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *http://www.regulations.gov.*

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *http://www.regulations.gov,* or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Carlsbad Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Public Hearings

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. We must receive your request by the date specified above in **DATES**. Send your request to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodation, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Previous Federal Actions

On September 14, 1998, we published a final rule (63 FR 49006) to list *Trichostema austromontanum* ssp. *compactum* as a threatened species. At that time, we determined that the designation of critical habitat was not prudent because it would likely increase the number of visitors to the geographic location of the single known occurrence and because it would undermine ongoing efforts by the California Department of Parks and Recreation (CDPR to protect this occurrence. As a consequence of a settlement agreement, we withdrew our previous not-prudent determination, and agreed to reevaluate the prudency of designating critical habitat. However, based on our review and evaluation of the best scientific and commercial information available, we determined that designation of critical habitat continued to be not prudent for *T. a.* ssp. *compactum* (72 FR 54377; September 25, 2007).

Subspecies Information

It is our intent to discuss only those topics directly related to the delisting in this proposed rule. For more information on the description, biology, ecology, and habitat of *Trichostema austromontanum* ssp. *compactum,* please refer to the listing final rule published in the **Federal Register** on September 14, 1998 (63 FR 49006); the critical habitat prudency determination published in the **Federal Register** on September 25, 2007 (72 FR 54377); the most recent 5-year review for *T. a.* ssp. *compactum* completed on May 6, 2013 (Service 2013, entire); and the Conservation Strategy for *T. a.* ssp. *compactum,* completed in 2009 (Fraga and Kietzer 2009, pp. 1–29). These documents will be available as supporting materials at *http://www.regulations.gov* under Docket No. FWS–R8–ES–2016–0127.

Subspecies Description

Trichostema austromontanum ssp. *compactum,* a member of the Lamiaceae (mint family), was described by F. Harlan Lewis (1945) based on specimens collected in 1941, by M.L. Hilend at Hidden Lake in the San Jacinto Mountains of Riverside County, California. *Trichostema a.* ssp. *compactum* is a compact, soft-villous (with long, shaggy hairs), annual plant, approximately 4 inches (in) (10 centimeters (cm)) tall, with short

internodes (stem segments between leaves), elliptic leaves, and blue flowers with a five-lobed corolla (Lewis 1945, pp. 280–281, 284–285; Lewis 1993, p. 732). Its fruit consists of four smooth, basally-joined nutlets. Many taxa of *Trichostema* have volatile secondary plant compounds that produce a strong odor and taste. The common name vinegar weed is attributed to many different species of *Trichostema.*

Subspecies Biology

Trichostema austromontanum ssp. *compactum* is only found on the margins of Hidden Lake, a small montane vernal pool, in the San Jacinto Mountains, Riverside County, California. At an elevation of 8,700 feet (ft) (2,650 meters (m)), Hidden Lake is Riverside County's only high-elevation vernal pool (Bauder 1999, pp. 3–4), and is owned and managed by Mount San Jacinto State Park (Park). Hidden Lake is located within a California State Park Natural Preserve (The Hidden Lake Divide Natural Preserve) and is surrounded by the Mount San Jacinto State Wilderness Area (CDPR 2002, pp. 62–63). The single pool that supports the entire range of *T. a.* ssp. *compactum* encompasses an area of approximately 2 acres (ac) (1 hectare (ha)) and is about 4 ft (1.3 m) deep during the period of maximum inundation (November to April) (Bauder 1999, p. 13; CDPR 2002, pp. 62–63). The pool shrinks in size as the seasons progress, sometimes remaining wet in the center and other times drying out completely.

Additionally, a small population (36 individuals) of *Trichostema austromontanum* ssp. *compactum* was once observed less than 300 ft (100 m) outside of the Hidden Lake area of inundation (Fraga and Wall 2007, p. 10). This area is within the vernal pool's watershed, and is within the aforementioned Natural Preserve and State Wilderness.

Several studies have examined the breeding system, habitat parameters, and micro-distribution of *Trichostema austromontanum* ssp. *compactum* and its relatives (Lewis 1945, pp. 276–303; Lewis 1960, pp. 93–97; Spira 1980, pp. 278–284; Bauder 1999, pp. 1–41). Seeds of *T. a.* ssp. *compactum* typically germinate in early July, and plants complete their life cycle as the temperature begins to drop to freezing (October to November) (Fraga and Wall 2007, pp. 2–5). Plants generally flower between July and September, but flowering has been documented as late as November (Bauder 1999, p. 1; Fraga and Wall 2007, pp. 4–5). Fruits and seeds begin to develop in early August and continue to develop until November (Fraga and Wall 2007, pp. 2–5). *Trichostema austromontanum* ssp. *compactum* has no documented pollinators and is self-compatible (flowers are able to be fertilized by pollen from of the same plant) (89.1 percent seed set with the exclusion of pollinators) (Spira 1980, p. 282). Spira (1980, p. 280) also found that insects visiting the other subspecies of *T. austromontanum* lacked pollen grains on their dorsal surface (which is needed for the transfer of pollen to stigma) and, therefore, were not acting as effective pollinators. This suggests that flowers of both subspecies of this species are not commonly pollinated by insects and are likely self-fertilized (Spira 1980, pp. 280–283).

Trichostema austromontanum ssp. *compactum* produces seeds that exhibit characteristics that relate to its adaptation to variable environmental conditions. In nature, plants occur around the margins of Hidden Lake in open soil that is exposed during the summer after the water recedes (Bauder 1999, p. 37). A germination study of *T. a.* ssp. *compactum* was conducted by Bauder (1999) using controlled light and temperature growing chambers. Results from the study indicated that daily temperature maxima must be in the range of 77 to 86 degrees Fahrenheit (°F) (25 to 30 degrees Celsius (°C)) for germination to occur (Bauder 1999, p. 37). This study also showed that seeds require a period of cold stratification and a cycle of wet and dry conditions to break their dormancy (Bauder 1999, pp. 28–30, 37). A large portion of the seeds produced by *T. a.* ssp. *compactum* did not germinate in this study and a subsequent germination study conducted by staff at Rancho Santa Ana Botanic Garden (RSABG). The authors of both reports suggested that seeds that do not germinate remain in the soil as a seed bank over multiple seasons until specific environmental and physiological conditions are met (Bauder 1999, p. 37; RSABG 2009, p. 5; see also Baskin and Baskin 1989, pp. 54–66).

The soil seed bank provides a buffering mechanism for this taxon against the variability of its habitat conditions and periodic drought years. For example, there may be a year when Hidden Lake dries atypically fast or is subject to a seasonal inundation (*e.g.,* from a late-summer thunderstorm), which may lead to a catastrophic loss of a standing population prior to seed set. Thus, a soil seed bank offsets the loss of seeds in poor years. This strategy helps *Trichostema austromontanum* ssp. *compactum* to persist in a variable environment, similar to other species adapted to vernal pool habitat or desert environments (Philippi 1993, pp. 481–484; Simovich and Hathaway 1997, pp. 41–43). Due to the complex nature of this strategy to persist through varied conditions, we will recommend as part of the PDM plan to conduct research on seed viability, seed longevity, and reproductive potential of standing plants to better understand the long-term health of this subspecies and the likelihood that the small occurrence can persist.

Range, Distribution, Abundance, and Habitat

Surveys have shown that the population size of *Trichostema austromontanum* ssp. *compactum* differs greatly from year to year. This fluctuation may be due to the amount of precipitation, the extent of suitable habitat along the margins of the lake, or a combination of factors. The population has been documented to be as large as 243,000 individuals in 2012, to as few as 75 individuals in 2000 (Fraga and Wall 2010, p. 6; CNDDB 2011, p. 1; Fraga 2016, pers. comm.). Despite the annual differences in population size, the population is considered stable because the variation in population size is primarily due to natural factors and because similar variations are seen over a multi-year period.

Trichostema austromontanum ssp. *compactum* seeds germinate around the margin of Hidden Lake as the ponded water evaporates (Bauder 1999, pp. 20–23). Though the highest density of plants has been observed in different portions of the vernal pool margin, observations of *T. a.* ssp. *compactum* were most abundant on the northern margin of the vernal pool (Fraga and Wall 2007, p. 4). This area likely receives more sunlight due to the lack of trees just to the south where the pool is located. A small subpopulation is located in a swale (a low area where runoff collects) approximately 300 ft (91 m) away to the northeast from the vernal pool between the Desert View Overlook and Hidden Lake.

Pre-Listing Threats

From the 1920s to the 1980s, Hidden Lake was a popular destination in the Park for hikers and equestrians. In 1964, a tram was constructed that greatly increased the number of visitors to the Park. In the 1970s and 1980s, a movie was shown to tram-riders that included images of people swimming at Hidden Lake (Hamilton 1983, p. 96). The high number of visitors to Hidden Lake, combined with the lack of regulations on the use of Hidden Lake, threatened

the rare and unique community of plants and animals found at this high montane vernal pool. There was special concern for the continued existence of *Trichostema austromontanum* ssp. *compactum* because Hidden Lake was the only location where this subspecies occurred. Researchers found that in cases of heavy trampling, the number of *T. a.* ssp. *compactum* plants that survived to produce flower was greatly reduced (Hamilton 1991, p. 22). The Service and others were concerned that without the protections and implementation of proper management actions, *T. a.* ssp. *compactum* could become endangered and possibly extinct. *Trichostema austromontanum* ssp. *compactum* was subsequently listed as a threatened species due to vulnerabilities associated with trampling and due to its limited numbers (63 FR 49006).

Recovery Implementation

A formal recovery plan for *Trichostema austromontanum* ssp. *compactum* has not been prepared, and, therefore, specific delisting criteria have not been developed for the subspecies. However, the Service reviewed the status of the subspecies in the 2006 and 2013 5-year reviews (Service 2006; 2013). In those reviews, the Service identified remaining threats to the taxon and actions that could be taken to make progress in addressing those threats and ensuring long-term management. These included demonstrating that: (1) Management by CDPR has been effective; (2) stochastic threats are not significant; and (3) sufficient seed is banked for reintroduction after an adverse stochastic event (Service 2013, pp. 14–15). We identified in the 2009 Spotlight Species Action Plan (Service 2009, pp. 2–4, 6) specific actions that would ameliorate threats and ensure long-term management:

(1) Continue work with CDPR as partners to monitor visitor use at Hidden Lake;

(2) Monitor population and habitat of *Trichostema austromontanum* ssp. *compactum;*

(3) Complete collections for seed banking;

(4) Devise long-term protocol for seed banking and use of seeds in recovery; and

(5) Finalize the Conservation Strategy and a long-term management plan for the subspecies, and a long-term agreement with CDPR that will include established monitoring and the implementation of an adaptive management plan.

Existing conservation efforts for each of these actions are discussed below.

(1) Continue Work With CDPR as Partners To Monitor Visitor Use at Hidden Lake

Monitoring of visitor use at Hidden Lake was conducted by CDPR from 2007 to 2015 (Kietzer 2011a, pp. 4–5). Although unauthorized access to the area appears to have been minimized (Fraga and Wall 2010, p. 5; Kietzer 2011a, pp. 4–5), CDPR will continue to monitor visitor use as described in the draft PDM plan. This action has been fully implemented, and we expect implementation to continue as part of the PDM plan and Conservation Strategy.

(2) Monitor Population and Habitat of *Trichostema austromontanum* ssp. *compactum*

In coordination with the Service, CDPR and RSABG developed a monitoring protocol for *Trichostema austromontanum* ssp. *compactum* resulting from several years of investigation (2006 to 2009), which included mapping the area of occupancy of *T. a.* ssp. *compactum* around Hidden Lake and conducting census counts to estimate population size (Fraga and Wall 2010, pp. 4–6; Fraga and Kietzer 2012, p. X). Additionally, equipment for monitoring Hidden Lake's microclimate and its effects on the lake level was installed by CDPR in 2010 (Kietzer 2011a, pp. 2–3; Kietzer 2011b, p. 4). Over the past few years, CDPR and RSABG have worked together to develop and implement a more robust statistical sampling method. Initial results suggest that plant numbers were previously underestimated in annual surveys (Kietzer 2016, pers. comm.). Monitoring of this taxon and its habitat will continue as described in the draft PDM plan and Conservation Strategy.

(3) Complete Collections for Seed Banking

Collection of *Trichostema austromontanum* ssp. *compactum* seeds and establishment of an *ex situ* (off-site) conservation seed bank at RSABG occurred over 3 years (2006, 2008, and 2009). For security purposes, back-up samples from each year's collections will be stored at the U.S. Department of Agriculture's National Center for Genetic Resource Preservation in Fort Collins, Colorado (Fraga and Wall 2010, p. 7). This provides insurance against the subspecies going extinct if the natural occurrence were extirpated due to an adverse stochastic event or other circumstances (such as disease or prolonged drought).

(4) Devise Long-Term Protocol for Seed Banking and Use of Seeds in Recovery

Trichostema austromontanum ssp. *compactum* seeds collected at Hidden Lake are being stored at RSABG. Germination trials will be conducted at regular intervals to determine a long-term protocol for seed banking and use of seeds in recovery. This project is ongoing and is discussed in further detail in the draft PDM plan.

(5) Finalize the Conservation Strategy and a Long-Term Management Plan for the Subspecies, and a Long-Term Agreement With CDPR That Will Include Established Monitoring and the Implementation of an Adaptive Management Plan

A Conservation Strategy was developed that outlined additional conservation actions for this taxon (Fraga and Kietzer 2009, pp. 1–29), which was used as the foundation for the draft PDM plan. Methods for long-term monitoring of this taxon are discussed further in the draft PDM plan (see **ADDRESSES** for information on viewing the draft PDM plan).

Summary of Factors Affecting *Trichostema austromontanum* ssp. *compactum*

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for listing species on, reclassifying species on, or removing species from the Lists of Endangered and Threatened Wildlife and Plants. ''Species'' is defined by the Act as including any species or subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. 1532(16)). A species may be determined to be an endangered species or threatened species because of any one or a combination of the five factors described in section 4(a)(1) of the Act: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. A species may be reclassified on the same basis.

A recovered species is one that no longer meets the Act's definition of endangered species or threatened species. Determining whether a species is recovered requires consideration of whether the species is still an endangered species or threatened

species because of any of the five categories of threats specified in section 4(a)(1) of the Act. For species that are already listed as endangered or threatened species, this analysis of threats is an evaluation of both the threats currently facing the species and those that are reasonably likely to affect the species in the foreseeable future following the delisting or downlisting (*i.e.,* reclassifying a species from an endangered species to a threatened species) and the removal or reduction of the Act's protections.

A species is an ''endangered species'' for purposes of the Act if it is in danger of extinction throughout all or a significant portion of its range and is a ''threatened species'' if it is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act does not define the term ''foreseeable future.'' For this proposed delisting rule, our forecast of future impacts is based on a review of the period of available data for each stressor and, when possible, a projection of the situation at least for a similar time period into the future. For example:

- The effect of trampling on *Trichostema austromontanum* ssp. *compactum* can be addressed through management of hikers and equestrians, which CDPR does through implementing regulatory mechanisms. CDPR started addressing the impacts about the time the subspecies was listed, in particular with the Mount San Jacinto State Park general plan update in 2002. This plan serves as a ''long-range management tool'' by providing ''conceptual parameters for future management actions'' (CDPR 2002, p. 3). To assess the timeframe of this regulatory mechanism, we note that it does not include an ''expiration date'' or equivalent. Further, we note that in 2010, CDPR changed its approach to the duration of a given Park's general plan, stating in its Planning Handbook (CDPR 2010, p. 17) that CDPR previously considered general plans to have a 15- to 20-year planning horizon or lifespan. Under the current planning structure of broad, goal-oriented general plans and subordinate, more focused management plans, general plans are no longer thought of as having expiration dates or a finite life span when they would be considered invalid. General plans are reconsidered for amendments or revisions when circumstances and needs dictate, such as additional land acquisitions and/or substantial development considerations that were not addressed in the general plan or evaluated during the general plan process.

Thus, for trampling, we have about a 15-year record of management actions to benefit *Trichostema austromontanum* ssp. *compactum* that are linked to the general plan's implementation, and because the general plan is a long-term document (more than 15 to 20 years), we expect that management will continue into the future for at least 20 years. At the future point when the general plan is updated, the public—including the Service—will have the opportunity to review and comment on the new general plan under the State's California Environmental Quality Act (CEQA) process (independent of the subspecies' listing status).

- The timeline for the effects of small populations is inherently difficult to assess, and the effects are inherently difficult to address. This is especially true for a population that is naturally small, which is the case for *Trichostema austromontanum* ssp. *compactum.* Population trend data can help with that assessment. As detailed in the draft PDM plan, we have at least rough estimates of population size going back to 1979, though with a gap between 1993 and 2006, when more formalized monitoring began. Thus, we have a general idea about the population's size over a span of about 40 years.
- Although information exists regarding potential impacts from climate change beyond a 50-year timeframe, the projections depend on an increasing number of assumptions, and thus become more uncertain with increasingly large timeframes. Therefore, a timeframe of 50 years is used to provide the best balance of scope of impacts considered, versus certainty of those impacts.

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

No threats to the habitat of *Trichostema austromontanum* ssp. *compactum* were identified in the final listing rule (63 FR 49006). Present or threatened destruction, modification, or curtailment of *T. a.* ssp. *compactum*'s habitat or range is not now a threat, nor do we expect it to be in the future. The land where *T. a.* ssp. *compactum* occurs is owned and managed by the Mount San Jacinto State Park and is located within a California State Park Natural Preserve, which is surrounded by the San Jacinto State Wilderness Area (CDPR 2002, pp. 62–63). Because the only known occurrence of this subspecies is on State-owned land designated as State Wilderness inside a State Park, and the Hidden Lake area has been designated as the Hidden Lake Divide Natural Preserve, the subspecies and its habitat are protected from any development or other modification of habitat. Some habitat disturbance from recreational activities has occurred in the past. As discussed below, surveys have been conducted at Hidden Lake in recent years and observers found that habitat disturbances have been minimized (Fraga and Wall 2010, p. 5). We anticipate that these conditions will remain essentially the same in the future because of the CDPR's implementation of the Park's general plan.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

In the 1998 final listing rule, no threats to *Trichostema austromontanum* ssp. *compactum* were attributed to Factor B (63 FR 49006). Since listing, we are only aware of the collections of seed and plant material by Service-authorized permittees for the purpose of creating a conservation seed bank for this taxon at RSABG (USFWS permit #TE00918–3). These permitted collections were conducted by trained individuals, following Service guidelines to minimize effect on the population of *T. a.* ssp. *compactum.* If the subspecies is delisted, no Service permit would be required. However, the Park would continue to manage access and special use permits as required by the Park, and any future collection would be consistent with conservation management for the subspecies, such as for continued monitoring or research. In conclusion, we find that there are no threats now nor are there likely to be any threats in the future to *T. a.* ssp. *compactum,* throughout its range, related to overutilization for commercial, recreational, scientific, or educational purposes.

C. Disease or Predation

No threats to *Trichostema austromontanum* ssp. *compactum* were attributed to Factor C in the 1998 listing rule (63 FR 49006). We have no data to suggest that herbivory or disease are affecting *T. a.* ssp. *compactum,* nor do we have data that suggest impacts will become a threat in the future. Therefore, we find that there are no threats now nor are there likely to be any threats in the future to *T. a.* ssp. *compactum,* throughout its range, related to disease or predation.

D. The Inadequacy of Existing Regulatory Mechanisms

In our discussion under Factors A, B, C, and E, we evaluate the significance of threats as mitigated by any conservation efforts and existing regulatory

mechanisms. Where threats exist, we analyze the extent to which conservation measures and existing regulatory mechanisms address the specific threats to the species. Regulatory mechanisms, if they exist, may reduce or eliminate the impacts from one or more identified threats.

Although inadequacy of existing regulatory mechanisms was not specifically identified as a threat to *Trichostema austromontanum* ssp. *compactum* at the time of listing, we did discuss the very limited number of protections that existed for the subspecies (63 FR 49006). Specifically, we discussed conservation provisions under section 404 of the Federal Clean Water Act (CWA; 33 U.S.C. 1251 *et seq.*) and land management of CDPR at the Park.

Section 404 of the Federal Clean Water Act (CWA)

Under section 404 of the Federal CWA, the U.S. Army Corps of Engineers (Corps) regulates the discharge of fill material into waters of the United States, which include navigable and isolated waters, headwaters, and adjacent wetlands (33 U.S.C. 1344). Any action with the potential to impact waters of the United States must be reviewed under the Federal CWA, National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), and (when listed species may also be impacted) the Act. However, because the only known occurrence of this subspecies was on State-owned land designated as a State Wilderness inside a State Park, we believed at the time the subspecies was listed that it was unlikely that fill materials will be discharged and thus protections associated with section 404 of the Federal CWA would not be relevant. Now, Hidden Lake is within an area designated by the State as Natural Preserve, which itself is within State Wilderness. As such, we continue to believe that it is unlikely that an action will occur that would trigger section 404 of the Federal CWA.

California Department of Parks and Recreation (CDPR)

As discussed above, the entire known distribution of *Trichostema austromontanum* ssp. *compactum* occurs at a single vernal pool known as Hidden Lake, owned by the State of California and managed by CDPR. Under existing regulatory mechanisms enacted by the State of California, CDPR manages specifically for the conservation of the subspecies. While discussion of CDPR's management of many aspects of the conservation needs of the subspecies might also be appropriately discussed under other factors (*e.g.,* eliminating trails to maintain natural drainage could also be discussed under factor A; efforts to reduce and manage impacts from recreational activities could also be discussed under factor E), it is included here for ease of discussion since CDPR's authority to provide for the continued conservation of the species flows from regulatory protections provided by state regulations, designations, and the park's general plan. Such management was being implemented before listing and is being implemented today. Prior to listing, the protections included actions to reduce impacts from visitors by removing references to Hidden Lake from trail maps and signs. Since listing, the CDPR installed barriers in 2000, to exclude equestrian use of the area surrounding Hidden Lake (Guaracha, CDPR, 2006, pers. comm.), thereby reducing the threat of trampling to the subspecies (see Factor E discussion, below).

As a part of the 2002 general plan for Mount San Jacinto State Park, CDPR designated Hidden Lake and its associated watershed area as the Hidden Divide Natural Preserve (Preserve) (CDPR 2002, pp. 62–63). As a Preserve, the 255-acre (103-ha) area is afforded regulatory protection under California Public Resources Code section 5019.71, which states, ''[t]he purpose of natural preserves shall be to preserve such features as rare or endangered plant and animal species and their supporting ecosystems.'' This allows CDPR to manage Hidden Lake specifically for the conservation of *Trichostema austromontanum* ssp. *compactum* and other sensitive resources found in the area, as opposed to pre-designation when recreational use was part of management considerations. We summarize below the management actions CDPR has taken for the conservation of the subspecies associated with management under the natural preserve designation.

With funding from the Service's Showing Success Grant Program (a Service initiative, discontinued in 2012, that provided funding for final actions needed to bring a species to the point it could be downlisted or delisted), CDPR conducted a survey of the Preserve boundary and erected signs along the official trail informing visitors that off-trail hiking is prohibited in the Preserve. Additionally, these funds were used to install an automated weather station, conduct monitoring of unauthorized visitors, and establish monitoring protocols for *Trichostema austromontanum* ssp. *compactum* in coordination with RSABG and the Service, which will allow for future management of the area and visitors' activity based on the regulatory mechanisms now available.

Additionally, CDPR has recently constructed the Hidden Divide Trail to minimize impacts to *Trichostema austromontanum* ssp. *compactum* from now-unauthorized access, while facilitating future authorized but restricted visits to the Preserve. This process involved eliminating an existing unauthorized trail and moving it approximately 20 to 40 ft (6 to 12 m) upslope and away from the margin of Hidden Lake where the largest portion of *T. a.* ssp. *compactum* occurs. The trail bed is incorporated into the existing slope where it should be easier, compared to the unauthorized trial, to maintain natural drainage patterns in the Hidden Lake's watershed. Inspections of the completed trail will take place by trained CDPR staff during peak seasons, and maintenance will occur as needed to prevent alteration of natural hydrology. The new Hidden Divide Trail will not directly connect to other Park trails and will remain off maps and unadvertised by Park staff. Once completed, CDPR will allow access to the trail through a limited permit system or guided tour only for those visitors who inquire about the site. Horses will not be allowed. The trail will provide some viewing areas with interpretive signs to educate visitors about the unique ecosystem supporting *Trichostema austromontanum* ssp. *compactum.* Fencing has been erected along the trail to restrict physical access to Hidden Lake; signs will also help minimize off-trail use.

Based on the regulatory mechanisms now available, CDPR will increase visitor monitoring and begin a zero-tolerance program, issuing citations to off-trail visitors within the Preserve (Fraga and Kietzer 2009, pp. 16–17). Finally, adaptive management techniques will be applied. For example, CDPR will monitor *Trichostema austromontanum* ssp. *compactum* populations and visitor use of the Hidden Lake area; the combined information will allow CDPR to control visitation, minimizing impact to the subspecies and its habitat (Fraga and Kietzer 2009, p. 22).

Additionally, Hidden Lake and the Hidden Divide Natural Preserve are within an area designated as State Wilderness. California Public Resources Code section 5019.68 recognizes such areas, ''as areas where the earth and its community of life are untrammeled by man and where man himself is a visitor who does not remain.'' California Public

Resources Code sections 5093.30–5093.40, the California Wilderness Act, also states that wilderness areas, including Mount San Jacinto State Wilderness, ''shall be administered for the use and enjoyment of the people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, provide for the protection of such areas, [and] preserve their wilderness character.'' As the Conservation Strategy for the subspecies notes, ''Being within a Natural Preserve and a State Wilderness Area provides [*Trichostema austromontanum*] ssp. *compactum* the highest level of protection for natural resources that the State Park System has to offer'' (Fraga and Kietzer 2009, p. 19). Thus, these regulatory mechanisms will help minimize likelihood of future threats to *T. a.* ssp. *compactum* and its habitat at Hidden Lake.

These protections enacted by the CDPR associated with the Preserve are expected to remain should this subspecies be delisted, and we believe these protections are adequate to reduce or eliminate existing or potential future threats to *Trichostema austromontanum* ssp. *compactum* now and in the future.

Summary of Factor D

We believe that, in absence of the protections afforded by the Act, the other existing regulatory mechanisms will continue to provide adequate protections to ensure that threats to *Trichostema austromontanum* ssp. *compactum* are controlled through management and monitoring programs established by CDPR. Listing under the Act provided support for the Service and CDPR to establish management and monitoring programs to provide for the conservation of *T. a.* ssp. *compactum.* If this subspecies is removed from the Federal List of Endangered and Threatened Plants, the primary protections for *T. a.* ssp. *compactum* will be provided by CDPR through conservation actions to benefit the subspecies in the Preserve. These protections are applied in connection with the Park's existing general plan, and we expect that they will remain unchanged at least until a new plan is adopted, which would not occur until circumstances or needs dictate and, moreover, would not occur without the opportunity of review and comment by the Service and public. This, in turn, would likely mean that any changes to the protections provided by the new general plan would not result in substantial impacts to *T. a.* ssp. *compactum.* In conclusion, we find that the currently existing regulatory mechanisms described above are adequate, and they will remain adequate to protect *T. a.* ssp. *compactum* and its habitat across its range now and in the future.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

In the 1998 final listing rule, we stated that *Trichostema austromontanum* ssp. *compactum* was particularly vulnerable to trampling by recreational visitors and that the subspecies' low numbers and extremely localized range further made it more susceptible to disturbance, which included trampling during the flowering season (63 FR 49006, pp. 49016–49017). In our 2013 5-year review (Service 2013, pp. 13–14), we also identified effects associated with global climate change as potential threats, which were not considered at the time of listing. Trampling, low numbers of individuals, and climate change are discussed below.

Trampling

At the time of listing, the trampling threat to *Trichostema austromontanum* ssp. *compactum* was due to its extremely narrow endemic habitat and easy accessibility to Hidden Lake from the trail, just over a mile from the tramway (63 FR 49006). This site became increasingly popular with the development of the Palm Springs Aerial Tramway in 1964, and the Desert Divide Trail in 1979. Measures such as removing references to Hidden Lake from State Park interpretive materials and eliminating existing trails helped to ameliorate impacts from visitors, but did not prevent all trampling impacts. The 1998 listing rule (63 FR 49006) indicated the subspecies continued to experience ongoing impacts from trampling by hikers and horses at that time.

Since listing, CDPR, in cooperation with RSABG staff, finalized the Conservation Strategy for *Trichostema austromontanum* ssp. *compactum* (Hidden Lake bluecurls; Lamiaceae) (Fraga and Kietzer 2009, entire), and CDPR has completed several actions to minimize the threat of trampling to the subspecies (Fraga and Kietzer 2009, pp. 25–26). CDPR reduced the likelihood of visitation to the area (by both humans and horses) by removing references to Hidden Lake from trails, maps, and signs in the Park, and physically obscuring trails to the lake (72 FR 54377; see also Fraga and Kietzer 2009, p. 16). Additionally, CDPR installed a wooden barrier fence at historical access points to exclude equestrian use (Fraga and Kietzer 2009, p. 16). CDPR also designated Hidden Lake and its associated watershed area as a Natural Preserve as part of their 2002 general plan revision (CDPR 2002, pp. 62–63), as discussed under Factor D, above. Although a low number of hikers currently access the Hidden Lake area despite efforts to exclude visitors from the area, impacts from trampling appear to have been minimized (Fraga and Wall 2010, p. 5; Kietzer 2011a, pp. 4–5). Furthermore, there is no evidence that horses have had access to the area around Hidden Lake since the exclusionary fences were installed in 2000 (Fraga and Kietzer 2009, p. 13; Fraga and Wall 2010, p. 5).

We expect that most of these measures to benefit *Trichostema austromontanum* ssp. *compactum* will remain in place for at least the next few decades while the 2002 general plan is active. Further, we expect future general plans to continue to prevent impacts to *T. a.* ssp. *compactum* because, compared to the time of listing, CDPR is more aware of how certain recreational uses of Hidden Lake are incompatible with the conservation of the subspecies and have taken measures to minimize future impacts. This is illustrated by CDPR's formal designation of the Preserve. Thus, trampling of *T. a.* ssp. *compactum* by hikers and horses has largely been eliminated, and there is little likelihood that trampling will be a threat to the subspecies in the future.

Low Numbers of Individuals

In the final listing rule (63 FR 49006), we described the vulnerabilities associated with low numbers, stating that the limited numbers and extremely localized range of *Trichostema austromontanum* ssp. *compactum* make this taxon more susceptible to single disturbance events such as trampling during the flowering season or alteration of the local water table from soil compression. However, the 1998 final rule did not provide details explaining why we concluded that the subspecies was more susceptible to disturbance. We provide additional explanation in our 2013 5-year review (Service 2013, p. 12), in which we note that conservation biology literature (such as Shaffer 1981, pp. 131–134; 1987, pp. 69–86; Primack 1998, pp. 301–308; Leppig and White 2006, pp. 264–274) commonly notes the increased vulnerability of taxa known from only one or very few locations and when only small populations exist. We then explained that the threat associated with low numbers of individuals was based on the idea that in years when there were fewer than 100 individual plants, very little seed was produced, resulting in a species that may not persist on its own.

Based on new information since the time of listing, we now know that it is likely that *Trichostema austromontanum* ssp. *compactum* is able to survive years with poor conditions and very few flowering plants because of the existing, naturally occurring, on-site seed bank in the soil (Bauder 1999, p. 37). The majority of seeds of *T. a.* ssp. *compactum* produced each year are likely deposited in the soils of the basin of Hidden Lake because there are no known means of seed dispersal. We have also found through germination experiments that only a small percentage of seeds germinate, even when conditions are appropriate (Bauder 1999, p. 28; Fraga and Wall 2009, p. 5). This suggests that some proportion *T. a.* ssp. *compactum* seeds likely remain dormant in the soil and survive through years lacking adequate environmental conditions for plants to reach maturity and reproduce. In the draft PDM plan, we recommend monitoring reproductive success of the taxon, because it may be cause for concern if the reproductive potential decreases. Data collected since 1980 on this taxon show that the standing population size fluctuates from fewer than 100 to greater than 10,000 plants, but the presence of a persistent soil seed bank has allowed the subspecies to persist. The differences in standing population size of *T. a.* ssp. *compactum,* especially absent evidence of trampling, may still be best characterized as natural variation or fluctuation tied to the annual water level of Hidden Lake (Bauder and McMillan 1998, pp. 63–66; Bauder 1999, pp. 13–17). In this manner, we believe that the low numbers of individuals in some years is a temporary phenomenon and does not pose a long-term threat to this plant. Nevertheless, an *ex situ* seed bank (an off-site, artificial collection of seeds held in special climate-controlled conditions for long-term storage) has been established and is discussed further in the draft PDM plan.

As noted in the 2013 5-year review (Service 2013, pp. 12–13), species known from only one or a few populations, or that exist in populations with low numbers of individuals, are more vulnerable to stochastic (random) events. For example, a fire, flood, or drought is likely to be more devastating to a small, localized population than to a large, widespread population. The effects of small populations experiencing increased vulnerability to stochastic events have not been documented for *Trichostema austromontanum* ssp. *compactum* in the past, nor were specific concerns discussed in detail in the final listing rule (63 FR 49006). While it is possible that stochastic events could impact this subspecies in the future, we have no evidence that any potential catastrophic events have a reasonable likelihood of occurring. In addition, we do not believe that this potential threat alone is significant enough to cause long-term population declines because the natural persistent seed bank in the soil would likely survive such events. However, collection of *Trichostema austromontanum* ssp. *compactum* seeds and establishment of an *ex situ* (off-site) conservation seed bank at RSABG occurred over 3 years (2006, 2008, and 2009). This provides insurance against the subspecies going extinct if the natural occurrence were extirpated due to an adverse stochastic event or other circumstances (such as disease or prolonged drought).

Climate Change

Here, we consider observed or likely environmental changes resulting from ongoing and projected changes in climate. The 1998 listing rule did not discuss the potential impacts of climate change on *Trichostema austromontanum* ssp. *compactum* or its habitat (63 FR 49006). As defined by the Intergovernmental Panel on Climate Change (IPCC), the term ''climate'' refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (IPCC 2013a, p. 1,450). The term ''climate change'' thus refers to a change in the mean or the variability of relevant properties, which persists for an extended period, typically decades or longer, due to natural conditions (*e.g.,* solar cycles) or human-caused changes in the composition of atmosphere or in land use (IPCC 2013a, p. 1,450).

Scientific measurements spanning several decades demonstrate that changes in climate are occurring. In particular, warming of the climate system is unequivocal, and many of the observed changes in the last 60 years are unprecedented over decades to millennia (IPCC 2013b, p. 4). The current rate of climate change may be as fast as any extended warming period over the past 65 million years and is projected to accelerate in the next 30 to 80 years (National Research Council 2013, p. 5). Thus, rapid climate change is adding to other sources of extinction pressures, such as land use and invasive species, which will likely place extinction rates in this era among just a handful of the severe biodiversity crises observed in Earth's geological record (AAAS 2014, p. 17).

Examples of various other observed and projected changes in climate and associated effects and risks, and the bases for them, are provided for global and regional scales in recent reports issued by the IPCC (2013c, 2014), and similar types of information for the United States and regions within it can be found in the National Climate Assessment (Melillo *et al.* 2014, entire).

Results of scientific analyses presented by the IPCC show that most of the observed increase in global average temperature since the mid-20th century cannot be explained by natural variability in climate and is ''extremely likely'' (defined by the IPCC as 95 to 100 percent likelihood) due to the observed increase in greenhouse gas (GHG) concentrations in the atmosphere as a result of human activities, particularly carbon dioxide emissions from fossil fuel use (IPCC 2013b, p. 17 and related citations).

Scientists use a variety of climate models, which include consideration of natural processes and variability, as well as various scenarios of potential levels and timing of GHG emissions, to evaluate the causes of changes already observed and to project future changes in temperature and other climate conditions. Model results yield very similar projections of average global warming until about 2030, and thereafter the magnitude and rate of warming vary through the end of the century depending on the assumptions about population levels, emissions of GHGs, and other factors that influence climate change. Thus, absent extremely rapid stabilization of GHGs at a global level, there is strong scientific support for projections that warming will continue through the 21st century, and that the magnitude and rate of change will be influenced substantially by human actions regarding GHG emissions (IPCC 2013b, 2014; entire).

Global climate projections are informative, and in some cases, the only or the best scientific information available for us to use. However, projected changes in climate and related impacts can vary substantially across and within different regions of the world (*e.g.,* IPCC 2013c, 2014; entire) and within the United States (Melillo *et al.* 2014, entire). Therefore, we use ''downscaled'' projections when they are available and have been developed through appropriate scientific procedures, because such projections provide higher resolution information that is more relevant to spatial scales used for analyses of a given species (see

Glick *et al.* 2011, pp. 58–61, for a discussion of downscaling).

Various changes in climate may have direct or indirect effects on species. These may be positive, neutral, or negative, and they may change over time, depending on the species and other relevant considerations, such as interactions of climate with other variables like habitat fragmentation (for examples, see Franco *et al.* 2006; Forister *et al.* 2010; Galbraith *et al.* 2010; Chen *et al.* 2011; Bertelsmeier *et al.* 2013, entire). In addition to considering individual species, scientists are evaluating potential climate change-related impacts to, and responses of, ecological systems, habitat conditions, and groups of species (*e.g.,* Deutsch *et al.* 2008; Berg *et al.* 2010; Euskirchen *et al.* 2009; McKechnie and Wolf 2010; Sinervo *et al.* 2010; Beaumont *et al.* 2011; McKelvey *et al.* 2011; Rogers and Schindler 2011; Bellard *et al.* 2012).

Regional temperature observations are often used as an indicator of how climate is changing. The Western Regional Climate Center (WRCC) has defined 11 climate regions for evaluating various climate trends in California (Abatzoglou *et al.* 2009, p. 1535). The relevant WRCC climate region for the distribution of *Trichostema austromontanum* ssp. *compactum* within the San Jacinto Mountains is the Southern Interior Region.

Two indicators of temperature, the increase in mean temperature and the increase in maximum temperature, are important for evaluating trends in climate change in California. For the Southern Interior climate region, linear trends (evaluated over a 100-year time period) indicate an increase in mean temperatures (January through December) of approximately 1.71 °F (± 0.47 °F per 100 years) (0.95 ± 0.26 °C per 100 years) since 1895, and 3.11 °F (± 1.16 °F per 100 years) (1.73 ± 0.64 °C per 100 years) since 1949 (WRCC 2016). Similarly, the maximum temperature 100-year trend for the Southern Interior Region shows an increase of about 1.48 °F (± 0.57 °F per 100 years) (0.82 ± 0.32 °C per 100 years) since 1895, and 2.54 °F (± 1.38 °F per 100 years) (1.41 ± 0.77 °C per 100 years) since 1949 (WRCC 2016). It is logical to assume the rate of temperature increase for this region is higher for the second time period (*i.e.,* since 1949) than for the first time period (*i.e.,* since 1895) due to the increased use of fossil fuels in the 20th century.

Climate models provide climate projections into the future, which help inform our evaluations of potential future impacts, but these projections become more uncertain with increasingly large timeframes. Pierce *et al.* (2013, entire) presented both Statewide and regional probabilistic estimates of temperature and precipitation changes for California (by the 2060s) using downscaled data from 16 global circulation models and 3 nested regional climate models. The study looked at a historical (1985–1994) and a future (2060–2069) time period using the IPCC Special Report on Emission Scenarios A2 (Pierce *et al.* 2013, p. 841), which is an IPCC-defined scenario used for the IPCC's Third and Fourth Assessment reports, and is based on a global population growth scenario and economic conditions that result in a relatively high level of atmospheric GHGs by 2100 (IPCC 2000, pp. 4–5; see Stocker *et al.* 2013, pp. 60–68, and Walsh *et al.* 2014, pp. 25–28, for discussions and comparisons of the prior and current IPCC approaches and outcomes). Importantly, the projections by Pierce *et al.* (2013, pp. 852–853) include daily distributions and natural internal climate variability.

Simulations using these downscaling methods project an increase in yearly temperature for the Southern California Mountains region ranging from 3.78 °F to 5.22 °F (2.1 °C to 2.9 °C) by the 2060s time period, compared to 1985–1994 (Pierce *et al.* 2013, p. 844). Averaging across all models and downscaling techniques, the simulations project a yearly averaged warming of 4.32 °F (2.4 °C) by the 2060s (Pierce *et al.* 2013, p. 842).

While we do not have information to suggest warmer temperatures will directly impact *Trichostema austromontanum* ssp. *compactum,* there can be indirect effects. For example, Williams *et al.* (2015, p. 6826) found, ''anthropogenic warming has intensified the recent drought [in California] as part of a chronic drying trend that is becoming increasingly detectable,'' but they also noted that it was, ''small relative to the range of natural climate variability.'' Shukla *et al.* (2015, p. 4392) also found that temperature was an important factor in exacerbating drought conditions in California in 2014, although they noted that the low level of precipitation was the primary driver. Thus, the anticipated increasing temperatures (driven by global climate change) are likely to contribute to increased severity of droughts when they occur. However, because the natural climate of California is so variable, it is not clear whether increased drought severity will have substantial impact on *T. a.* ssp. *compactum,* which can take advantage of wetter years, when they occur, to replenish its natural seed bank.

Higher temperatures can also be expected to result in increased evaporation, which suggests that Hidden Lake will likely dry more quickly over a season. However, the effects of increased evaporation to habitat occupied by *Trichostema austromontanum* ssp. *compactum* or to the plant's life history are uncertain. For example, faster evaporation of Hidden Lake might provide an increased growing season (more time at the beginning) because more habitat may be available earlier in the season (the plant primarily grows in the dry portions of the lakebed), or it could result in a shorter growing season (less time at the end) because the area dries out too much and the plants may desiccate before producing seed, or the two processes could happen together and produce a shift in the growing season (same overall amount of growth time, just starting earlier in the year). Observed increases in temperature over the past 100 years do not appear to have currently adversely affected the subspecies. Based on the best available regional data, current and future trends do not lead us to conclude that change in ambient temperature is currently a threat to *T. a.* ssp. *compactum* or likely to become one in the future.

Precipitation patterns can also be used as an indicator of how climate is changing. We obtained yearly precipitation data for the Idyllwild region of the San Jacinto Mountains from the National Oceanic and Atmospheric Administration's National Centers for Environmental Information (*http://www.ncdc.noaa.gov/*). We then conducted a nonparametric correlation test, the Mann-Kendall statistical test (Hipel and McLeod 1994, pp. 63–64, 856–858), which is commonly used for analyzing climatic time series (*e.g.,* Ahmad *et al.* 2015, entire), to evaluate trends in precipitation over time. This analysis was conducted using the R and R Studio software programs (R Development Core Team 2014) with the ''Kendall'' package, version 2.2 (McLeod 2011). We found no significant trend in precipitation over time (increasing or decreasing) from 1944–2015 (Grizzle 2016, pers. comm.). There is no information currently available that would lead us to conclude that potential changes in the amount of precipitation are a threat now or likely to be in the future. However, changes in the timing and type (rain or snow) of precipitation could alter the unique environment of Hidden Lake and potentially impact habitat where this taxon occurs in the future. To address this concern, we have

included monitoring in the draft PDM plan (see Post-Delisting Monitoring, below) to provide baseline data on climatic conditions as well as the duration and depth of ponding that occurs at Hidden Lake. Additionally, the maintenance of the *ex situ* seed bank provides some flexibility to respond to stochastic events including those associated with a changing climate.

Summary of Factor E

Management actions implemented at Hidden Lake by CDPR in recent years have reduced the threat of trampling to a minimal level. At the time of listing, we were concerned that low numbers of individuals in some years threatened the existence of *Trichostema austromontanum* ssp. *compactum*. Since listing, we collected data suggesting this subspecies has a soil seed bank and germination mechanisms that have allowed the taxon to persist over time, even in years when very few plants flower and set seed. Low numbers of individuals in certain years followed by years with high numbers of individuals suggests this is a natural phenomenon for this taxon. We do not consider stochastic events to be a substantial threat to *T. a.* ssp. *compactum* or its habitat at this time because the subspecies' soil seed bank will likely persist, allowing future growth. Climate change was also identified as a potential threat since listing, but we do not consider it to be a substantial threat at this time, and ongoing management and monitoring is designed to detect future changes. In conclusion, we find that other natural or manmade factors do not represent a substantial threat to *T. a.* ssp. *compactum* now or in the future.

Finding

No threats attributable to Factors A, B, or C were identified at the time *Trichostema austromontanum* ssp. *compactum* was listed in 1998. Threats identified at the time of listing included impacts associated with human and horse trampling (Factor E), the limited numbers and an extremely localized range of *T. a.* ssp. *compactum* (Factor E), and the limited protections afforded by the CDPR to reduce or eliminate those threats (Factor D). Since listing, conditions associated with climate change (Factor E) have been identified as a potential rangewide threat to the subspecies.

We now have sufficient data to show that management enacted by CDPR to benefit *Trichostema austromontanum* ssp. *compactum* and its habitat at Hidden Lake has been effective and will continue to be in the foreseeable future. CDPR, as the operative land manager, has demonstrated a long-term commitment to provide for the conservation of *Trichostema austromontanum* ssp. *compactum*. Their staff, in cooperation with RSABG staff, finalized the Conservation Strategy for *Trichostema austromontanum* ssp. *compactum* (Hidden Lake bluecurls; Lamiaceae) (Fraga and Kietzer 2009, entire), which outlined immediate conservation actions, goals, and conservation measures for the recovery and long-term management of the subspecies. In subsequent years, both entities have continued to monitor the area and have developed an improved survey methodology for *T. a.* ssp. *compactum*. Because *T. a.* ssp. *compactum* is entirely within Mount San Jacinto State Park, is within the Mount San Jacinto State Wilderness Area, and is within the recently established Preserve, CDPR is able to manage Hidden Lake specifically for the conservation of *T. a.* ssp. *compactum* and its habitat, along with other sensitive resources found in the area.

Trampling by humans has been minimized, and no visible impacts to *Trichostema austromontanum* ssp. *compactum* have been observed from trampling by horses since 2000 because of CDPR's management. Therefore, we no longer consider *T. a.* ssp. *compactum* to be threatened by trampling. The low numbers of standing plants in some years appears to be a natural phenomenon for this subspecies with a soil seed bank and, therefore, is not considered a threat at this time. The *ex situ* seed banking program at RSABG also provides insurance for this subspecies by assuring propagation potential should future stochastic events or climate change adversely impact the endemic population. Actions taken by CDPR and RSABG have reduced the threats associated with trampling, small population size, and stochastic events to a manageable level.

Since listing, we have become aware of the potential for anthropogenic climate change to affect all biota, including *Trichostema austromontanum* ssp. *compactum*. While available information indicates that temperatures are increasing, there is no clear signal as to the potential impacts to *T. a.* ssp. *compactum* at this time. Additionally, the lack of a significant declining trend in the amount of precipitation suggests that there is no immediate cause for concern, but potential impacts to *T. a.* ssp. *compactum* from changes in the timing and type of precipitation should be monitored in the future.

Having considered the individual and cumulative impact of threats on this subspecies, we find that *Trichostema austromontanum* ssp. *compactum* is not in danger of extinction throughout all of its range, nor is it likely to become so in the foreseeable future.

Significant Portion of the Range Analysis

Having determined that *Trichostema austromontanum* ssp. *compactum* is not in danger of extinction, or likely to become so, throughout all of its range, we next consider whether there are any significant portions of its range in which *T. a.* ssp. *compactum* is in danger of extinction or likely to become so. Under the Act and our implementing regulations, a species may warrant listing if it is an endangered species or a threatened species. The Act defines ''endangered species'' as any species which is ''in danger of extinction throughout all or a significant portion of its range,'' and ''threatened species'' as any species which is ''likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' The term ''species'' includes ''any subspecies of fish or wildlife or plants, and any distinct population segment [DPS] of any species of vertebrate fish or wildlife which interbreeds when mature.'' On July 1, 2014, we published a final policy interpreting the phrase ''significant portion of its range'' (SPR) (79 FR 37578). The final policy states that (1) if a species is found to be endangered or threatened throughout a significant portion of its range, the entire species is listed as an endangered species or a threatened species, respectively, and the Act's protections apply to all individuals of the species wherever found; (2) a portion of the range of a species is ''significant'' if the species is not currently endangered or threatened throughout all of its range, but the portion's contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range; (3) the range of a species is considered to be the general geographical area within which that species can be found at the time the Service or the National Marine Fisheries Service makes any particular status determination; and (4) if a vertebrate species is endangered or threatened throughout an SPR, and the population in that significant portion is a valid DPS, we will list the DPS rather than the entire taxonomic species or subspecies.

The SPR policy is applied to all status determinations, including analyses for the purposes of making listing, delisting, and reclassification determinations. The procedure for analyzing whether any portion is an SPR is similar, regardless of the type of status determination we are making. The first step in our analysis of the status of a species is to determine its status throughout all of its range. If we determine that the species is in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range, we list the species as an endangered (or threatened) species and no SPR analysis will be required. If the species is neither endangered nor threatened throughout all of its range, we determine whether the species is endangered or threatened throughout a significant portion of its range. If it is, we list the species as an endangered species or a threatened species, respectively; if it is not, we conclude that the species is neither an endangered species nor a threatened species.

When we conduct an SPR analysis, we first identify any portions of the species' range that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. However, there is no purpose to analyzing portions of the range that are not reasonably likely to be significant and either endangered or threatened. To identify only those portions that warrant further consideration, we determine whether there is substantial information indicating that (1) the portions may be significant and (2) the species may be in danger of extinction in those portions or likely to become so within the foreseeable future. We emphasize that answering these questions in the affirmative is not a determination that the species is endangered or threatened throughout a significant portion of its range—rather, it is a step in determining whether a more detailed analysis of the issue is required. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are affecting it uniformly throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats apply only to portions of the range that clearly do not meet the biologically based definition of ''significant'' (*i.e.,* the loss of that portion clearly would not be expected to increase the vulnerability to extinction of the entire species), those portions will not warrant further consideration.

If we identify any portions that may be both (1) significant and (2) endangered or threatened, we engage in a more detailed analysis. As discussed above, to determine whether a portion of the range of a species is significant, we consider whether, under a hypothetical scenario, the portion's contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction or likely to become so in the foreseeable future throughout all of its range. This analysis considers the contribution of that portion to the viability of the species based on the conservation biology principles of redundancy, resiliency, and representation. (These concepts can similarly be expressed in terms of abundance, spatial distribution, productivity, and diversity.) The identification of an SPR does not create a presumption, prejudgment, or other determination as to whether the species in that identified SPR is in danger of extinction or likely to become so. We must go through a separate analysis to determine whether the species is in danger of extinction or likely to become so in the SPR. To determine whether a species is endangered or threatened throughout an SPR, we will use the same standards and methodology that we use to determine if a species is endangered or threatened throughout its range.

Depending on the biology of the species, its range, and the threats it faces, it may be more efficient to address either the significance question first, or the status question first. Thus, if we determine that a portion of the range is not ''significant,'' we do not need to determine whether the species is endangered or threatened there; if we determine that the species is not endangered or threatened in a portion of its range, we do not need to determine if that portion is ''significant.''

Trichostema austromontanum ssp. *compactum* is a narrow endemic plant subspecies, found only in and around Hidden Lake in Mount San Jacinto State Park. Its entire range is about 2 ac (1 ha) in size. Additionally, a small population (36 individuals) was once observed outside of the Hidden Lake pool area (Fraga and Wall 2007, p. 10). This location is less than 300 ft (100 m) away from Hidden Lake and is within the lake's watershed. *Trichostema austromontanum* ssp. *compactum* is an annual plant, which means it completes its life cycle in less than 1 year. As previously noted, it has a natural seed bank in the soil, with seeds that persist for extended periods of time. Although the number and distribution of standing (growing) plants varies from year to year, the distribution of the seeds in soil is likely fairly ubiquitous within the lake's perimeter. Within this 2-ac (1-ha) area, there is no natural division that would not arbitrarily separate one portion of the range from another. Even the small population that could potentially be considered geographically separate is probably not biologically separate, given that it is very close to the lake and still within the watershed for the lake. However, if we were to consider that population separate, it is small—small in numbers observed and small in area occupied—compared to the portion of the range in the area of Hidden Lake proper. As such, this portion of the range, which could potentially be considered separate, is not likely to substantially contribute to the redundancy, resiliency, and representation of the subspecies, and thus we do not consider it ''significant'' for the purposes of this SPR analysis. Additionally, because of the limited geographic area the subspecies occupies, the entire population experiences similar conditions and management by CDPR such that no portion of the subspecies' range is likely to experience a different or elevated level of threats. We conclude that there are no portions of the subspecies' range that are likely to be both significant and threatened or endangered. Therefore, no portion warrants further consideration to determine whether the subspecies is in danger of extinction or likely to become so in a significant portion of its range.

Therefore, we find that *T. a.* ssp. *compactum* no longer requires the protection of the Act, and we propose to remove the subspecies from the List of Endangered and Threatened Plants.

Effects of This Rule

The Act sets forth a series of general prohibitions and exceptions that apply to all endangered plants. The Act's implementing regulations extend most of the prohibitions provided under section 9(a)(2) of the Act to threatened plants (see 50 CFR 17.61 and 17.71). It is illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale in interstate or foreign commerce, or remove and reduce *Trichostema austromontanum* ssp. *compactum* to possession from areas under Federal jurisdiction. Section 7 of the Act requires that Federal agencies consult with us to ensure that any action authorized, funded, or carried out by them is not likely to jeopardize the species' continued existence. If this proposed rule is made final, it would

revise 50 CFR 17.12 to remove *T. a.* ssp. *compactum* from the Federal List of Endangered and Threatened Plants, and these prohibitions would no longer apply. Because critical habitat has not been designated for this taxon, this rule, if made final, would not affect 50 CFR 17.96.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (50 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that decisions are based on scientifically sound data, assumptions, and analyses. A peer review panel will conduct an assessment of the proposed rule, and the specific assumptions and conclusions regarding the proposed delisting. This assessment will be completed during the public comment period.

We will consider all comments and information we receive during the comment period on this proposed rule as we prepare the final determination. Accordingly, the final decision may differ from this proposal.

Post-delisting Monitoring

Section 4(g)(1) of the Act requires us, in cooperation with the States, to implement a system to monitor effectively, for not less than 5 years, all species that have been recovered and delisted. The purpose of this post-delisting monitoring is to verify that a species remains secure from risk of extinction after it has been removed from the protections of the Act. The monitoring is designed to detect the failure of any delisted species to sustain itself without the protective measures provided by the Act. If, at any time during the monitoring period, data indicate that protective status under the Act should be reinstated, we can initiate listing procedures, including, if appropriate, emergency listing under section 4(b)(7) of the Act. Section 4(g) of the Act explicitly requires us to cooperate with the States in development and implementation of post-delisting monitoring programs, but we remain responsible for compliance with section 4(g) of the Act and, therefore, must remain actively engaged in all phases of post-delisting monitoring. We also seek active participation of other entities that are expected to assume responsibilities for the species' conservation post-delisting.

Post-delisting Monitoring Plan Overview

We have prepared a draft PDM plan for *Trichostema austromontanum* ssp. *compactum*. The draft plan discusses the current status of the taxon and describes the methods proposed for monitoring if the taxon is removed from the Federal List of Endangered and Threatened Plants. The draft plan:

(1) Summarizes the status of *Trichostema austromontanum* ssp. *compactum* at the time of proposed delisting;

(2) Describes frequency and duration of monitoring;

(3) Discusses monitoring methods and potential sampling regimes;

(4) Defines what potential triggers will be evaluated for additional monitoring;

(5) Outlines reporting requirements and procedures; and

(6) Proposes a schedule for implementing the PDM plan and defines responsibilities.

It is our intent to work with our partners towards maintaining the recovered status of *Trichostema austromontanum* ssp. *compactum.* We will seek public and peer reviewer comments on the draft PDM plan, including its objectives and procedures (see Information Requested, above), with publication of this proposed rule.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(a) Be logically organized;

(b) Use the active voice to address readers directly;

(c) Use clear language rather than jargon;

(d) Be divided into short sections and sentences; and

(e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the names of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act

We determined that we do not need to prepare an environmental assessment or an environmental impact statement, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited in this proposed rule is available on the Internet at *http://www.regulations.gov* under Docket No. FWS–R8–ES–2016–0127, or upon request from the Field Supervisor, Carlsbad Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Author

The primary author of this proposed rule is the Carlsbad Fish and Wildlife Office in Carlsbad, California, in coordination with the Pacific Southwest Regional Office in Sacramento, California.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; 4201–4245, unless otherwise noted.

§ 17.12 [Amended]

■ 2. Amend § 17.12(h) by removing the entry for ''*Trichostema austromontanum* ssp. *compactum*'' under FLOWERING PLANTS from the List of Endangered and Threatened Plants.

Dated: December 13, 2016.

Martin J. Kodis,

Acting Director, U.S. Fish and Wildlife Service.

[FR Doc. 2016–31581 Filed 1–4–17; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 622

RIN 0648–BG29

Amendments to the Reef Fish, Spiny Lobster, and Corals and Reef Associated Plants and Invertebrates Fishery Management Plans of Puerto Rico and the U.S. Virgin Islands

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of availability; request for comments.

SUMMARY: The Caribbean Fishery Management Council (Council) has submitted Amendment 8 to the Fishery Management Plan (FMP) for the Reef Fish Fishery of Puerto Rico and the U.S. Virgin Islands (USVI) (Reef Fish FMP), Amendment 7 to the FMP for the Spiny Lobster Fishery of Puerto Rico and the USVI (Spiny Lobster FMP), and Amendment 6 to the FMP for the Corals and Reef Associated Plants and Invertebrates of Puerto Rico and the USVI (Coral FMP) for review, approval, and implementation by NMFS. In combination, these amendments represent the Accountability Measure (AM) Timing Amendment. The AM Timing Amendment would change the date for the implementation of AM-based closures for all species and species groups managed by the Council under the subject FMPs and specify that the Council must periodically revisit this implementation date. The purpose of the AM Timing Amendment is to minimize, to the extent practicable, the adverse socio-economic impacts of AM-based closures, while constraining catch levels to the applicable annual catch limit (ACL) and preventing overfishing.

DATES: Written comments must be received on or before March 6, 2017.

ADDRESSES: You may submit comments on the AM Timing Amendment, identified by ''NOAA–NMFS–2016–0013'' by either of the following methods:

- *Electronic Submission:* Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to *www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2016-0013,* click the ''Comment Now!'' icon, complete the required fields, and enter or attach your comments.
- *Mail:* Submit written comments to María del Mar López, Southeast Regional Office, NMFS, 263 13th Avenue South, St. Petersburg, FL 33701.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.,* name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous).

Electronic copies of the Timing of AM Timing Amendment, which includes an environmental assessment, a Regulatory Flexibility Act analysis, and a regulatory impact review, may be obtained from the Southeast Regional Office Web site at *http://sero.nmfs.noaa.gov/sustainable_fisheries/caribbean/index.html.*

FOR FURTHER INFORMATION CONTACT: María del Mar López, telephone: 727–824–5305, or email: *maria.lopez@noaa.gov.*

SUPPLEMENTARY INFORMATION: The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) requires each regional fishery management council to submit any FMP or FMP amendment to NMFS for review and approval, partial approval, or disapproval. The Magnuson-Stevens Act also requires that NMFS, upon receiving a plan or amendment, publish an announcement in the **Federal Register** notifying the public that the plan or amendment is available for review and comment.

The FMPs being revised by the AM Timing Amendment were prepared by the Council, and implemented by NMFS through regulations at 50 CFR part 622 under the authority of the Magnuson-Stevens Act.

Background

The current AMs in the U.S. Caribbean exclusive economic zone (EEZ) for reef fish, spiny lobster, and corals require NMFS to reduce the length of the Federal fishing season for a species or species group in the year following a determination that the landings exceeded the applicable ACL. As specified in the FMPs, the landings determination is based on the applicable 3-year landings average exceeding the respective ACL. However, if NMFS determines the ACL for a particular species or species group was exceeded because of enhanced data collection and monitoring efforts, instead of an increase in total catch, NMFS will not reduce the length of the fishing season the following fishing year. The fishing season is reduced in the year following an ACL overage determination, by the amount necessary to constrain landings to the ACL. These AM-based reductions in the length of the fishing season, for any species or species group for which the ACL has been exceeded, currently end on December 31st of the closure year and extend backward into the fishing year for the number of days necessary to achieve the required reduction in landings. The fishing year for Council-managed species in Caribbean Federal waters is the calendar year of January 1 through December 31. Fishers in the USVI and Puerto Rico have stated to the Council that implementing AM-based closures at the end of the fishing year results in negative socio-economic impacts, for example, by resulting in multiple and potentially overlapping closures during the important December holiday season.

Actions Contained in the AM Timing Amendment

The AM Timing Amendment would modify the implementation date for AM-based closures for species managed under the Reef Fish, Coral, and Spiny Lobster FMPs, and specify that the Council must periodically revisit this implementation date. The Council's goal for the actions considered in this amendment is, to the extent practicable, to minimize the adverse socio-economic impacts of AM-based closures, while still constraining catch levels to the applicable ACLs and preventing overfishing, as required by the Magnuson-Stevens Act. The FMP for the Queen Conch Resources of Puerto Rico and the U.S. Virgin Islands is not included in the AM Timing Amendment because queen conch are managed with an in-season closure when the ACL is reached or projected to be reached, rather than a post-season reduction in the fishing year.

Modification of the Date for the Implementation of AM-Based Closures

The AM Timing Amendment would modify the date for the implementation of an AM-based closure in the year following an ACL overage determination for a species or species group managed by the Council in Federal waters off Puerto Rico, St. Thomas/St. John, and St. Croix, under the Reef Fish, Coral, and Spiny Lobster FMPs. Specifically, instead of the current end date of December 31 for AM-based closures, AM-based closures would be

implemented using an end date of September 30 of the closure year, and extend backward toward the beginning of the Federal fishing year (January 1), for the number of days necessary to achieve the required reduction in landings. If the length of the required fishing season reduction exceeds the period of January 1 through September 30, any additional fishing season reduction would be applied from October 1 forward, toward the end of the fishing year (December 31). The proposed AM-based closure end date of September 30 would increase the likelihood that any AM-based closures would occur during a time of the year when the socio-economic impacts to fishers are expected to be less severe. Modifying the date for the implementation of AM-based closures would not change the level of harvest reduction in the event that an AM-based closure is required. The Council determined that an AM-based closure implementation date of September 30 going backward toward the beginning of the year, applicable to all species or species groups across all island management areas, except for queen conch, would minimize, to the extent practicable, negative socio-economic effects from the implementation of AMs while constraining harvest to the applicable ACL and preventing overfishing. This approach to the timing for AM-based closures has been identified by Caribbean fishers as desirable, because it avoids periods of high demand for fish so they do not risk losing markets, and thus is expected to minimize adverse socio-economic effects from the implementation of AMs.

Specification of a Time Period for Revisiting the Approach Selected To Establish AM-Based Closures

The AM Timing Amendment would also ensure the Council revisit, and possibly revise, using September 30 as the end date for AM-based closures, no longer than 2 years from the implementation of the AM Timing Amendment and every 2 years thereafter. This is expected to result in positive social and economic management effects from the ability to change the method of applying AM-based closures based on new information.

A proposed rule that would implement the measures outlined in the AM Timing Amendment has been drafted. In accordance with the Magnuson-Stevens Act, NMFS is evaluating the proposed rule to determine whether it is consistent with the FMPs, the Magnuson-Stevens Act, and other applicable law. If that determination is affirmative, NMFS will publish the proposed rule in the **Federal Register** for public review and comment.

Consideration of Public Comments

The Council has submitted the AM Timing Amendment for Secretarial review, approval, and implementation. Comments on the AM Timing Amendment must be received by March 6, 2017. Comments received during the respective comment periods, whether specifically directed to the amendment or the proposed rule, will be considered by NMFS in its decision to approve, disapprove, or partially approve the AM Timing Amendment. All comments received by NMFS on the amendment or the proposed rule during their respective comment periods will be addressed in the final rule.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: December 29, 2016.

Alan D. Risenhoover,

Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2016–31927 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–22–P

Notices

Federal Register

Vol. 82, No. 3

Thursday, January 5, 2017

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Food Safety and Inspection Service

[Docket No. FSIS–2016–0033]

Notice of Request for a New Information Collection: State Meat and Poultry Inspection Programs

AGENCY: Food Safety and Inspection Service, USDA.

ACTION: Notice and request for comments.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 and Office of Management and Budget (OMB) regulations, the Food Safety and Inspection Service (FSIS) is announcing its intention to collect information from federally-assisted State Meat and Poultry Inspection programs to ensure that their programs operate in a manner that is at least equal to FSIS's Federal inspection program in the protection of public interest; comply with requirements of Federal Civil Rights laws and regulations; meet necessary laboratory quality assurance standards and testing frequencies; and have the capability to perform microbiology and food chemistry methods that are ''at least equal to'' methods performed in the FSIS laboratories.

DATES: Submit comments on or before March 6, 2017.

ADDRESSES: FSIS invites interested persons to submit comments on this information collection. Comments may be submitted by one of the following methods:

- *Federal eRulemaking Portal:* This Web site provides the ability to type short comments directly into the comment field on this Web page or attach a file for lengthier comments. Go to *http://www.regulations.gov.* Follow the on-line instructions at that site for submitting comments.
- *Mail, including CD–ROMs, etc.:* Send to Docket Clerk, U.S. Department of Agriculture, Food Safety and Inspection Service, Docket Clerk, Patriots Plaza 3, 1400 Independence Avenue SW., Mailstop 3782, Room 8–163A, Washington, DC 20250–3700.
- *Hand- or courier-delivered submittals:* Deliver to Patriots Plaza 3, 355 E Street SW., Room 8–163A, Washington, DC 20250–3700.

Instructions: All items submitted by mail or electronic mail must include the Agency name and docket number FSIS–2016–0033. Comments received in response to this docket will be made available for public inspection and posted without change, including any personal information, to *http://www.regulations.gov.*

Docket: For access to background documents or comments received, go to the FSIS Docket Room at Patriots Plaza 3, 355 E Street SW., Room 8–164, Washington, DC 20250–3700 between 8:00 a.m. and 4:30 p.m., Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Gina Kouba, Office of Policy and Program Development, Food Safety and Inspection Service, USDA, 1400 Independence Avenue SW., Room 6065, South Building, Washington, DC 20250–3700; (202) 720–5627.

SUPPLEMENTARY INFORMATION:

Title: State Meat and Poultry Inspection Programs.

Type of Request: New information collection.

Abstract: FSIS has statutory authority under the Federal Meat Inspection Act (FMIA) (21 U.S.C. 601, *et seq.*), and the Poultry Products Inspection Act (PPIA) (21 U.S.C. 451, *et seq.*), to set national standards for meat and poultry inspection (MPI). Section 301(c) of the FMIA (21 U.S.C. 661(c)) and section 5(c) of the PPIA (21 U.S.C. 454(c)) authorize the Secretary of Agriculture (Secretary) to designate a State as one in which the provisions of Titles I and IV of the FMIA and sections 1–4, 6–11, and 12–22 of the PPIA will apply to operations and transactions wholly within the State after the Secretary has determined that requirements at least ''equal to'' those imposed under the Acts have not been developed and effectively enforced by the State. Under a cooperative agreement with FSIS, states may operate their own MPI programs (*i.e.* meat, poultry, or both; egg products are excluded) provided they meet and enforce requirements ''at least equal to'' those imposed under the FMIA and PPIA. FSIS is responsible for certifying and monitoring that participating states meet the MPI program's ''at least equal to'' standard.

Twenty-seven (27) states have MPI programs that operate under a cooperative agreement with FSIS and are subject to the comprehensive state review process. Comprehensive reviews of State MPI programs are conducted by an interdisciplinary team of FSIS Auditors from the Office of Investigation, Enforcement and Audit (OIEA), the Financial Management Division (FMD), the Civil Rights Staff (CRS), and the Office of Public Health Science Laboratory Quality Assurance Staff (LQAS). There are nine review components that make up the comprehensive state review process. The components are as follows: Component 1—Statutory Authority and Food Safety Regulations; Component 2—Inspection; Component 3—Sampling Programs; Component 4—Staffing, Training, and Supervision; Component 5—Humane Handling; Component 6—Compliance; Component 7—Laboratory Quality Assurance Program and Methods; Component 8—Civil Rights; and Component 9—Financial Accountability.

For each of the first six (1–6) components, State MPI programs will submit annual self-assessment documentation to FSIS to demonstrate that the State MPI program is meeting the ''at least equal to'' Federal inspection requirements. Each component of the annual self-assessment will include a written narrative statement and documentation demonstrating that the program continuously meets the criteria to be ''at least equal to'' the Federal inspection program. State MPI programs will also submit sufficient documentation to demonstrate that the program either follows current FSIS statutes, regulations, applicable FSIS Directives and Notices, and has implemented any changes necessary to maintain the ''at least equal to'' status or the State MPI program has an effective, analogous program that would also be ''at least equal to''. All State MPI programs will need to demonstrate they operate in a manner that protects the health and welfare of consumers by ensuring that the meat and poultry products distributed by the establishments in the

program are wholesome, not adulterated, and properly marked, labeled, and packaged.

The annual self-assessment submission will also include one or more narratives describing the internal controls used by the State MPI program that: (1) Provide assurances and can measure the effectiveness of the program under the ''at least equal to'' criteria; (2) demonstrate how non-conformances will be addressed by corrective actions; and (3) demonstrate how the State MPI program will be maintained throughout the next 12 months.

For Component 7 of the comprehensive State review process, States will submit documentation of their laboratory quality assurance programs and methods. States will document their laboratory quality assurance program activities on the FSIS Form 5720–14, State Meat and Poultry Inspection Program Laboratory Quality Management System Checklist. States will submit copies of new or revised laboratory analytical methods accompanied by a FSIS Form 5720–15, Laboratory Method Notification Form.

For Component 8 of the comprehensive State review process, States will submit documentation of their Civil Rights compliance. States receive FSIS monies to operate their MPI programs, and as such, are subject to the nondiscrimination provisions of Title VI, Title IX, Section 504 of the Rehabilitation Act of 1973 and the Age Discrimination Act of 1975. In order to assess the 27 states' compliance with these provisions, FSIS plans to annually request information on the States' Civil Rights programs and controls in FSIS Form 1520.1—Civil Rights Compliance of State Inspection Programs. This form requests information regarding nine areas of Civil Rights compliance, which include: (1) Civil Rights Assurances; (2) State Infrastructure and Program Accountability; (3) Public Notification; (4) Racial and Ethnic Data Collection; (5) Civil Rights Complaints of Discrimination; (6) Civil Rights Training; (7) Disability Compliance, (8) Limited English Proficiency; and (9) Compliance with the Age Discrimination Act of 1975. The form allows States to: (1) Document management controls they have implemented and maintained with regard to these nine categories; and (2) document how their overall Civil Rights program constitutes a Civil Rights program ''at least equal to'' the FSIS Federal program.

FSIS plans to request documentation from all components of the self-assessment and completion of these forms annually. Submission of the completed forms will be due by November 1 each year to the Coordinators from OIEA, FMD, CRS and LQAS. In each submission, states will respond to all questions and report on programs and activities implemented and maintained during the prior fiscal year (October 1 through September 30).

In addition to the annual self-assessment submission, State MPI programs will be subject to an on-site review at a minimum frequency of once every three years to verify the accuracy and implementation of the self-assessment submissions. In the year that a State MPI program is scheduled for an on-site review, FSIS will closely examine records from the State MPI program in order to make an annual determination that the program is or is not ''at least equal to'' the Federal inspection program.

Additionally, FSIS Form 5720–15, Laboratory Method Notification Form shall be submitted whenever a State lab revises or adds a new method for MPI program testing. FSIS has made the following estimates on the basis of an information collection assessment.

Estimate of Burden: FSIS estimates that it will take each respondent an average of 255 hours to complete the forms and narratives.

Respondents: State MPI Directors, Program Managers, and/or Human Resources Officials

Estimated No. of Respondents: 27 respondents.

Estimated No. of Annual Responses per Respondent: 1.

Estimated Total Annual Burden on Respondents: 6,887 hours.

Copies of this information collection assessment can be obtained from Gina Kouba, Office of Policy and Program Development, Food Safety and Inspection Service, USDA, 1400 Independence SW., Room 6077, South Building, Washington, DC 20250, (202) 690–6510.

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of FSIS's functions, including whether the information will have practical utility; (b) the accuracy of FSIS's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques, or other forms of information technology. Comments may be sent to both FSIS, at the addresses provided above, and the Desk Officer for Agriculture, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20253.

Responses to this notice will be summarized and included in the request for OMB approval. All comments will also become a matter of public record.

Additional Public Notification

Public awareness of all segments of rulemaking and policy development is important. Consequently, FSIS will announce this **Federal Register** publication on-line through the FSIS Web page located at: *http://www.fsis.usda.gov/federal-register.*

FSIS also will make copies of this publication available through the FSIS Constituent Update, which is used to provide information regarding FSIS policies, procedures, regulations, **Federal Register** notices, FSIS public meetings, and other types of information that could affect or would be of interest to our constituents and stakeholders. The Update is available on the FSIS Web page. Through the Web page, FSIS is able to provide information to a much broader, more diverse audience. In addition, FSIS offers an email subscription service which provides automatic and customized access to selected food safety news and information. This service is available at: *http://www.fsis.usda.gov/subscribe.* Options range from recalls to export information, regulations, directives, and notices. Customers can add or delete subscriptions themselves, and have the option to password protect their accounts.

USDA Non-Discrimination Statement

No agency, officer, or employee of the USDA shall, on the grounds of race, color, national origin, religion, sex, gender identity, sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, or political beliefs, exclude from participation in, deny the benefits of, or subject to discrimination any person in the United States under any program or activity conducted by the USDA.

How To File a Complaint of Discrimination

To file a complaint of discrimination, complete the USDA Program Discrimination Complaint Form, which may be accessed online at *http://www.ocio.usda.gov/sites/default/files/docs/2012/Complain_combined_6_8_12.pdf,* or write a letter signed by you

or your authorized representative.

Send your completed complaint form or letter to USDA by mail, fax, or email:

Mail: U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue SW., Washington, DC 20250–9410, Fax: (202) 690–7442, Email: *program.intake@usda.gov*.

Persons with disabilities who require alternative means for communication (Braille, large print, audiotape, etc.), should contact USDA's TARGET Center at (202) 720–2600 (voice and TDD).

Done at Washington, DC on: December 29, 2016.

Alfred V. Almanza,

Acting Administrator.

[FR Doc. 2016–31930 Filed 1–4–17; 8:45 am]

BILLING CODE 3410–DM–P

DEPARTMENT OF AGRICULTURE

Food and Nutrition Service

Agency Information Collection Activities: Proposed Collection; Comments Request—Evaluation of the School Meal Data Collection Process

AGENCY: Food and Nutrition Service (FNS), USDA.

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, this notice invites the general public and other public agencies to comment on this proposed information collection. This collection is a new collection. The primary purpose of this study is to provide FNS with a description and evaluation of the methodologies and processes used to collect and report program data via the FNS–10, FNS–742, and FNS–834 forms.

DATES: Written comments must be received on or before March 6, 2017.

ADDRESSES: Comments may be sent to: Jinee Burdg, MPP, RDN, LDN, Food and Nutrition Service, U.S. Department of Agriculture, 3101 Park Center Drive, Alexandria, VA 22302. Comments may also be submitted via fax to the attention of Jinee Burdg at 703–305–2744 or via email to *Jinee.Burdg@fns.usda.gov.* Comments will also be accepted through the Federal eRulemaking Portal. Go to *http://www.regulations.gov,* and follow the online instructions for submitting comments electronically.

All written comments will be open for public inspection at the office of the Food and Nutrition Service during regular business hours (8:30 a.m. to 5 p.m. Monday through Friday) at 3101 Park Center Drive, Alexandria, Virginia 22302.

All responses to this notice will be summarized and included in the request for Office of Management and Budget approval. All comments will be a matter of public record.

FOR FURTHER INFORMATION CONTACT: Requests for additional information or copies of this information collection should be directed to Jinee Burdg at 703–305–2744.

SUPPLEMENTARY INFORMATION: Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions that were used; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on those who are to respond, including use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

Title: Evaluation of the School Meal Data Collection Process.

Form Number: Not applicable.

OMB Number: Not yet Assigned.

Expiration Date: Not yet Determined.

Type of Request: New collection.

Abstract

USDA's Food and Nutrition Service (FNS) administers the National School Lunch Program (NSLP) and School Breakfast Program (SBP) at the Federal level. At the State level, State agencies, typically State Departments of Education or Agriculture, operate the program through agreements with Local Education Agencies (LEAs). Federal law, regulations, and policies determine eligibility for meal benefits. Based on federal regulations at 7 CFR part 210, LEAs have the legal authority to operate the NSLP and SBP as well as to certify and verify student eligibility for free and reduced-price meal benefits. Section 9 of the Richard B. Russell National School Lunch Act (42 U.S.C. 1758) and regulations at 7 CFR part 245 provide the requirements related to determining free and reduced-price meal eligibility including certification and verification requirements and procedures.

FNS administers and provides directives for these school meal programs but most of the reporting and data collection originates at schools or sites, flows up to school food authorities (SFAs), then to State agencies, and ultimately to FNS. Some of the key forms FNS uses to collect data on the NSLP and SBP are the *FNS–10, Report of School Operations;* the *FNS–742, SFA Verification Collection Report;* and the *FNS–834, State Agency Direct Certification Rate Data Element Report.*

FNS is conducting a study, the *Evaluation of the School Meal Data Collection Process,* to provide a description and evaluation of the methodologies and processes used to collect and report program data for the school meal programs via the FNS–10, FNS–742, and FNS–834 forms. The key research objectives relate to assessing how schools/sites, SFAs, and State agencies handle the following three functions: Collect/aggregate data, process or validate data, and transmit data about the school meal programs. The ultimate objective is to understand the likely sources of error within each of these functions at each reporting level.

The study approach includes analysis of administrative data and site visits to conduct case studies. Using on-site interviews and observations in 4 States, 40 SFAs and 120 schools that are selected purposively, the study will describe and assess the data collection/aggregation, validation, and transmittal processes used to complete the FNS–10, FNS–742, and FNS–834, and to describe the likely sources of error for each of these processes—from schools/sites, to SFAs, to States, and ultimately delivery to FNS regional offices via the FNS Food Program Reporting System (FPRS).

Affected Public: State, Local or Tribal government (20 respondents and 0 non-respondents); and Business-for-profit/not-for-profit (167; 160 respondents and 7 non-respondents).There are approximately 7 non-respondents who will be contacted but choose not to participate. The burden for all respondents is broken down in the table below.

Type of Respondents: State Child Nutrition (CN) Agency Directors and key staff; State Supplemental Nutrition Assistance Program (SNAP) Agency Directors; SFA Directors and School Cafeteria Managers.

Estimated Number of Respondents: The total estimated number of respondents is 187. This includes: 4 State Child Nutrition Agency Directors, 12 Child Nutrition Agency key staff involved in reporting, 4 State SNAP Directors, 40 SFA Directors, 120 School Cafeteria Managers, and 7 non-respondents.

Estimated Frequency of Response: The estimated frequency of response is

3.36 annually for respondents and 2.00 annually for non-respondents. Including respondents and non-respondents, the overall frequency for the entire collection is 3.30 annually.

Estimated Total Annual Responses: The total estimated number of responses for data collection is 618. This includes 604 for respondents and 14 for non-respondents.

Estimated Time per Respondent: The estimated time of response varies from 10 minutes to 1 hour and 30 minutes, depending on the respondent group. The recruitment (electronic study notification letter) for each respondent type will take 10 minutes (0.167 hours) and scheduling interviews for each respondent type will also take 10 minutes (0.167 hours). The in-depth interview for State SNAP Agency Directors, State Child Nutrition Directors and State Child Nutrition key staff will take 60 minutes (1.00 hours). The in-depth interview for SFA Directors and School Cafeteria Managers will take 90 minutes (1.5 hours). In-depth interview follow up will take 10 minutes (0.167 hours) among State Child Nutrition Directors, State Child Nutrition key staff, State SNAP Agency Directors and School Food Authority Directors. The average estimated time across all respondents is 0.54.

Estimated Total Annual Burden on Respondents: The total public reporting burden for this collection of information is estimated at 333.1 hours (annually). The estimated burden for each type of respondent is provided in the table below.

Respondent Type	Respondent Description	Type of Survey Instrument	Sample size (a)	Number of Respondents	Frequency of Response (annual)	Total Annual Responses	Average Hours per Response	Sub- Annual Burden	Number of non - respondents	Frequency of Response (annual)	Total Annual Responses	Average Hours per response	Sub-Total Annual Burden	Total Burden Hours
State Child Nutrition Agency	State Director	Electronic Study Notification Letter	4	4	1	4	0.167	0.7	0	0	0	0.000	0.0	0.7
		Scheduling the Pre-visit Interview	4	4	1	4	0.167	0.7	0	0	0	0.000	0.0	0.7
		Scheduling On-site In-depth Interview	4	4	1	4	0.167	0.7	0	0	0	0.000	0.0	0.7
		State Child Nutrition Agency Director In-depth Interview	4	4	1	4	1.000	4.0	0	0	0	0.000	0.0	4.0
		State Child Nutrition Agency Director In-depth Interview Follow Up	4	4	1	4	0.167	0.7	0	0	0	0.000	0.0	0.7
	Key Staff	Electronic Study Notification Letter	12	12	1	12	0.167	2.0	0	0	0	0.000	0.0	2.0
		Scheduling the On-site In-depth Interview	12	12	1	12	0.167	2.0	0	0	0	0.000	0.0	2.0
		State Child Nutrition Agency Key Staff In-depth Interview	12	12	1	12	1.000	12.0	0	0	0	0.000	0.0	12.0
		State Child Nutrition Agency Key Staff In-depth Interview Follow-Up	12	12	1	12	0.167	2.0	0	0	0	0.000	0.0	2.0
State Supplemental Nutrition Assistance Program (SNAP) Agency	State Director	Electronic Study Notification Letter	4	4	1	4	0.167	0.7	0	0	0	0.000	0.0	0.7
		Scheduling the On-site In-depth Interview	4	4	1	4	0.167	0.7	0	0	0	0.000	0.0	0.7
		State SNAP Agency Director In-depth Interview	4	4	1	4	1.000	4.0	0	0	0	0.000	0.0	4.0
		State SNAP Agency Director In-depth Interview Follow-Up	4	4	1	4	0.167	0.7	0	0	0	0.000	0.0	0.7
State/Local Government Subtotal			**20**	**20**	**4.20**	**84**	**0.365**	**30.7**	**0**	**0.00**	**0**	**0.000**	**0**	**30.7**
School Food Authority	SFA Director	Electronic Study Notification Letter	47	40	1	40	0.167	6.7	7	1	7	0.167	1.2	7.9
		Scheduling the On-site In-depth Interview	47	40	1	40	0.167	6.7	7	1	7	0.167	1.2	7.9
		School Food Authority Director In-depth Interview (includes consent)	40	40	1	40	1.500	60.0	0	0	0	0.000	0.0	60.0
		School Food Authority Director In-depth Interview Follow-Up	40	40	1	40	0.167	6.7	0	0	0	0.000	0.0	6.7
School	Cafeteria Manager	Electronic Study Notification Letter	120	120	1	120	0.167	20.0	0	0	0	0.000	0.0	20.0
		Scheduling the On-site In-depth Interview	120	120	1	120	0.167	20.0	0	0	0	0.000	0.0	20.0
		School Cafeteria Manager In-depth Interview (includes consent)	120	120	1	120	1.500	180.0	0	0	0	0.000	0.0	180.0
Profit/Non-Profit Business Subtotal			**167**	**160**	**3.25**	**520**	**0.557**	**300.0**	**7**	**2.00**	**14**	**0.171**	**2.4**	**302.4**
GRAND TOTAL			**187**	**180**	**3.36**	**604**	**0.547**	**330.7**	**7**	**2.00**	**14**	**0.171**	**2.4**	**333.1**

Dated: December 23, 2016.

Richard Lucas,

Acting Administrator, Food and Nutrition Service.

[FR Doc. 2016–31953 Filed 1–4–17; 8:45 am]

BILLING CODE 3410–30–P

COMMISSION ON CIVIL RIGHTS

Notice of Public Meeting of the Kansas Advisory Committee To Discuss the Committee's Draft Report Regarding Voting Rights in the State, as Well as Other Civil Rights Issues for Future Inquiry

AGENCY: U.S. Commission on Civil Rights

ACTION: Announcement of meeting.

SUMMARY: Notice is hereby given, pursuant to the provisions of the rules and regulations of the U.S. Commission on Civil Rights (Commission) and the Federal Advisory Committee Act that the Kansas Advisory Committee (Committee) will hold a meeting on Friday, January 20, 2017, at 2:00 p.m. CST. The meeting will include a discussion of a draft report on voting rights in the state, and a discussion of other current civil rights concerns in Kansas for future study.

DATES: The meeting will take place on Friday, January 20, 2017, at 2:00 p.m. CST.

ADDRESSES: Public call information: Dial: 888–715–1402, Conference ID: 1650782.

FOR FURTHER INFORMATION CONTACT: Melissa Wojnaroski, DFO, at *mwojnaroski@usccr.gov* or 312–353–8311.

SUPPLEMENTARY INFORMATION: Members of the public can listen to the discussion. This meeting is available to the public through the following toll-free call-in number: 888–715–1402, conference ID: 1650782. Any interested member of the public may call this number and listen to the meeting. An open comment period will be provided to allow members of the public to make a statement as time allows. The conference call operator will ask callers to identify themselves, the organization they are affiliated with (if any), and an email address prior to placing callers into the conference room. Callers can expect to incur regular charges for calls they initiate over wireless lines, according to their wireless plan. The Commission will not refund any incurred charges. Callers will incur no charge for calls they initiate over land-line connections to the toll-free telephone number. Persons with hearing impairments may also follow the proceedings by first calling the Federal Relay Service at 1–800–977–8339 and providing the Service with the conference call number and conference ID number.

Members of the public are also entitled to submit written comments; the comments must be received in the regional office within 30 days following the meeting. Written comments may be mailed to the Regional Programs Unit, U.S. Commission on Civil Rights, 55 W. Monroe St., Suite 410, Chicago, IL 60615. They may also be faxed to the Commission at (312) 353–8324, or emailed to Corrine Sanders at *csanders@usccr.gov.* Persons who desire additional information may contact the Regional Programs Unit at (312) 353–8311.

Records generated from this meeting may be inspected and reproduced at the Regional Programs Unit Office, as they become available, both before and after the meeting. Records of the meeting will be available via *www.facadatabase.gov* under the Commission on Civil Rights, Kansas Advisory Committee link (*http://www.facadatabase.gov/committee/meetings.aspx?cid=249*). Persons interested in the work of this Committee are directed to the Commission's Web site, *http://www.usccr.gov,* or may contact the Regional Programs Unit at the above email or street address.

Agenda

Welcome and Roll Call
Discussion of Committee Report: Voting Rights in Kansas
Civil Rights in Kansas: 2017 Project Concepts
Future Plans and Actions
Public Comment
Adjournment

Dated: December 29, 2016.

David Mussatt,

Supervisory Chief, Regional Programs Unit.

[FR Doc. 2016–31926 Filed 1–4–17; 8:45 am]

BILLING CODE P

COMMISSION ON CIVIL RIGHTS

Notice of Public Meeting of the Ohio Advisory Committee for a Meeting To Discuss Approval and Publication of a Report Regarding Civil Rights and Hate Crime in the State, and To Begin Discussion of the Committee's Next Topic of Civil Rights Study

AGENCY: U.S. Commission on Civil Rights.

ACTION: Announcement of meeting.

SUMMARY: Notice is hereby given, pursuant to the provisions of the rules and regulations of the U.S. Commission on Civil Rights (Commission) and the Federal Advisory Committee Act that the Ohio Advisory Committee (Committee) will hold a meeting on Thursday, January 19, 2017, at 4:00 p.m. EST for the purpose of discussing a draft report regarding civil rights and human trafficking in the state. The Committee will also begin preparation for their next topic of civil rights study.

DATES: The meeting will be held on Thursday, January 19, 2017, at 4:00 p.m. EST

Public Call Information: Dial: 888–609–5673, Conference ID: 8833502

FOR FURTHER INFORMATION CONTACT: Melissa Wojnaroski, DFO, at *mwojnaroski@usccr.gov* or 312–353–8311

SUPPLEMENTARY INFORMATION: Members of the public can listen to the discussion. This meeting is available to the public through the following toll-free call-in number: 888–609–5673, conference ID: 8833502. Any interested member of the public may call this number and listen to the meeting. An open comment period will be provided to allow members of the public to make a statement as time allows. The conference call operator will ask callers to identify themselves, the organization they are affiliated with (if any), and an email address prior to placing callers into the conference room. Callers can expect to incur regular charges for calls they initiate over wireless lines, according to their wireless plan. The Commission will not refund any incurred charges. Callers will incur no charge for calls they initiate over land-line connections to the toll-free telephone number. Persons with hearing impairments may also follow the proceedings by first calling the Federal Relay Service at 1–800–977–8339 and providing the Service with the conference call number and conference ID number.

Members of the public are also entitled to submit written comments; the comments must be received in the regional office within 30 days following the meeting. Written comments may be mailed to the Midwestern Regional Office, U.S. Commission on Civil Rights, 55 W. Monroe St., Suite 410, Chicago, IL 60615. They may also be faxed to the Commission at (312) 353–8324, or emailed to Carolyn Allen at *callen@usccr.gov.* Persons who desire additional information may contact the Midwestern Regional Office at (312) 353–8311.

Records generated from this meeting may be inspected and reproduced at the Midwestern Regional Office, as they

become available, both before and after the meeting. Records of the meeting will be available via *www.facadatabase.gov* under the Commission on Civil Rights, Ohio Advisory Committee link (*http://www.facadatabase.gov/committee/meetings.aspx?cid=268*). Select ''meeting details'' and ''documents'' to download. Persons interested in the work of this Committee are directed to the Commission's Web site, *http://www.usccr.gov,* or may contact the Midwestern Regional Office at the above email or street address.

Agenda

Welcome and Introductions
Discussion of Draft Report: ''Human Trafficking in Ohio''
Project Preparation: ''Barriers to Equal Access to Education in Ohio''
Public Comment
Future Plans and Actions
Adjournment

Dated: December 29, 2016.

David Mussatt,

Supervisory Chief, Regional Programs Unit.

[FR Doc. 2016–31925 Filed 1–4–17; 8:45 am]

BILLING CODE P

COMMISSION ON CIVIL RIGHTS

Notice of Public Meeting of the Illinois Advisory Committee for a Meeting To Discuss Preparations for a Public Hearing on Civil Rights and Voter Participation in the State

AGENCY: U.S. Commission on Civil Rights.

ACTION: Announcement of meeting.

SUMMARY: Notice is hereby given, pursuant to the provisions of the rules and regulations of the U.S. Commission on Civil Rights (Commission) and the Federal Advisory Committee Act that the Illinois Advisory Committee (Committee) will hold a meeting on Friday, January 20, 2017, at 12:00 p.m. CST for the purpose of discussing preparations to host a public hearing on civil rights and voter participation in the state.

DATES: The meeting will be held on Friday, January 20, 2017, at 12:00 p.m. CST.

ADDRESSES: Public call information: Dial: 888–778–9064, Conference ID: 6775488.

FOR FURTHER INFORMATION CONTACT: Melissa Wojnaroski, DFO, at *mwojnaroski@usccr.gov* or 312–353–8311.

SUPPLEMENTARY INFORMATION: Members of the public can listen to the discussion. This meeting is available to the public through the following toll-free call-in number: 888–778–9064, conference ID: 6775488. Any interested member of the public may call this number and listen to the meeting. An open comment period will be provided to allow members of the public to make a statement as time allows. The conference call operator will ask callers to identify themselves, the organization they are affiliated with (if any), and an email address prior to placing callers into the conference room. Callers can expect to incur regular charges for calls they initiate over wireless lines, according to their wireless plan. The Commission will not refund any incurred charges. Callers will incur no charge for calls they initiate over land-line connections to the toll-free telephone number. Persons with hearing impairments may also follow the proceedings by first calling the Federal Relay Service at 1–800–977–8339 and providing the Service with the conference call number and conference ID number.

Members of the public are also entitled to submit written comments; the comments must be received in the regional office within 30 days following the meeting. Written comments may be mailed to the Midwestern Regional Office, U.S. Commission on Civil Rights, 55 W. Monroe St., Suite 410, Chicago, IL 60615. They may also be faxed to the Commission at (312) 353–8324, or emailed to Carolyn Allen at *callen@usccr.gov.* Persons who desire additional information may contact the Midwestern Regional Office at (312) 353–8311.

Records generated from this meeting may be inspected and reproduced at the Midwestern Regional Office, as they become available, both before and after the meeting. Records of the meeting will be available via *www.facadatabase.gov* under the Commission on Civil Rights, Illinois Advisory Committee link (*http://www.facadatabase.gov/committee/meetings.aspx?cid=246*). Select ''meeting details'' and then ''documents'' to download. Persons interested in the work of this Committee are directed to the Commission's Web site, *http://www.usccr.gov,* or may contact the Midwestern Regional Office at the above email or street address.

Agenda

Welcome and Roll Call
Discussion of Project Preparation: Voting Rights in Illinois
Public Comment
Future Plans and Actions
Adjournment

Dated: December 29, 2016.

David Mussatt,

Supervisory Chief, Regional Programs Unit.

[FR Doc. 2016–31924 Filed 1–4–17; 8:45 am]

BILLING CODE P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[B–60–2016]

Foreign-Trade Zone (FTZ) 7—Mayaguez, Puerto Rico Authorization of Production Activity MSD International GMBH (Puerto Rico Branch) LLC Subzone 7G (Pharmaceuticals) Las Piedras, Puerto Rico

On August 29, 2016, MSD International GMBH (Puerto Rico Branch) LLC (MSD), operator of Subzone 7G, submitted a notification of proposed production activity to the Foreign-Trade Zones (FTZ) Board for its facility within Subzone 7G, in Las Piedras, Puerto Rico.

The notification was processed in accordance with the regulations of the FTZ Board (15 CFR part 400), including notice in the **Federal Register** inviting public comment (81 FR 64131, September 19, 2016). The FTZ Board has determined that no further review of the activity is warranted at this time. The production activity described in the notification is authorized, subject to the FTZ Act and the Board's regulations, including Section 400.14.

Dated: December 27, 2016.

Diane Finver,

Acting Executive Secretary.

[FR Doc. 2016–32035 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[B–58–2016]

Foreign-Trade Zone (FTZ) 46—Cincinnati, Ohio; Authorization of Production Activity; Givaudan Flavors Corporation (Flavor Products); Cincinnati, Ohio

On August 25, 2016, Givaudan Flavors Corporation submitted a notification of proposed production activity to the Foreign-Trade Zones (FTZ) Board for its facility within Subzone 46G, in Cincinnati, Ohio.

The notification was processed in accordance with the regulations of the FTZ Board (15 CFR part 400), including notice in the **Federal Register** inviting

public comment (81 FR 63469, September 15, 2016). The FTZ Board has determined that no further review of the activity is warranted at this time. The production activity described in the notification is authorized, subject to the FTZ Act and the Board's regulations, including Section 400.14.

Dated: December 22, 2016.

Andrew McGilvray,

Executive Secretary.

[FR Doc. 2016–32033 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[B–87–2016]

Foreign-Trade Zone (FTZ) 87—Lake Charles, Louisiana; Notification of Proposed Production Activity; Westlake Chemical Corporation; Subzone 87F (Polyethylene and Styrene); Sulphur, Louisiana

Westlake Chemical Corporation (Westlake) submitted a notification of proposed production activity to the FTZ Board for its facilities within Subzone 87F in Sulphur, Louisiana. The notification conforming to the requirements of the regulations of the FTZ Board (15 CFR 400.22) was received on December 16, 2016.

The Westlake facilities are used for the production of petrochemicals, including polyethylene and styrene. Pursuant to 15 CFR 400.14(b), FTZ activity would be limited to the specific foreign-status materials and components and specific finished products described in the submitted notification (as described below) and subsequently authorized by the FTZ Board.

Production under FTZ procedures could exempt Westlake from customs duty payments on the foreign-status components used in export production. On its domestic sales, Westlake would be able to choose the duty rates during customs entry procedures that apply to low density polyethylene, linear low density polyethylene and styrene (duty rates range from free to 6.5%) for the foreign-status inputs noted below. Customs duties also could possibly be deferred or reduced on foreign-status production equipment.

The components and materials sourced from abroad include 1-hexene, benzene, and BHEB-(2,6-Di-t-butyl-4-ethyl phenol) (duty rates range from free to 5.5%).

Public comment is invited from interested parties. Submissions shall be addressed to the FTZ Board's Executive Secretary at the address below. The closing period for their receipt is February 14, 2017.

A copy of the notification will be available for public inspection at the Office of the Executive Secretary, Foreign-Trade Zones Board, Room 21013, U.S. Department of Commerce, 1401 Constitution Avenue NW., Washington, DC 20230–0002, and in the ''Reading Room'' section of the FTZ Board's Web site, which is accessible via *www.trade.gov/ftz.*

For further information, contact Diane Finver at *Diane.Finver@trade.gov* or (202) 482–1367.

Dated: December 28, 2016.

Elizabeth Whiteman,

Acting Executive Secretary.

[FR Doc. 2016–32028 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[B–57–2016]

Foreign-Trade Zone (FTZ) 92—Harrison County, Mississippi; Authorization of Production Activity; TopShip, LLC (Shipbuilding); Gulfport, Mississippi

On August 30, 2016, the Mississippi Coast Foreign-Trade Zone, Inc., grantee of FTZ 92, submitted a notification of proposed production activity to the FTZ Board on behalf of TopShip, LLC, within FTZ 92, in Gulfport, Mississippi.

The notification was processed in accordance with the regulations of the FTZ Board (15 CFR part 400), including notice in the **Federal Register** inviting public comment (81 FR 62078–62079, September 8, 2016). The FTZ Board has determined that no further review of the activity is warranted at this time. The production activity described in the notification is authorized, subject to the FTZ Act and the Board's regulations, including Section 400.14, and subject to the following conditions:

(1) Any foreign steel mill products admitted to the zone for the TopShip, LLC, activity, including plate, angles, shapes, channels, rolled steel stock, bars, pipes and tubes, not incorporated into merchandise otherwise classified, and which is used in manufacturing, shall be subject to full customs duties in accordance with applicable law, unless the Executive Secretary determines that the same item is not then being produced by a domestic steel mill.

(2) TopShip, LLC, shall meet its obligation under 15 CFR 400.13(b) by annually advising the FTZ Board's Executive Secretary as to significant new contracts with appropriate information concerning foreign purchases otherwise dutiable, so that the FTZ Board may consider whether any foreign dutiable items are being imported for manufacturing in the zone primarily because of FTZ procedures and whether the FTZ Board should consider requiring customs duties to be paid on such items.

Dated: December 28, 2016.

Andrew McGilvray,

Executive Secretary.

[FR Doc. 2016–32031 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[B–88–2016]

Foreign-Trade Zone (FTZ) 68—El Paso, Texas; Notification of Proposed Production Activity; PGTEX USA, Inc. (Fiber Glass Fabrics); El Paso, Texas

PGTEX USA, Inc. (PGTEX) submitted a notification of proposed production activity to the FTZ Board for its facility in El Paso, Texas, within FTZ 68. The notification conforming to the requirements of the regulations of the FTZ Board (15 CFR 400.22) was received on December 19, 2016.

The PGTEX facility is located within Site 3 of FTZ 68. The facility is used for the production of fiber glass fabrics used in a variety of applications: Wind turbine blades, sporting goods, autos, shipbuilding, building materials and aerospace. Pursuant to 15 CFR 400.14(b), FTZ activity would be limited to the specific foreign-status materials and components and specific finished product described in the submitted notification (as described below) and subsequently authorized by the FTZ Board.

The components and materials sourced from abroad include yarns (glass fiber) (HTSUS 7019.19), glass fibers (HTSUS 7019.90), and polyester yarn (HTSUS 5402.33) (duty rates range from 4.3 to 6.5%). The applicant indicates that these foreign-sourced materials/components will be admitted to the FTZ in privileged foreign status (19 CFR 146.41). This would preclude inverted tariff benefits on such items on its domestic sales of fiber glass fabrics. Production under FTZ procedures could exempt PGTEX from customs duty payments on the foreign-status components used in export production. Customs duties also could possibly be deferred or reduced on foreign-status production equipment.

Public comment is invited from interested parties. Submissions shall be addressed to the FTZ Board's Executive Secretary at the address below. The closing period for their receipt is February 14, 2017.

A copy of the notification will be available for public inspection at the Office of the Executive Secretary, Foreign-Trade Zones Board, Room 21013, U.S. Department of Commerce, 1401 Constitution Avenue NW., Washington, DC 20230–0002, and in the ''Reading Room'' section of the FTZ Board's Web site, which is accessible via *www.trade.gov/ftz.*

For further information, contact Diane Finver at *Diane.Finver@trade.gov* or (202) 482–1367.

Dated: December 28, 2016.

Elizabeth Whitman,

Acting Executive Secretary.

[FR Doc. 2016–32027 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[A–570–851]

Certain Preserved Mushrooms From the People's Republic of China: Final Rescission of Antidumping Duty New Shipper Review; 2015

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: The Department of Commerce (Department) published its *Preliminary Rescission* for the new shipper review (NSR) of the antidumping duty order on certain preserved mushrooms from the People's Republic of China on August 8, 2016. The period of review (POR) is February 1, 2015, through July 31, 2015. For the final results of this review, as discussed below, we continue to find that the single U.S. sale made by Linyi Yuqiao International Trade Co., Ltd. (Yuqiao) during the POR is not *bona fide.* Because any weighted average dumping margins calculated in a NSR must be based solely on *bona fide* sales, we are rescinding this NSR.

DATES: Effective January 5, 2017.

FOR FURTHER INFORMATION CONTACT: Michael J. Heaney or Erin Kearney, AD/CVD Operations, Office VI, Enforcement and Compliance, International Trade Administration, Department of Commerce, 1401 Constitution Avenue NW., Washington, DC 20230; telephone: (202) 482–4475 and (202) 482–0167 respectively.

SUPPLEMENTARY INFORMATION:

Background

On August 8, 2016, the Department of Commerce (Department) published its *Preliminary Rescission* for the NSR of the antidumping duty order on certain preserved mushrooms from the People's Republic of China.[1] For a complete description of the events that followed the publication of the *Preliminary Rescission, see* the Issues and Decision Memorandum.[2] The Issues and Decision Memorandum is a public document and is on file electronically via Enforcement and Compliance's Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS). ACCESS is available to registered users at *http://access.trade.gov* and in the Central Records Unit, Room B8024 of the main Department of Commerce building. In addition, a complete version of the Issues and Decision Memorandum can be accessed directly at *http://enforcement.trade.gov/frn/index.html.* The signed Issues and Decision Memorandum and the electronic version of the Issues and Decision Memorandum are identical in content.

Scope of the Order

The products covered by this order are certain preserved mushrooms, whether imported whole, sliced, diced, or as stems and pieces. The certain preserved mushrooms covered under this order are the species *Agaricus bisporus* and *Agaricus bitorquis.* ''Certain Preserved Mushrooms'' refers to mushrooms that have been prepared or preserved by cleaning, blanching, and sometimes slicing or cutting. These mushrooms are then packed and heated in containers including, but not limited to, cans or glass jars in a suitable liquid medium, including, but not limited to, water, brine, butter or butter sauce. Certain preserved mushrooms may be imported whole, sliced, diced, or as stems and pieces. Included within the scope of this order are ''brined'' mushrooms, which are presalted and packed in a heavy salt solution to provisionally preserve them for further processing. The merchandise subject to this order is classifiable under subheadings: 2003.10.0127, 2003.10.0131, 2003.10.0137, 2003.10.0143, 2003.10.0147, 2003.10.0153, and 0711.51.0000 of the Harmonized Tariff Schedule of the United States (HTSUS). Although the HTSUS subheadings are provided for convenience and Customs purposes, the written description of the scope of this order is dispositive.[3]

Analysis of Comments Received

All issues raised in the case briefs by parties are addressed in the Issues and Decision Memorandum. A list of the issues which parties raised is attached to this notice as an Appendix.

Rescission of New Shipper Review

For the *Preliminary Rescission,* the Department analyzed the *bona fides* of Yuqiao's single U.S. sale during the POR, and preliminarily found it was not a *bona fide* sale.[4] In Yuqiao's case brief, Yuqiao submitted comments on the Department's *bona fides* analysis.[5] In this final rescission, we have analyzed Yuqiao's comments and continue to determine that Yuqiao's single U.S. sale is non-*bona fide.* Therefore, the Department is rescinding this NSR. For a complete discussion, *see* the Issues and Decision Memorandum.

Assessment

As the Department is rescinding this NSR, we have not calculated a company-specific dumping margin for Yuqiao. However, the Department initiated an administrative review of the antidumping duty order on certain preserved mushrooms from the PRC covering numerous exporters, including Yuqiao, for the period of February 1, 2015 through January 31, 2016, which overlaps in part with the POR of this NSR.[6] Thus, we will instruct U.S. Customs and Border Protection (CBP) to continue to suspend subject merchandise exported by Yuqiao and

[1] *See Certain Preserved Mushrooms from the People's Republic of China: Preliminary Rescission of 2015 Antidumping Duty New Shipper Review,* 81 FR 52403 (August 8, 2016) (*Preliminary Rescission*); *see also Certain Preserved Mushrooms from the People's Republic of China: Notice of Amendment of Final Determination of Sales at Less Than Fair Value and Antidumping Duty Order,* 64 FR 8308 (February 19, 1999) (*Order*).

[2] *See* Memorandum from Christian Marsh, Deputy Assistant Secretary, Antidumping and Countervailing Operations, to Paul Piquado, Assistant Secretary for Enforcement and Compliance, entitled ''Certain Preserved Mushrooms from the People's Republic of China: Issues and Decision Memorandum for the Final Rescission,'' issued concurrently with and hereby adopted by, this notice (Issues and Decision Memorandum).

[3] For a complete description of the scope of the order, *see* the Issues and Decision Memorandum.

[4] *See Preliminary Rescission; see also* Memorandum from Michael J. Heaney to Scot Fullerton, Re: 2015 Antidumping Duty New Shipper Review of Certain Preserved Mushrooms from the People's Republic of China: Preliminary Bona Fide Sales Analysis for Linyi Yuqiao International Trade Co., Ltd., dated August 2, 2016.

[5] *See* Letter from Linyi Yuqiao International Trade Co., Ltd. Re: Certain Preserved Mushrooms from the People's Republic of China; Yuqiao's Comments on the Department's Preliminary Rescission, dated September 7, 2016.

[6] *See Initiation of Antidumping and Countervailing Duty Administrative Reviews,* 81 FR 20324, 20338–20240 (April 7, 2016).

entered into the United States during the period February 1, 2015 through January 31, 2016 until CBP receives instructions relating to the administrative review of this order covering that period.

Cash Deposit Requirements

Effective upon publication of this notice of final rescission of the NSR of Yuqiao, the Department will instruct U.S. Customs and Border Protection to discontinue the option of posting a bond or security in lieu of a cash deposit for entries of subject merchandise from Yuqiao. Because we did not calculate a dumping margin for Yuqiao or grant Yuqiao a separate rate in this NSR, Yuqiao continues to be part of the PRC-wide entity. The cash deposit rate applicable to the PRC-wide entity is 308.33 percent. The current cash deposit requirements shall remain in effect until further notice.

Administrative Protective Order

This notice also serves as a final reminder to parties subject to Administrative Protective Order (APO) of their responsibility concerning the return or destruction of proprietary information disclosed under APO in accordance with 19 CFR 351.305, which continues to govern business proprietary information in these segments of the proceeding. Timely written notification of the return or destruction of APO materials, or conversion to judicial protective order, is hereby requested. Failure to comply with the regulations and terms of an APO is a violation which is subject to sanction.

We are issuing and publishing this notice in accordance with sections 751(a)(2)(B) and 777(i) of the Tariff Act of 1930, as amended, and 19 CFR 351.214.

Dated: December 29, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

Appendix—Issues and Decision Memorandum

I. Summary
II. Background
III. Scope of the Order
IV. Discussion of the Issues
Comment 1: Whether the Department Properly Weighed the *Bona Fide* Criteria Established Under Section 751(a)(2)(B)(iv) of the Statute
Comment 2: Analysis of Sales Quantity, Timing, and Payment of Yuqiao's Sale
Comment 3: Analysis of the Behavior of Yuqiao, Yuqiao's Importer, and Yuqiao's Supplier
V. Recommendation

[FR Doc. 2016–31992 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[A–821–809]

Certain Hot-Rolled Carbon Steel Flat Products From the Russian Federation: Preliminary Results of Antidumping Duty Administrative Review; 2014–2015

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: The Department of Commerce (the Department) is conducting an administrative review of the antidumping duty order on hot-rolled carbon steel flat products (hot-rolled steel) from the Russian Federation (Russia). The period of review (POR) is December 19, 2014, through November 30, 2015. The review covers one producer/exporter of the subject merchandise, Severstal PAO and Severstal Export (collectively, Severstal). We preliminarily determine that sales of subject merchandise by Severstal were made at less than normal value during the POR. Interested parties are invited to comment on these preliminary results.

DATES: Effective January 5, 2017.

FOR FURTHER INFORMATION, CONTACT: John Drury or Madeline Heeren, AD/CVD Operations, Office VI, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 482–0195 or (202) 482–9179, respectively.

SUPPLEMENTARY INFORMATION:

Background

The Department published the notice of initiation of this review on February 9, 2016.[1] Pursuant to section 751(a)(3)(A) of the Tariff Act of 1930, as amended (the Act), the Department extended these preliminary results by 106 days until December 16, 2016.[2] The Department then extended the preliminary results by an additional 14 days until December 31, 2016.[3]

For a description of the events that occurred prior, and subsequent, to the initiation of this review, *see* the memorandum dated concurrently with and hereby adopted by this notice[4] and Appendix I of this notice. The Preliminary Decision Memorandum is a public document and is on file electronically *via* Enforcement and Compliance's Antidumping and Countervailing Duty Centralized Electronic Service System (ACCESS). Access to ACCESS is available to registered users at *http://access.trade.gov* and is available to all parties in the Central Records Unit, Room B8024 of the main Department of Commerce building. In addition, a complete version of the Preliminary Decision Memorandum can be accessed directly on the Internet at *http://enforcement.trade.gov/frn/index.html.* A list of topics discussed in the Preliminary Decision Memorandum is attached as an Appendix to this notice. The signed Preliminary Decision Memorandum and the electronic versions of the Preliminary Decision Memorandum are identical in content.

Scope of the Order

The product covered by this order is hot-rolled steel from Russia. The full text of the scope of the order is contained in the Preliminary Decision Memorandum.

Methodology

The Department is conducting this review in accordance with section 751(a)(2) of the Act. For a full description of the methodology and rationale underlying our conclusions, *see* the Preliminary Decision Memorandum.

Application of Facts Available and Adverse Facts Available

We preliminarily determine that the only respondent being individually reviewed, Severstal, failed to cooperate to the best of its ability in participating in the review, warranting the

[1] *See Initiation of Antidumping and Countervailing Duty Administrative Reviews,* 81 FR 6832 (February 9, 2016) (*Initiation Notice*).

[2] *See* Memorandum to Christian Marsh, Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations, entitled ''Certain Hot-Rolled Carbon Steel Flat Products from the Russian Federation: Extension of Deadline for Preliminary Results of Antidumping Duty Administrative Review; 2014/2015,'' dated August 17, 2016.

[3] *See* Memorandum to Christian Marsh, Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations, entitled ''Certain Hot-Rolled Carbon Steel Flat Products from the Russian Federation: Extension of Deadline for Preliminary Results of Antidumping Duty Administrative Review; 2014/2015,'' dated December 16, 2016.

[4] *See* Memorandum to Paul Piquado, Assistant Secretary for Enforcement and Compliance, from Christian Marsh, Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations entitled: ''Decision Memorandum for the Preliminary Results of Review of Certain Hot-Rolled Carbon Steel Flat Products from the Russian Federation'' (Preliminary Decision Memorandum).

application of facts otherwise available with adverse inferences, pursuant to section 776(a)–(b) of the Act. For a full description of the rationale underlying our conclusions, *see* the Preliminary Decision Memorandum.

Preliminary Results of Review

We preliminarily determine that, for the period December 19, 2014, through November 30, 2015, the following weighted -average dumping margin exist:

Exporter/producer	Weighted-average dumping margin (percent)
Severstal PAO and Severstal Export (collectively, Severstal)	184.56

Disclosure and Public Comment

The Department will disclose to parties to the proceeding any calculations performed in connection with these preliminary results of review within five days after the date of publication of this notice.[5] Interested parties may submit case briefs to the Department in response to these preliminary results no later than 30 days after the publication of these preliminary results.[6] Rebuttal briefs, the content of which is limited to the issues raised in the case briefs, must be filed within five days from the deadline date for the submission of case briefs.[7]

Parties who submit arguments in this proceeding are requested to submit with each argument: (1) A statement of the issue; (2) a brief summary of the argument; and (3) a table of authorities.[8] Executive summaries should be limited to five pages total, including footnotes. Case and rebuttal briefs should be filed using ACCESS.[9] In order to be properly filed, ACCESS must successfully receive an electronically-filed document in its entirety by 5 p.m. Eastern Time. Case and rebuttal briefs must be served on interested parties.[10]

Within 30 days of the date of publication of this notice, interested parties may request a public hearing on arguments raised in the case and rebuttal briefs.[11] Unless the Department specifies otherwise, the hearing, if requested, will be held two days after the date for submission of rebuttal briefs.[12] Written argument and hearing requests should be electronically submitted to the Department via ACCESS.[13] The Department's electronic records system, ACCESS, must successfully receive an electronically-filed document in its entirety by 5:00 p.m. Eastern Daylight Time within 30 days after the date of publication of this notice.[14] Requests should contain: (1) The party's name, address, and telephone number; (2) the number of participants; and (3) a list of issues to be discussed. Issues raised in the hearing will be limited to those raised in the respective case briefs. Parties will be notified of the time and location of the hearing.

The Department intends to publish the final results of this administrative review, including the results of its analysis of issues addressed in any case or rebuttal brief, no later than 120 days after publication of the preliminary results, unless extended.[15]

Assessment Rates

Upon completion of this administrative review, the Department shall determine, and Customs and Border Protection (CBP) shall assess, antidumping duties on all appropriate entries.[16] If Severstal's weighted-average dumping margin is not zero or *de minimis* in the final results of this review, we will calculate importer-specific assessment rates on the basis of the ratio of the total amount of antidumping duties calculated for an importer's examined sales and the total entered value of such sales in accordance with 19 CFR 351.212(b)(1). If Severstal's weighted-average dumping margin is zero or *de minimis* in the final results of review, we will instruct CBP not to assess duties on any of its entries in accordance with the *Final Modification for Reviews, i.e.,* ''{w}here the weighted-average margin of dumping for the exporter is determined to be zero or *de minimis,* no antidumping duties will be assessed.'' [17] The final results of this review shall be the basis for the assessment of antidumping duties on entries of merchandise covered by the final results of this review and for future deposits of estimated duties, where applicable.

We intend to issue liquidation instructions to CBP 15 days after publication of the final results of this review.

Cash Deposit Requirements

The following cash deposit requirements will be effective upon publication of the final results of this administrative review for all shipments of the subject merchandise entered, or withdrawn from warehouse, for consumption on or after the publication date of the final results of this administrative review, as provided by section 751(a)(2)(C) of the Act: (1) The cash deposit rate for Severstal will be that established in the final results of this administrative review; (2) for previously reviewed or investigated companies not listed above, the cash deposit rate will continue to be the company-specific rate published for the most recent period; (3) if the exporter is not a firm covered in this review, a prior review, or in the investigation but the manufacturer is, the cash deposit rate will be the rate established for the most recent period for the manufacturer of the merchandise; and (4) the cash deposit rate for all other manufacturers or exporters will continue to be the all-others rate of 184.56 percent, which is the all-others rate established in the investigation.[18] These cash deposit requirements, when imposed, shall remain in effect until further notice.

Notification to Importers

This notice also serves as a reminder to importers of their responsibility under 19 CFR 351.402(f)(2) to file a certificate regarding the reimbursement of antidumping duties prior to liquidation of the relevant entries during this review period. Failure to comply with this requirement could result in the Department's presumption that reimbursement of antidumping duties occurred and the subsequent assessment of double antidumping duties.

We are issuing and publishing this notice in accordance with sections 751(a)(1) and 777(i)(1) of the Act.

[5] *See* 19 CFR 351.224(b).

[6] *See* 19 CFR 351.309(c)(1)(ii).

[7] *See* 19 CFR 351.309(d)(1) and (2).

[8] *See* 19 CFR 351.309(c)(2).

[9] *See generally* 19 CFR 351.303.

[10] *See* 19 CFR 351.303(f).

[11] *See* 19 CFR 351.310(c).

[12] *See* 19 CFR 351.310(d)(1).

[13] *See generally* 19 CFR 351.303.

[14] *See* 19 CFR 351.310(c).

[15] *See* section 751(a)(3)(A) of the Act; 19 CFR 351.213(h).

[16] *See* 19 CFR 351.212(b)(1).

[17] *See Antidumping Proceedings: Calculation of the Weighted-Average Dumping Margin and Assessment Rate in Certain Antidumping Proceedings: Final Modification,* 77 FR 8101, 8102 (February 14, 2012) (*Final Modification for Reviews*).

[18] *See Termination of the Suspension Agreement on Hot-Rolled Flat-Rolled Carbon-Quality Steel Products from the Russian Federation, Rescission of 2013–2014 Administrative Review, and Issuance of Antidumping Duty Order,* 79 FR 77455 (December 24, 2014).

Dated: December 27, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

Appendix I

Scope of the Investigation

For the purposes of this Administrative Review, ''hot-rolled steel'' means certain hot-rolled flat-rolled carbon-quality steel products of a rectangular shape, of a width of 0.5 inch or greater, neither clad, plated, nor coated with metal and whether or not painted, varnished, or coated with plastics or other non-metallic substances, in coils (whether or not in successively superimposed layers) regardless of thickness, and in straight lengths, of a thickness less than 4.75 mm and of a width measuring at least 10 times the thickness.

Universal mill plate (*i.e.,* flat-rolled products rolled on four faces or in a closed box pass, of a width exceeding 150 mm but not exceeding 1250 mm and of a thickness of not less than 4 mm, not in coils and without patterns in relief) of a thickness not less than 4.0 mm is not included within the scope of this administrative review.

Specifically included in this scope are vacuum degassed, fully stabilized (commonly referred to as interstitial-free (''IF'')) steels, high strength low alloy (''HSLA'') steels, and the substrate for motor lamination steels. IF steels are recognized as low carbon steels with micro-alloying levels of elements such as titanium and/or niobium added to stabilize carbon and nitrogen elements. HSLA steels are recognized as steels with micro-alloying levels of elements such as chromium, copper, niobium, titanium, vanadium, and molybdenum. The substrate for motor lamination steels contains micro-alloying levels of elements such as silicon and aluminum.

Steel products to be included in the scope of this administrative review, regardless of Harmonized Tariff Schedule of the United States (''HTSUS'') definitions, are products in which: (1) Iron predominates, by weight, over each of the other contained elements; (2) the carbon content is 2 percent or less, by weight; and (3) none of the elements listed below exceeds the quantity, by weight, respectively indicated: 1.80 percent of manganese, or 1.50 percent of silicon, or 1.00 percent of copper, or 0.50 percent of aluminum, or 1.25 percent of chromium, or 0.30 percent of cobalt, or 0.40 percent of lead, or 1.25 percent of nickel, or 0.30 percent of tungsten, or 0.012 percent of boron, or 0.10 percent of molybdenum, or 0.10 percent of niobium, or 0.41 percent of titanium, or 0.15 percent of vanadium, or 0.15 percent of zirconium.

All products that meet the physical and chemical description provided above are within the scope of this order unless otherwise excluded. The following products, by way of example, are outside and/or specifically excluded from the scope of this order:

—Alloy hot-rolled steel products in which at least one of the chemical elements exceeds those listed above (including *e.g.,* ASTM specifications A543, A387, A514, A517, and A506).
—SAE/AISI grades of series 2300 and higher.
—Ball bearing steels, as defined in the HTSUS.
—Tool steels, as defined in the HTSUS.
—Silica-manganese (as defined in the HTSUS) or silicon electrical steel with a silicon level exceeding 1.50 percent.
—ASTM specifications A710 and A736.
—USS Abrasion-resistant steels (USS AR 400, USS AR 500).
—Hot-rolled steel coil which meets the following chemical, physical and mechanical specifications:

C	Mn	P	S	Si	Cr	Cu	Ni
0.10–0.14%	0.90% Max	0.025% Max	0.005% Max	0.30–0.50%	0.50–0.70%	0.20–0.40%	0.20% Max

Width = 44.80 inches maximum; Thickness = 0.063—0.198 inches;

Yield Strength = 50,000 ksi minimum; Tensile Strength = 70,000–88,000 psi.

—Hot-rolled steel coil which meets the following chemical, physical and mechanical specifications:

C	Mn	P	S	Si	Cr	Cu	Ni
0.10–0.16%	0.70%–0.90%	0.025% Max	0.006% Max	0.30–0.50%	0.50–0.70%	0.25% Max	0.20% Max
Mo							
0.21% Max							

Width = 44.80 inches maximum; Thickness = 0.350 inches maximum;

Yield Strength = 80,000 ksi minimum; Tensile Strength = 105,000 psi Aim.

—Hot-rolled steel coil which meets the following chemical, physical and mechanical specifications:

C	Mn	P	S	Si	Cr	Cu	Ni
0.10–0.14%	1.30–1.80%	0.025% Max	0.005% Max	0.30–0.50%	0.50–0.70%	0.20–0.70%	0.20% Max
V(wt.)	Cb						
0.10% Max	0.08% Max						

Width = 44.80 inches maximum; Thickness = 0.350 inches maximum;

Yield Strength = 80,000 ksi minimum; Tensile Strength = 105,000 psi Aim.

—Hot-rolled steel coil which meets the following chemical, physical and mechanical specifications:

C	Mn	P	S	Si	Cr	Cu	Ni
0.15% Max	1.40% Max	0.025% Max	0.010% Max	0.50% Max	1.00% Max	0.50% Max	.20% Max
Nb	Ca	Al					
0.005% Max	Treated	0.01–0.07%					

Width = 39.37 inches; Thickness = 0.181 inches maximum; Yield Strength = 70,000 psi minimum for thicknesses ≤ 0.148 inches and 65,000 psi minimum for thicknesses > 0.148 inches; Tensile Strength = 80,000 psi minimum.

Hot-rolled dual phase steel, phase-hardened, primarily with a ferritic-martensitic microstructure, contains 0.9 percent up to and including 1.5 percent silicon by weight, further characterized by either (i) tensile strength between 540 N/mm² and 640 N/mm² and an elongation percentage ≥ 26 percent for thicknesses of 2 mm and above, or (ii) a tensile strength between 590 N/mm² and 690 N/mm² and an elongation percentage ≥ 25 percent for thicknesses of 2mm and above.

Hot-rolled bearing quality steel, SAE grade 1050, in coils, with an inclusion rating of 1.0 maximum per ASTM E 45, Method A, with excellent surface quality and chemistry restrictions as follows: 0.012 percent maximum phosphorus, 0.015 percent maximum sulfur, and 0.20 percent maximum residuals including 0.15 percent maximum chromium.

Grade ASTM A570–50 hot-rolled steel sheet in coils or cut lengths, width of 74 inches (nominal, within ASTM tolerances), thickness of 11 gauge (0.119 inches nominal), mill edge and skin passed, with a minimum copper content of 0.20 percent.

The covered merchandise is classified in the HTSUS at subheadings: 7208.10.15.00, 7208.10.30.00, 7208.10.60.00, 7208.25.30.00, 7208.25.60.00, 7208.26.00.30, 7208.26.00.60, 7208.27.00.30, 7208.27.00.60, 7208.36.00.30, 7208.36.00.60, 7208.37.00.30, 7208.37.00.60, 7208.38.00.15, 7208.38.00.30, 7208.38.00.90, 7208.39.00.15, 7208.39.00.30, 7208.39.00.90, 7208.40.60.30, 7208.40.60.60, 7208.53.00.00, 7208.54.00.00, 7208.90.00.00, 7210.70.30.00, 7210.90.90.00, 7211.14.00.30, 7211.14.00.90, 7211.19.15.00, 7211.19.20.00, 7211.19.30.00, 7211.19.45.00, 7211.19.60.00, 7211.19.75.30, 7211.19.75.60, 7211.19.75.90, 7212.40.10.00, 7212.40.50.00, 7212.50.00.00. Certain hot-rolled flat-rolled carbon-quality steel covered include: Vacuum degassed, fully stabilized; high strength low alloy; and the substrate for motor lamination steel may also enter under the following tariff numbers: 7225.11.00.00, 7225.19.00.00, 7225.30.30.50, 7225.30.70.00, 7225.40.70.00, 7225.99.00.90, 7226.11.10.00, 7226.11.90.30, 7226.11.90.60, 7226.19.10.00, 7226.19.90.00, 7226.91.50.00, 7226.91.70.00, 7226.91.80.00, and 7226.99.01.80. Although the HTSUS subheadings are provided for convenience and Customs purposes, the written description of the covered merchandise is dispositive.

Appendix II

List of Topics Discussed in the Preliminary Decision Memorandum

1. Adverse Facts Available.

[FR Doc. 2016–31995 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[A–570–815, A–533–806]

Sulfanilic Acid From India and the People's Republic of China: Final Results of Expedited Fourth Sunset Reviews of Antidumping Duty Orders

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce

SUMMARY: As a result of these sunset reviews, the Department of Commerce (''Department'') finds that revocation of the antidumping duty (''AD'') orders would be likely to lead to the continuation or recurrence of dumping at the dumping margins identified in the ''Final Results of Reviews'' section of this notice.

DATES: Effective January 5, 2017.

FOR FURTHER INFORMATION CONTACT: Mandy Mallott, AD/CVD Operations, Office III, Enforcement and Compliance, International Trade Administration, Department of Commerce, 1401 Constitution Avenue NW., Washington, DC 20230; telephone: (202) 482–6430.

SUPPLEMENTARY INFORMATION:

Background

On September 1, 2016, the Department published the notice of initiation of the fourth sunset reviews of the AD *Orders* [1] on sulfanilic acid from India and the People's Republic of China (''PRC''), pursuant to section 751(c) of the Tariff Act of 1930, as amended (''the Act'').[2] On September 14, 2016, Nation Ford Chemical Company (''Petitioner'') notified the Department of its intent to participate within the 15-day period specified in section 351.218(d)(1)(i) of the Department's regulations. Archroma, U.S., Inc. (''Archroma'') claimed interested-party status under section 771(9)(A) of the Act as a domestic importer of subject merchandise to the United States.

On September 30, 2016, the Department received from Petitioner complete substantive responses to the *Notice of Initiation,* with respect to both of the *Orders,* within the 30-day period specified in 19 CFR 351.218(d)(3)(i).[3] Also on September 30, 2016 the Department received a response from Archroma, which the Department determined did not adequately meet the requirements of a substantive response under 19 CFR 351.218(d)–(e).[4] Specifically, Archroma failed to address and/or provide additional information required of a respondent interested party pursuant to 19 CFR 351.218(d)(3)(iii), nor did it demonstrate whether the substantive submission is eligible to be considered adequate pursuant to 19 CFR 351.218(e)(1)(ii)(A).[5] No other interested parties submitted substantive responses. As a result, pursuant to section 751(c)(3)(B) of the Act and 19 CFR 351.218(e)(1)(ii)(C)(2), the Department has conducted expedited (120-day) sunset reviews of the AD orders on sulfanilic acid from India and the PRC.

Scope of the Orders

Imports covered by the antidumping duty orders are all grades of sulfanilic acid, which include technical (or crude) sulfanilic acid, refined (or purified) sulfanilic acid and sodium salt of sulfanilic acid.

Sulfanilic acid is a synthetic organic chemical produced from the direct sulfonation of aniline with sulfuric acid. Sulfanilic acid is used as a raw material in the production of optical brighteners, food colors, specialty dyes, and concrete additives. The principal differences between the grades are the undesirable quantities of residual aniline and alkali insoluble materials present in the sulfanilic acid. All grades are available as dry, free flowing powders.

Technical sulfanilic acid, classifiable under the subheading 2921.42.22 of the Harmonized Tariff Schedule (''HTS''), contains 96 percent minimum sulfanilic acid, 1.0 percent maximum aniline, and 1.0 percent maximum alkali insoluble materials. Refined sulfanilic acid, also classifiable under the subheading 2921.42.22 of the HTS, contains 98 percent minimum sulfanilic acid, 0.5 percent maximum aniline and 0.25 percent maximum alkali insoluble materials.

[1] *See Antidumping Duty Order: Sulfanilic Acid from India,* 58 FR 12025 (March 2, 1993) (''*India Order*''), *and Antidumping Duty Order: Sulfanilic Acid from the People's Republic from China,* 57 FR 37524 (August 19, 1992) (''*PRC Order*'') (collectively, ''*Orders*'').

[2] *See Initiation of Five-Year (''Sunset'') Reviews,* 81 FR 60386 (September 1, 2016) (''*Notice of Initiation*'').

[3] *See* Submissions from Petitioner to the Department, ''Sulfanilic Acid from the People's Republic of China/Petitioner's Substantive Response'' (''PRC Substantive Response''), and ''Sulfanilic Acid from India/Petitioner's Substantive Response'' (''India Substantive Response''), each dated September 30, 2016.

[4] *See* Submissions from Archroma to the Department, both titled ''Sulfanilic Acid from India and China: Archroma's Substantive Response to Notice of Initiation,'' each dated September 30, 2016. *See* letter from the Department to Archroma, ''Sunset Reviews of Sulfanilic Acid from the People's Republic of China and India,'' dated October 24, 2016.

[5] *Id.*

Sodium salt (sodium sulfanilate), classifiable under the HTS subheading 2921.42.90, is a powder, granular or crystalline material which contains 75 percent minimum equivalent sulfanilic acid, 0.5 percent maximum aniline based on the equivalent sulfanilic acid content, and 0.25 percent maximum alkali insoluble materials based on the equivalent sulfanilic acid content.

Although the HTS subheadings are provided for convenience and customs purposes, our written description of the scope of these proceedings is dispositive.

Analysis of Comments Received

A complete discussion of all issues raised with respect to these sunset reviews is provided in the accompanying Issues and Decision Memorandum, which is hereby adopted by this notice.[6] The issues discussed in the Issues and Decision Memorandum include the likelihood of continuation or recurrence of dumping and the magnitude of the margins of dumping likely to prevail if the *Orders* were revoked. The Issues and Decision Memorandum is a public document and is on file electronically via Enforcement and Compliance's Antidumping and Countervailing Duty Centralized Electronic Service System (''ACCESS''). ACCESS is available to registered users at *https://access.trade.gov* and to all parties in the Central Records Unit, Room B8024 of the main Department of Commerce building. In addition, a complete version of the Issues and Decision Memorandum can be accessed at *http://enforcement.trade.gov/frn/.* The signed Issues and Decision Memorandum and the electronic version of the Issues and Decision Memorandum are identical in content.

Final Results of the Sunset Reviews

Pursuant to sections 751(c)(1) and 752(c)(1) and (3) of the Act, the Department determines that revocation of the AD orders on sulfanilic acid from India and the PRC would likely lead to a continuation or recurrence of dumping, and that the magnitude of the dumping margins likely to prevail would be weighted-average margins up to 71.09 percent for India, and up to 85.20 percent for the PRC.

[6] *See* the Department's memorandum from Christian Marsh, Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations, to Paul Piquado, Assistant Secretary for Enforcement and Compliance, ''Issues and Decision Memorandum for the Final Results of Expedited Fourth Sunset Reviews of the Antidumping Duty Orders on Sulfanilic Acid from India and the People's Republic of China,'' dated concurrently with this notice.

Notification Regarding Administrative Protective Orders

This notice also serves as the only reminder to parties subject to administrative protective orders (''APO'') of their responsibility concerning the return or destruction of proprietary information disclosed under APO in accordance with 19 CFR 351.305. Timely notification of the return or destruction of APO materials or conversion to judicial protective order is hereby requested. Failure to comply with the regulations and terms of an APO is a violation which is subject to sanction.

We are issuing and publishing the results and notice in accordance with sections 751(c), 752(c), and 777(i)(1) of the Act and 19 CFR 351.218(f)(4).

Dated: December 29, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

[FR Doc. 2016–31993 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[A–570–888]

Floor-Standing, Metal-Top Ironing Tables and Certain Parts Thereof From the People's Republic of China: Notice of Amended Final Results of Antidumping Duty Administrative Reviews Pursuant to Settlement; 2004–2005 and 2006–2007

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: The Department of Commerce (the Department) is amending the final results of the February 3, 2004–July 31, 2005 and August 1, 2005–July 31, 2006 antidumping duty administrative reviews of floor-standing, metal-top ironing tables and certain parts thereof from the People's Republic of China (PRC) with respect to Since Hardware (Guangzhou) Co., Ltd. (Since Hardware) pursuant to an agreement that settles the related litigation.

DATES: Effective January 5, 2017.

FOR FURTHER INFORMATION CONTACT: Michael J. Heaney or Erin Kearney, AD/CVD Operations, Office VI, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue NW., Washington, DC 20230; telephone: (202) 482–4475 or (202) 482–0167, respectively.

SUPPLEMENTARY INFORMATION:

Background

On August 6, 2004, the Department published the antidumping duty order on floor standing, metal top ironing tables and certain parts thereof.[1] On April 19, 2007, the Department published the amended final results of the February 3, 2004–July 31, 2005 administrative review.[2] On, March 18, 2008, the Department published the final results of the August 1, 2005–July 31, 2006 administrative review.[3]

Following the publication of the February 3, 2004–July 31, 2005 *Amended Final Results,* and the August 1, 2005–July 31, 2006 *Final Results,* Since Hardware filed lawsuits with the CIT challenging the Department's final results of both the February 3, 2004–July 31, 2005 and the August 1, 2005–July 31, 2006 administrative reviews. The United States and Since Hardware have entered into an agreement to settle the outstanding litigation. The Court issued its Judgment on December 8, 2016.[4]

Assessment of Duties

Pursuant to the Court's Judgment, the Department shall instruct Customs and Border Protection (CBP) to assess antidumping duties on all shipments of floor-standing, metal-top ironing tables and certain parts thereof, from the PRC, which were entered, or withdrawn from warehouse, for consumption during the period February 3, 2004–July 31, 2005, and that were produced or exported by Since Hardware at a rate of 72.29 percent. The Department shall also instruct CBP to assess antidumping duties on all shipments of floor-standing, metal-top ironing tables and certain parts thereof, from the PRC, which were entered, or withdrawn from warehouse, for consumption during the

[1] *See Notice of Amended Final Determination of Sales at Less Than Fair Value and Antidumping Duty Order: Floor Standing, Metal-Top Ironing Tables and Certain Parts Thereof from the People's Republic of China,* 69 FR 47868 (August 6, 2004) (*Order*).

[2] *See Floor-Standing, Metal-Top Ironing Tables and Certain Parts Thereof from the People's Republic of China: Final Results and Final Rescission, In Part, of Antidumping Duty Administrative Review,* 72 FR 13239 (Dep't of Commerce Mar. 21, 2007), *amended by Notice of Amended Final Results of Antidumping Duty Administrative Review: Floor Standing, Metal-Top Ironing Tables and Certain Parts Thereof from the People's Republic of China,* 72 FR 19689 (April 19, 2007) (February 3–2004–July 31, 2005 *Amended Final Results*).

[3] *See Floor Standing, Metal-Top Ironing Tables and Certain Parts Thereof from the People's Republic of China: Final Results of Antidumping Duty Administrative Review* 73 FR 14437 (March 18, 2008) August 1, 2005–July 31, 2006 *Final Results*).

[4] *See Home Products International, Inc.* v. *United States,* Court Nos. 07–00123, 08–00094 (December 8, 2016).

period August 1, 2005–July 31, 2006, and that were exported by Since Hardware at a rate of 72.29 percent. The Department intends to issue assessment instructions to CBP within 15 days after the date of publication of these amended final results of the reviews in the **Federal Register**.

Cash Deposit Requirements

Because Since Hardware has a superseding review,[5] these amended finals do not establish a revised cash deposit rate for Since Hardware.

Notification to Importers

This notice also serves as a final reminder to importers of their responsibility under 19 CFR 351.402(f) to file a certificate regarding the reimbursement of antidumping duties prior to liquidation of the relevant entries during this review period. Failure to comply with this requirement could result in the Secretary's presumption that reimbursement of antidumping duties occurred, and the subsequent assessment of double antidumping duties.

We are issuing this determination and publishing these amended final results of antidumping duty administrative review pursuant to the Court's Judgment.

Dated: December 29, 2016.

Paul Piquado,

Assistant Secretary for Enforcement and Compliance.

[FR Doc. 2016–31994 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–DS–P

[5] *See Floor-Standing, Metal-Top Ironing Tables and Certain Parts Thereof From the People's Republic of China: Notice of Court Decision Not in Harmony With Final Results and Notice of Amended Final Results of the Antidumping Duty Administrative Review; 2008–2009,* 80 FR 36507 (June 25, 2015) (2008–2009 Amended Final Results), assigning Since Hardware a rate of 83.83 percent.

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Proposed Information Collection; Comment Request; West Coast Region Pacific Tuna Fisheries Logbook and Fish Aggregating Device Form

AGENCY: National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice.

SUMMARY: The Department of Commerce, as part of its continuing effort to reduce paperwork and respondent burden, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995.

DATES: Written comments must be submitted on or before March 6, 2017.

ADDRESSES: Direct all written comments to Jennifer Jessup, Departmental Paperwork Clearance Officer, Department of Commerce, Room 6616, 14th and Constitution Avenue NW., Washington, DC 20230 (or via the Internet at *JJessup@doc.gov).*

FOR FURTHER INFORMATION CONTACT: Requests for additional information or copies of the information collection instrument and instructions should be directed to Shannon Penna, National Marine Fisheries Service (NMFS), West Coast Region (WCR) Long Beach Office, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90805, (562) 980–4036 or *shannon.penna@noaa.gov.*

SUPPLEMENTARY INFORMATION:

I. Abstract

This request is for an extension of a current information collection.

United States' (U.S.) participation in the Inter-American Tropical Tuna Commission (IATTC) results in certain record keeping requirements for U.S. vessel owners and operators who fish in the IATTC's area of management responsibility. Vessel owners and operators must maintain a log of all operations conducted from the fishing vessel, entering the date, noon position, and the tonnage of fish aboard by species. The purse seine bridge logbook provided by the IATTC is used by all United States purse seine vessel owners and operators. In addition, vessel owners and operators of large purse seine vessels (*i.e.,* with at least 363 metric tons of fish hold volume) that fish with FADs in the Eastern Pacific Ocean (EPO) are required to collect data specific on fish aggregating devices (FADs) to meet international obligations under IATTC Resolution C–16–01. Owners and operators of a FAD would be required to record data for each interaction with a FAD through a FAD form provided by the IATTC or through a FAD form provided by NMFS that combines the bridge logbook with the FAD Form. Data collected from FADs will allow IATTC scientific staff to distinguish a particular FAD when analyzing data and can track the activities on a FAD through time.

II. Method of Collection

Vessel operators maintain bridge logs on a daily basis and FAD forms are completed for each FAD interaction. Bridge logs and FAD forms can be either emailed or mailed to the IATTC and also National Marine Fisheries Service (NMFS) Southwest Fisheries Science Center at the completion of each trip. These data are processed and maintained as confidential by the IATTC and by NMFS.

III. Data

OMB Control Number: 0648–0148.

Form Number(s): None.

Type of Review: Regular (extension of a current information collection).

Affected Public: Individuals or households; business or other for-profit organizations.

Estimated Number of Respondents: 21.

Estimated Time per Response: 5 minutes to complete bridge log; 10 minutes to complete FAD data collection requirements.

Estimated Total Annual Burden Hours: 746.

Estimated Total Annual Cost to Public: $21.56 in recordkeeping/reporting costs.

IV. Request for Comments

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden (including hours and cost) of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology.

Comments submitted in response to this notice will be summarized and/or included in the request for OMB approval of this information collection; they also will become a matter of public record.

Dated: December 30, 2016.

Sarah Brabson,

NOAA PRA Clearance Officer.

[FR Doc. 2016–32004 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XF132

New England Fishery Management Council; Public Meeting

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of public meeting.

SUMMARY: The New England Fishery Management Council (Council, NEFMC) will hold a three-day meeting to consider actions affecting New England fisheries in the exclusive economic zone (EEZ).

DATES: The meeting will be held on Tuesday, Wednesday, and Thursday, January 24, 25, and 26, 2017, beginning at 9 a.m. on January 24, 8:30 a.m. on January 25, and 8:30 a.m. on January 26.

ADDRESSES: The meeting will be held at the Sheraton Harborside Hotel, 250 Market Street, Portsmouth, NH 03801; telephone (603) 431–2300; online at *www.sheratonportsmouth.com.*

Council address: New England Fishery Management Council, 50 Water Street, Mill 2, Newburyport, MA 01950; telephone: (978) 465–0492; *www.nefmc.org.*

FOR FURTHER INFORMATION CONTACT: Thomas A. Nies, Executive Director, New England Fishery Management Council; telephone: (978) 465–0492, ext. 113.

SUPPLEMENTARY INFORMATION:

Agenda

Tuesday, January 24, 2017

After introductions and brief announcements, the meeting will begin with reports from the Council Chairman and Executive Director, NMFS's Regional Administrator for the Greater Atlantic Regional Office (GARFO), liaisons from the Northeast Fisheries Science Center (NEFSC) and Mid-Atlantic Fishery Management Council, representatives from NOAA General Counsel and the Office of Law Enforcement, and staff from the Atlantic States Marine Fisheries Commission and the U.S Coast Guard. Following these reports, the Council will hear from its Monkfish Committee, which will provide an overview of the Mid-Atlantic Council's Dec. 13, 2016, actions regarding Monkfish Framework Adjustment 10 and Amendment 6. The Council also will revisit a postponed motion from its November meeting regarding trip-boat requirements for monkfish gillnetters using 10'' and larger-size mesh. Next, the Council will receive a presentation from GARFO staff on the Industry-Funded Monitoring (IFM) Omnibus Amendment. The Council will review public comments on the amendment and potentially select preferred alternatives.

After a lunch break, members of the public will be able to speak during an open comment period on issues that relate to Council business but are not included on the published agenda for this meeting. The Council asks the public to limit remarks to 3–5 minutes. The Atlantic Herring Committee will report next. During this segment of the meeting, the Council is scheduled to take final action on Framework Adjustment 5 to the Atlantic Herring Fishery Management Plan (FMP). This amendment was developed to potentially modify Georges Bank haddock bycatch accountability measures (AMs) in the herring midwater trawl fishery. Regarding Amendment 8 to the FMP, the Council will: (a) Review results from its recent Management Strategy Evaluation (MSE) workshop; (b) preview potential alternatives for a new acceptable biological catch (ABC) control rule for Atlantic herring; and (c) receive a brief update on measures currently under development to address herring localized depletion and user conflicts. Following the herring report, the Council will adjourn for the day and then hold a 5 p.m. scoping hearing to solicit initial public input on Amendment 10 to the Northeast Skate Complex FMP, which is being developed to potentially limit access to the skate bait and skate wing fisheries.

Wednesday, January 25, 2017

The second day of the meeting will begin with a 15-minute closed session to allow Council members to consult on 2017–19 appointments to the Scientific and Statistical Committee (SSC). The open session will begin at 8:45 a.m. with a presentation by staff from the Bureau of Ocean Energy Management covering the recent New York commercial wind energy lease sale and revised environmental assessment. The Northeast Fisheries Science Center then will provide a Cooperative Research Review update. Next, staff from the Lenfest Ocean Program will give an overview of the Lenfest Task Force's new report titled ''Building Effective Fishery Ecosystem Plans.'' Immediately following, the Council will hear from its own Ecosystem-Based Fishery Management Committee, which will provide a progress report on the development of operating models and a draft example Fishery Ecosystem Plan for Georges Bank.

After a lunch break, the Northeast Fisheries Science Center will present new assessment results for witch flounder and black sea bass developed by the 62nd Stock Assessment Workshop/Stock Assessment Review Committee, commonly referred to as SAW/SARC 62. The SSC then will provide overfishing limit (OFL) and ABC recommendations for witch flounder. The Groundfish Committee will report next. During this segment of the meeting, the Council is scheduled to take final action on 2017–19 witch flounder specifications for Framework Adjustment 56 to the Northeast Multispecies FMP. In addition, the Council will provide recommendations to GARFO on fishing year (FY) 2017 Gulf of Maine cod and haddock recreational measures. It also will revisit a postponed motion from its November meeting to consider asking GARFO to investigate options for exempting fishermen from southern windowpane flounder accountability measures for FY 2017. The Council will close out the day by receiving a work update on 2017 groundfish priorities.

Thursday, January 26, 2017

The third day of the meeting will begin with an initial planning discussion about the upcoming programmatic review of Council operations. The Council in November voted to make the programmatic review a 2017 priority. Next, GARFO staff will provide a report on the region's Fishery Dependent Data Visioning Project summarizing GARFO/NEFSC efforts to modernize fishery dependent data collection. The Marine Mammal Commission (MMC) will report next. MMC staff will provide an overview of agency responsibilities and mandates and then present a preview of the MMC's April 5–7, 2017 annual meeting agenda.

The Council may not take a lunch break during this last day of its January meeting but instead proceed directly to ''other business.''

Although non-emergency issues not contained in this agenda may come before this Council for discussion, those issues may not be the subject of formal action during this meeting. Council action will be restricted to those issues specifically listed in this notice and any issues arising after publication of this notice that require emergency action under section 305(c) of the Magnuson-Stevens Act, provided the public has been notified of the Council's intent to take final action to address the emergency.

Special Accommodations

This meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Thomas A. Nies (see **ADDRESSES**) at least 5 days prior to the meeting date.

Dated: December 30, 2016.

Jeffrey N. Lonergan,

Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2016–31966 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XU02

Endangered and Threatened Species; Recovery Plan for the Cook Inlet Beluga Whale

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of availability.

SUMMARY: We, NMFS, announce the adoption and availability of an Endangered Species Act Recovery Plan for the Cook Inlet beluga whale (*Delphinapterus leucas*) distinct population segment (DPS) found in Cook Inlet, AK.

ADDRESSES: The Recovery Plan is available on the NMFS Alaska Region Web site at: *https://alaskafisheries.noaa.gov/pr/cib-recovery-plan,* or upon request from the NMFS Alaska Region contact listed below.

FOR FURTHER INFORMATION CONTACT: Mandy Migura, NMFS Alaska Region, telephone: (907) 271–1332, email: *Mandy.Migura@noaa.gov;* or Therese Conant, NMFS Office of Protected Resources, telephone: (301) 427–8456, email: *Therese.Conant@noaa.gov.*

SUPPLEMENTARY INFORMATION:

Background

The Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), requires that we develop and implement recovery plans for listed species under our jurisdiction, unless it is determined that such a plan would not promote the conservation of a particular species. Recovery plans describe the specific actions considered necessary, based on the best scientific and commercial data available, to promote the conservation and recovery of species listed under the ESA.

We designated the Cook Inlet beluga whale DPS as endangered under the ESA on October 22, 2008 (73 FR 62919). The Cook Inlet beluga whale population declined nearly 50 percent from 653 belugas in 1994 to 347 belugas in 1998 (based on annual comprehensive and systematic aerial surveys), coincident with a substantial unregulated subsistence hunt. Despite a dramatic reduction in subsistence harvest of Cook Inlet beluga whales beginning in 1999, the population did not grow as expected, but continued to decline at 1.45 percent per year from 1999 to 2008, leading to its listing as endangered. The most recent (2014) abundance survey estimated a population of 340 Cook Inlet beluga whales, with a continued population decline of 0.4 percent per year from 2004 to 2014.

On May 15, 2015, we released the *Draft Recovery Plan for the Cook Inlet Beluga Whale* (Draft Recovery Plan) and published a notice of availability in the **Federal Register** (80 FR 27925) requesting comments. Twenty-three comment submissions were received during the 60-day public comment period on the plan. Concurrent with the public comment period, we also obtained review of the Draft Recovery Plan from five independent scientific peer reviewers. We considered all of the peer review and public comments received on the Draft Recovery Plan in developing the final version of the Recovery Plan.

The Recovery Plan

Section 4(f)(1) of the ESA requires that recovery plans incorporate, to the maximum extent practicable: (1) Objective, measurable criteria which, when met, would result in a determination that the species is no longer threatened or endangered; (2) site-specific management actions necessary to achieve the plan's goals; and (3) estimates of the time required and costs to implement recovery actions. The ultimate goal of the Recovery Plan is to achieve recovery of endangered Cook Inlet beluga whales to a level sufficient to warrant their removal from the List of Threatened and Endangered Wildlife and Plants under the ESA (delist). The intermediate goal is to reclassify Cook Inlet belugas from endangered to threatened (downlist). The Recovery Plan contains: (1) Background on Cook Inlet beluga whale natural history and population status; (2) a threats assessment, (3) biological and recovery criteria for downlisting and delisting, (4) actions necessary to promote the recovery of the species, (5) an implementation schedule, and (6) estimates of time and cost to recovery.

Ten potential threat types are identified and assessed in the Recovery Plan, based on current knowledge of threat factors. The threats assessment ranks each of these ten threats as high (catastrophic events, cumulative effects of multiple stressors, and noise), medium (disease agents, habitat loss or degradation, reduction in prey, and unauthorized take), or low (pollution, predation, and subsistence hunting) relative concern for Cook Inlet beluga whale recovery. Due to an incomplete understanding of the threats facing Cook Inlet beluga whales, we are unable to identify with certainty the actions that will most immediately encourage recovery. Until we know which threats are limiting recovery, the strategy of the Recovery Plan is to focus on threats identified as of medium or high relative concern. This should focus efforts and resources on actions that are more likely to benefit Cook Inlet beluga whale recovery.

The Recovery Plan incorporates both demographic and threats-based criteria which, when met, would indicate that reclassifying the species from endangered to threatened, or delisting the species, should be considered. The threats-based recovery criteria are designed to evaluate the five ESA section 4(a)(1) factors described in the ESA listing determination for Cook Inlet beluga whales.

In summary, Cook Inlet beluga whales may be considered for reclassification from endangered to threatened when: (1) The abundance estimate for Cook Inlet beluga whales is greater than or equal to 520 individuals, and there is 95 percent or greater probability that the most recent 25-year population abundance trend (where 25 years represents one full generation) is positive; and (2) the 10 downlisting threats-based criteria are satisfied. Cook Inlet beluga whales may be considered for delisting when: (1) The abundance estimate for Cook Inlet beluga whales is greater than or equal to 780 individuals, and there is 95 percent or greater probability that the most recent 25-year population abundance trend (where 25 years represents one full generation) is positive; and (2) the 10 downlisting and 9 delisting threats-based criteria are satisfied.

Because a comprehensive approach to Cook Inlet beluga whale recovery is likely to have greater success, rather than focusing on any one type of action, the recovery actions in the Recovery Plan include research, management, monitoring, and education/outreach efforts. When determining threats-based recovery actions, we aimed to improve understanding of those threats and their

population-level consequences; and to improve our ability to manage and eliminate or mitigate those threats. In addition to addressing the threats, we recognize the importance of continuously monitoring the Cook Inlet beluga whale population, and have therefore included recovery actions specific to population monitoring goals. There are also actions targeted at incorporating new information into management actions and other elements of the Recovery Plan, and conducting regular reassessments of the status of the Cook Inlet beluga population and each of the threats to its recovery. As the results of research, monitoring, and reassessments become available, we recognize the levels of concern for the threats, as well as the priorities, may change. The Recovery Plan is meant to be adaptive to allow for such changes.

The Recovery Plan also includes estimates of the time and costs required to implement recovery actions. The total time and cost to recovery are very difficult to predict with the current information, and the total cost to recovery will be largely dependent upon the number of recovery actions requiring implementation. Since that cannot be determined prior to implementation of portions of this plan, the total cost presented assumes implementation of all recovery actions. As recovery progresses and we better understand the relationship between discrete threats and population dynamics, it may become apparent that there are some threats or recovery actions that need not be addressed to achieve recovery. We therefore expect that the total estimated cost to achieve recovery presented in the Recovery Plan is high.

It is expected that recovery may take at least two generations (50 years). If every identified recovery action were implemented and if recovery plan implementation lasted for 50 years, then the estimated cost of implementing this entire recovery program would be approximately $76.8 million. Any projections of total costs over the full recovery period are likely to be imprecise, and the cost estimates do not imply that appropriate levels of funding will necessarily be available for all Cook Inlet beluga whale recovery tasks. We note that recovery plans are guidance and planning documents only, and the identification of an action to be implemented by any public or private party does not create a legal obligation beyond existing legal requirements.

Conclusion

NMFS has reviewed the Recovery Plan for compliance with the requirements of ESA section 4(f), determined that it incorporates the required elements, and is therefore adopting the Recovery Plan for Cook Inlet beluga whales.

Authority: 16 U.S.C. 1531 *et seq.*

Dated: December 29, 2016.

Angela Somma,

Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2016–31877 Filed 1–4–17; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF DEFENSE

Department of the Army

[Docket ID: USA–2016–HQ–0040]

Proposed Collection; Comment Request

AGENCY: Office of Administrative Assistant to the Secretary of the Army, DoD.

ACTION: Notice.

SUMMARY: In compliance with the *Paperwork Reduction Act of 1995,* the Office of Administrative Assistant to the Secretary of the Army (OAA–RPA) announces a proposed public information collection and seeks public comment on the provisions thereof. Comments are invited on: Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; the accuracy of the agency's estimate of the burden of the proposed information collection; ways to enhance the quality, utility, and clarity of the information to be collected; and ways to minimize the burden of the information collection on respondents, including through the use of automated collection techniques or other forms of information technology.

DATES: Consideration will be given to all comments received by March 6, 2017.

ADDRESSES: You may submit comments, identified by docket number and title, by any of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Mail:* Department of Defense, Office of the Deputy Chief Management Officer, Directorate for Oversight and Compliance, Regulatory and Advisory Committee Division, 4800 Mark Center Drive, Mailbox #24, Alexandria, VA 22350–1700.

Instructions: All submissions received must include the agency name, docket number and title for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information.

Any associated form(s) for this collection may be located within this same electronic docket and downloaded for review/testing. Follow the instructions at *http://www.regulations.gov* for submitting comments. Please submit comments on any given form identified by docket number, form number, and title.

FOR FURTHER INFORMATION CONTACT: To request more information on this proposed information collection or to obtain a copy of the proposal and associated collection instruments, please write to the U.S. Army ROTC Cadet Command, ATTN: ATCC–OP–I–S (Timothy Borgerding), 204 1st Cavalry Regiment Road, Building 1002, Fort Knox, KY 40121–2123, or call the Department of the Army Records Clearance Officer at (703) 428–6440.

SUPPLEMENTARY INFORMATION:

Title; Associated Form; and OMB Number: U.S. Army ROTC 4-Year College Scholarship Application; OMB Control Number 0702–0073.

Needs and Uses: This information collection required is necessary to obtain applications for the Army ROTC Program, which produces approximately 80 percent of the newly commissioned officers for the U.S. Army. The Army ROTC Scholarship is an incentive to attract men and women to pursue educational degrees in the academic disciplines required by the Army.

Affected Public: Individuals or households.

Annual Burden Hours: 9,037.

Number of Respondents: 12,049.

Responses per Respondent: 1.

Annual Responses: 12,049.

Average Burden per Response: 45 minutes.

Frequency: Annually.

The applications are available to applicants that have 4-years of college remaining and will be under the age of 31 at the projected time of graduation. Once collection of all required application data is completed, Headquarters, Cadet Command reviews, screens, boards, and selects the scholarship recipients. The collected application data and information provides the basis for the scholarship award.

Dated: December 29, 2016.

Aaron Siegel,

Alternate OSD **Federal Register** *Liaison Officer, Department of Defense.*

[FR Doc. 2016–31934 Filed 1–4–17; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Department of the Army

[Docket ID: USA–2016–HQ–0039]

Proposed Collection; Comment Request

AGENCY: Office of the Surgeon General, United States Medical Command (MEDCOM), DoD.

ACTION: Notice.

SUMMARY: In compliance with the *Paperwork Reduction Act of 1995,* the Office of the Surgeon General, United States Medical Command (MEDCOM) announces a proposed public information collection and seeks public comment on the provisions thereof. Comments are invited on: Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; the accuracy of the agency's estimate of the burden of the proposed information collection; ways to enhance the quality, utility, and clarity of the information to be collected; and ways to minimize the burden of the information collection on respondents, including through the use of automated collection techniques or other forms of information technology.

DATES: Consideration will be given to all comments received by March 6, 2017.

ADDRESSES: You may submit comments, identified by docket number and title, by any of the following methods:

- Federal eRulemaking Portal: *http://www.regulations.gov.* Follow the instructions for submitting comments.
- Mail: Department of Defense, Office of the Deputy Chief Management Officer, Directorate for Oversight and Compliance, Regulatory and Advisory Committee Division, 4800 Mark Center Drive, Mailbox #24, Alexandria, VA 22350–1700.

Instructions: All submissions received must include the agency name, docket number and title for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information. Any associated form(s) for this collection may be located within this same electronic docket and downloaded for review/testing. Follow the instructions at *http://www.regulations.gov* for submitting comments. Please submit comments on any given form identified by docket number, form number, and title.

FOR FURTHER INFORMATION CONTACT: To request more information on this proposed information collection or to obtain a copy of the proposal and associated collection instruments, please write to the Army Public Health Center, Health Promotion and Wellness Directorate, Public Health Assessment Program, 5158 Blackhawk Road, Building E–1570, ATTN: MCHB–IP–HPH, Aberdeen Proving Ground, MD 21010–5403, or email *usarmy.apg.medcom-phc.mbx.hpw-webcontacts@mail.mil.*

SUPPLEMENTARY INFORMATION:

Title; Associated Form; and OMB Number: Heart of Recovery—Military Caregiver Needs Assessment; OMB Control Number 0702–XXXX.

Needs and Uses: The information collection requirement is necessary to support the formation of the United States Army Office of the Surgeon General Military Caregivers Program: Heart of Recovery.

Affected Public: Individuals or Households.

Annual Burden Hours: 2,500.

Number of Respondents: 5,000.

Responses per Respondent: 1.

Annual Responses: 5,000.

Average Burden per Response: 30 minutes.

Frequency: On occasion.

This needs assessment seeks to identify the type(s) of support provided by caregivers; determine the level of burden experience by providing caregiver support; identify the health status of the caregiver population; determine services needed to provide caregiver support; and assess the need for caregiver support training. Respondents are military and/or civilian caregivers who provide unpaid care and assistance for, or manage the care of, someone who is an active-duty military member, Army National Guard, Army Reserve, or veteran that has been diagnosed with a service connected illness, injury, or impairment for which they require outside support. Data will be collected initially through an electronic questionnaire, followed by individual interviews conducted either in-person or telephonically. ''Outside support'' may include help with tasks such as personal care, bathing, dressing, feeding, giving medicines or treatments, help with memory tasks for those identified with brain trauma, assistance in coping with symptoms of post-traumatic stress disorder (PTSD), transportation to doctors' appointments, or arranging for services. Caregivers are not required to be domiciled with the patient receiving care to be eligible for this study. Care and assistance are considered unpaid if they provide care or assistance without the receipt (or expectation of) financial compensation. Compiling, analyzing, and understanding the responses of the various perspectives of patient care is necessary to set a baseline of care and identify core competencies, services, and support required for providers, patients and family members providing, accepting, or supporting injured Army members.

Dated: December 29, 2016.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2016–31929 Filed 1–4–17; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Office of the Secretary

[Docket ID: DOD–2016–OS–0122]

Publication of the Manual for Courts-Martial, United States (2016 ed.) and Updated Supplementary Materials

AGENCY: Joint Service Committee on Military Justice (JSC), Department of Defense.

ACTION: Publication of the Manual for Courts-Martial, United States (2016 ed.) (MCM) and updated Supplementary Materials.

SUMMARY: The JSC announces the publication of the MCM and updates to the Supplementary Materials accompanying the MCM.

DATES: The publication and dispersing of the published MCM is to occur immediately. An electronic version of the MCM is available online at the JSC Web site at *http://jsc.defense.gov.*

FOR FURTHER INFORMATION CONTACT: Major Harlye S.M. Carlton, USMC, (703) 963–9299 or *harlye.carlton@usmc.mil.* The JSC Web site is located at: *http://jsc.defense.gov.*

SUPPLEMENTARY INFORMATION:

The MCM includes updates as a result of Executive Order (EO) 13643 (May 15, 2013); EO 13669 (June 13, 2014); EO 13696 (June 17, 2015); EO 13730 (May 20, 2016); and EO 13740 (September 16, 2016). It also incorporates amendments to the Supplementary Materials

accompanying the MCM as published in the **Federal Register** on July 8, 2015 (80 FR 39077–39089), July 16, 2015 (80 FR 42092–42093), March 22, 2016 (81 FR 15278–15289), June 15, 2016 (81 FR 39035–39039), November 8, 2016 (81 FR 78576–78589), and December 8, 2016 (81 FR 88671). Additionally, it includes Department of Defense Office of General Counsel-approved updates to the following Supplementary Materials:

1. Preface—Lists source documents that amended the MCM and refers individuals to the JSC Web site for source documents.
2. App. 2: Uniform Code of Military Justice—Incorporates amendments contained within the Fiscal Year 2014, 2015, and 2016 National Defense Authorization Acts.
3. App. 3: DoD Directive 5525.7—Updates reference to DoD Instruction 5525.07, ''Implementation of the Memorandum of Understanding (MOU) Between the Departments of Justice (DoJ) and Defense Relating to the Investigation and Prosecution of Certain Crimes,'' June 18, 2007.
4. App. 4: Charge Sheet (DD Form 458)—Now a blank form.
5. App. 5: Preliminary Hearing Officer's Report (DD Form 457)—Includes updated DD form.
6. App. 7: Subpoena (DD Form 453)—Now a blank form.
7. App. 8: Guide for Special Courts-Martial and General Courts-Martial—Minor and stylistic changes.
8. App. 9: Guide for Summary Courts-Martial—Minor and stylistic changes.
9. App. 10: Forms of Findings—Clarifies forms of findings.
10. App. 11: Forms of Sentences—Removes confinement on bread and water or diminished rations as lawful punishment to conform with the Rules for Courts-Martial.
11. App. 12: Maximum Punishment Chart—Reflects changes made by Supplementary Materials accompanying EO 13740 of September 16, 2016.
12. App. 12A: Lesser Included Offenses Chart—New; reflects changes made by Supplementary Materials accompanying EO 13740 of September 16, 2016.
13. App. 13: Guide for Preparation for Record of Trial (Not Verbatim)—Accounts for qualifying victims receiving the record of trial and other minor and stylistic changes.
14. App. 14: Guide for Preparation for Record of Trial (Verbatim)—Accounts for qualifying victims receiving the record of trial and other minor and stylistic changes.
15. App. 15: Record of Trial for Summary Courts-Martial—Now a blank form.
16. App. 16: Forms for Action—Adds qualifications based on changes to Article 60 and R.C.M. 1107.
17. App. 18: Report of Vacation Hearing (DD Form 455)—Removed due to changes to R.C.M. 1109.
18. App. 19: Waiver/Withdrawal of Appellate Rights (Review by Court of Criminal Appeals) (DD Form 2330)—Includes updated DD Form.
19. App. 20: Waiver/Withdrawal of Appellate Rights (Review by Office of Judge Advocate General) (DD Form 2331)—Includes updated DD Form.
20. App. 21: Analysis of RCMs—Modifies introductory language and includes changes based on Supplementary Materials approved since MCM (2012 ed.).
21. App. 22: Analysis of Mil. R. Evid.—Modifies introductory language and includes changes based on Supplementary Materials approved since MCM (2012 ed.).
22. App. 23: Analysis of Punitive Articles—Modifies language based on Supplementary Materials approved since MCM (2012 ed.).
23. App. 25: Historical Executive Orders—Modifies introductory language to reference JSC Web site and adds Executive Orders signed since MCM (2012 ed.).
24. Table of Contents and Index—Makes conforming amendments based on changes to MCM.

Any of the aforementioned changes that did not undergo public comment are administrative, technical, or conforming, and therefore public comment was unnecessary or contrary to the sound administration of justice.

Dated: December 30, 2016.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2016–32010 Filed 1–4–17; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF EDUCATION

[Docket No.: ED–2016–ICCD–0148]

Agency Information Collection Activities; Comment Request; Migrant Education Program Regulations and Certificate of Eligibility

AGENCY: Office of Elementary and Secondary Education (OESE), Department of Education (ED).

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, ED is proposing a revision of an existing information collection.

DATES: Interested persons are invited to submit comments on or before March 6, 2017.

ADDRESSES: To access and review all the documents related to the information collection listed in this notice, please use *http://www.regulations.gov* by searching the Docket ID number ED–2016–ICCD–0148. Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at *http://www.regulations.gov* by selecting the Docket ID number or via postal mail, commercial delivery, or hand delivery. *Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted.* Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance Division, U.S. Department of Education, 400 Maryland Avenue SW., LBJ, Room 226–62, Washington, DC 20202–4537.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, please contact Sarah Martinez, 202–260–1334.

SUPPLEMENTARY INFORMATION: The Department of Education (ED), in accordance with the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3506(c)(2)(A)), provides the general public and Federal agencies with an opportunity to comment on proposed, revised, and continuing collections of information. This helps the Department assess the impact of its information collection requirements and minimize the public's reporting burden. It also helps the public understand the Department's information collection requirements and provide the requested data in the desired format. ED is soliciting comments on the proposed information collection request (ICR) that is described below. The Department of Education is especially interested in public comment addressing the following issues: (1) Is this collection necessary to the proper functions of the Department; (2) will this information be processed and used in a timely manner; (3) is the estimate of burden accurate; (4) how might the Department enhance the quality, utility, and clarity of the information to be collected; and (5) how might the Department minimize the burden of this collection on the respondents, including through the use of information technology. Please note that written comments received in response to this notice will be considered public records.

Title of Collection: Migrant Education Program Regulations and Certificate of Eligibility.

OMB Control Number: 1810–0662.

Type of Review: A revision of an existing information collection

Respondents/Affected Public: Individuals or Households; State, Local, and Tribal Governments.

Total Estimated Number of Annual Responses: 132,846.

Total Estimated Number of Annual Burden Hours: 245,867.

Abstract: This collection of information is necessary to collect information under the Title I, Part C Migrant Education Program (MEP). The MEP is authorized under sections 1301–1309 of Part C of Title I of the Elementary and Secondary Education Act (ESEA), as amended. Regulations for the MEP are found at 34 CFR 200.81–200.89. This information collection covers regulations with information collection requirements which pertain to information that State educational agencies (SEAs) must collect in order to properly administer the MEP: 34 CFR 200.83, 200.84, 200.88, and 200.89(b)-(d). Most provisions do not require SEAs to submit the information collected to the Department, with the exception of the provisions under 34 CFR 200.89(b).

The Department is requesting a revision to this currently approved information collection in order to address changes to MEP eligibility made by the Every Student Succeeds Act (ESSA), which reauthorizes and amends the authorizing statute, ESEA. The changes to MEP eligibility criteria must be reflected on the national Certificate of Eligibility (COE), which is an information collection required by 34 CFR 200.89(c). There was an overall reduction in SEA burden and responses. The reduction in burden and responses was achieved not as a result of deliberate Federal government action, but rather due to decreases in the number of eligible migratory children, the number of SEAs participating in the MEP, and the number of SEAs that the Department expects will be required to implement retrospective re-interviewing. The burden per respondent for the COE as described in 34 CFR 200.89(c) remains the same because although some additional burden is incurred as a result of the added questions (needed to demonstrate compliance with the new statutory language in ESSA), there was an equivalent reduction in burden achieved by the removal of previously included questions (which were needed to demonstrate compliance with the statute, prior to its amendment by ESSA). The annualized burden of 34 CFR 200.83, 200.84, and 200.88 was changed due to those costs occurring at least once per ESEA authorization period of four years (previously six years).

Dated: December 29, 2016.

Tomakie Washington,

Acting Director, Information Collection Clearance Division, Office of the Chief Privacy Officer, Office of Management.

[FR Doc. 2016–31933 Filed 1–4–17; 8:45 am]

BILLING CODE 4000–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RM98–1–000]

Records Governing Off-the-Record Communications' Public Notice

This constitutes notice, in accordance with 18 CFR 385.2201(b), of the receipt of prohibited and exempt off-the-record communications.

Order No. 607 (64 FR 51222, September 22, 1999) requires Commission decisional employees, who make or receive a prohibited or exempt off-the-record communication relevant to the merits of a contested proceeding, to deliver to the Secretary of the Commission, a copy of the communication, if written, or a summary of the substance of any oral communication.

Prohibited communications are included in a public, non-decisional file associated with, but not a part of, the decisional record of the proceeding. Unless the Commission determines that the prohibited communication and any responses thereto should become a part of the decisional record, the prohibited off-the-record communication will not be considered by the Commission in reaching its decision. Parties to a proceeding may seek the opportunity to respond to any facts or contentions made in a prohibited off-the-record communication, and may request that the Commission place the prohibited communication and responses thereto in the decisional record. The Commission will grant such a request only when it determines that fairness so requires. Any person identified below as having made a prohibited off-the-record communication shall serve the document on all parties listed on the official service list for the applicable proceeding in accordance with Rule 2010, 18 CFR 385.2010.

Exempt off-the-record communications are included in the decisional record of the proceeding, unless the communication was with a cooperating agency as described by 40 CFR 1501.6, made under 18 CFR 385.2201(e) (1) (v).

The following is a list of off-the-record communications recently received by the Secretary of the Commission. The communications listed are grouped by docket numbers in ascending order. These filings are available for electronic review at the Commission in the Public Reference Room or may be viewed on the Commission's Web site at *http://www.ferc.gov* using the eLibrary link. Enter the docket number, excluding the last three digits, in the docket number field to access the document. For assistance, please contact FERC Online Support at *FERCOnlineSupport@ferc.gov* or toll free at (866) 208–3676, or for TTY, contact (202) 502–8659.

Docket No.	File date	Presenter or requester
Prohibited:		
1. CP15–554–000	12–12–2016	Vincent Russell.
2. CP15–554–000	12–12–2016	Eva Cosgrove.
3. CP15–500–000	12–12–2016	Eddy N.
4. CP15–554–000	12–13–2016	Vincent Russell.
5. CP15–17–000	12–19–2016	Mass Mailing.[1]
6. CP15–17–000	12–20–2016	Private Citizen.
7. CP16–10–000	12–23–2016	Caleb Laieski.
Exempt:		
1. CP15–558–000	12–12–2016	Delaware Township, New Jersey, Mayor Susan Lockwood.

Docket No.	File date	Presenter or requester
2. ER17–217–000	12–12–2016	U.S. House Representative Frank Pallone, Jr.
3. CP14–96–000	12–13–2016	U.S. Senator Elizabeth Warren.
4. CP16–10–000	12–13–2016	U.S. Senator Bill Nelson.
5. ER17–217–000	12–14–2016	U.S. House Representative Frank Pallone, Jr.
6. CP16–454–000, CP16–455–000	12–19–2016	FERC Staff.[2]
7. CP15–138–000	12–20–2016	State of Pennsylvania House Representative Bryan Cutler.
8. CP15–138–000	12–20–2016	State of Pennsylvania House Representative Bryan Cutler.
9. CP15–138–000	12–20–2016	State of Pennsylvania House Representative Bryan Cutler.
10. CP15–138–000	12–20–2016	State of Pennsylvania House Representative Bryan Cutler.
11. CP16–10–000	12–22–2016	FERC Staff.[3]

[1] Three letters have been sent to FERC Commissioners and staff under this docket number.
[2] Conference call notes from December 6, 2016 call with Rio Grande LNG, LLC and Rio Bravo Pipeline, LLC.
[3] Memo forwarding letter dated December 21, 2016 from Advisory Council on Historic Preservation.

Dated: December 28, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–32026 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. EL17–29–000]

American Municipal Power, Inc. v. Midcontinent Independent System Operator, Inc.; Notice of Complaint

Take notice that on December 19, 2016, pursuant to Rule 206 of the Federal Energy Regulatory Commission's (Commission) Rules of Practice and Procedure, 18 CFR 385.206 and sections 206 and 309 of the Federal Power Act, (FPA) [1] American Municipal Power, Inc. (AMP or Complainant) filed a formal complaint against Midcontinent Independent System Operator, Inc. (MISO or Respondent) alleging that MISO violated its Open Access Transmission, Energy and Operating Reserve Markets Tariff by improperly charging AMP for certain congestion and scheduling fees associated with the transmission of energy from its facility, as more fully explained in the complaint.

The Complainant certifies that a copies of the complaint were served on the contacts for MISO as listed on the Commission's list of Corporate Officials.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211, 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. The Respondent's answer and all interventions, or protests must be filed on or before the comment date. The Respondent's answer, motions to intervene, and protests must be served on the Complainants.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the ''eFiling'' link at *http://www.ferc.gov.* Persons unable to file electronically should submit an original and 5 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426.

This filing is accessible on-line at *http://www.ferc.gov,* using the ''eLibrary'' link and is available for electronic review in the Commission's Public Reference Room in Washington, DC. There is an ''eSubscription'' link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERCOnlineSupport@ferc.gov,* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Comment Date: 5:00 p.m. Eastern Time on January 18, 2017.

Dated: December 28, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–32020 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

[1] 16 U.S.C. 824(e) and 825(h).

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. PF16–10–000]

WBI Energy Transmission, Inc.; Supplemental Notice of Intent To Prepare an Environmental Assessment for the Planned Valley Expansion Project and Request for Comments on Environmental Issues

On November 23, 2016, the Commission issued a ''Notice of Intent to Prepare an Environmental Assessment for the Planned Valley Expansion Project and Request for Comments on Environmental Issues'' (NOI) and an Errata Notice for the NOI on November 28, 2016. It has come to our attention that the environmental mailing list was not provided copies of the NOI or the Errata Notice; therefore, we are issuing this Supplemental NOI to extend the scoping period and provide additional time for interested parties to file comments on environmental issues.

The staff of the Federal Energy Regulatory Commission (FERC or Commission) will prepare an environmental assessment (EA) that will discuss the environmental impacts of the Valley Expansion Project involving construction and operation of facilities by WBI Energy Transmission, Inc. (WBI Energy) in Clay County, Minnesota and Cass, Burleigh, Stutsman, and Barnes Counties, North Dakota. The Commission will use this EA in its decision-making process to determine whether the project is in the public convenience and necessity.

You can make a difference by providing us with your specific comments or concerns about the project. Your comments should focus on the potential environmental effects, reasonable alternatives, and measures to avoid or lessen environmental impacts. Your input will help the Commission staff determine what issues they need to evaluate in the EA. The NOI identified

December 23, 2016 as the close of the scoping period. Please note that the scoping period is now extended and will close on January 27, 2017.

If you sent comments on this project to the Commission before the opening of this docket on October 17, 2016, you will need to file those comments in Docket No. PF16–10–000 to ensure they are considered as part of this proceeding.

This notice is being sent to the Commission's current environmental mailing list for this project. State and local government representatives should notify their constituents of this planned project and encourage them to comment on their areas of concern.

If you are a landowner receiving this notice, a pipeline company representative may contact you about the acquisition of an easement to construct, operate, and maintain the planned facilities. The company would seek to negotiate a mutually acceptable agreement. However, if the Commission approves the project, that approval conveys with it the right of eminent domain. Therefore, if easement negotiations fail to produce an agreement, the pipeline company could initiate condemnation proceedings where compensation would be determined in accordance with state law.

A fact sheet prepared by the FERC entitled ''An Interstate Natural Gas Facility On My Land? What Do I Need To Know?'' is available for viewing on the FERC Web site (*www.ferc.gov*). This fact sheet addresses a number of typically asked questions, including the use of eminent domain and how to participate in the Commission's proceedings.

Public Participation

For your convenience, there are three methods you can use to submit your comments to the Commission. The Commission encourages electronic filing of comments and has expert staff available to assist you at (202) 502–8258 or *efiling@ferc.gov.* Please carefully follow these instructions so that your comments are properly recorded.

(1) You can file your comments electronically using the *eComment* feature on the Commission's Web site (*www.ferc.gov*) under the link to *Documents and Filings.* This is an easy method for submitting brief, text-only comments on a project;

(2) You can file your comments electronically by using the *eFiling* feature on the Commission's Web site (*www.ferc.gov*) under the link to *Documents and Filings.* With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on ''*eRegister.*'' If you are filing a comment on a particular project, please select ''Comment on a Filing'' as the filing type; or

(3) You can file a paper copy of your comments by mailing them to the following address. Be sure to reference the project docket number (PF16–10–000) with your submission: Kimberly D. Bose, Secretary, Federal Energy Regulatory Commission, 888 First Street NE., Room 1A, Washington, DC 20426.

Summary of the Planned Project

WBI Energy plans to construct 38 miles of new 16-inch-diameter pipeline between Mapleton, North Dakota and Felton, Minnesota. WBI Energy also plans to construct a new 2,600-horsepower electric-driven compressor station in Cass County, North Dakota, farm taps, valve settings, and ancillary facilities. Additionally, WBI Energy plans to replace two existing town border station delivery points and construct one regulator station in Burleigh, Stutsman, and Barnes Counties, North Dakota in order to increase in the maximum allowable operating pressure of a portion of its Line Section 24. According to WBI Energy, the project would provide an additional 40 million cubic feet per day of firm transportation on its system.

The general location of the project facilities is shown in appendix 1.[1]

Land Requirements for Construction

Construction of the project would affect a total of about 530 acres of land, including the pipeline construction right-of-way, additional temporary workspace, staging areas, temporary and permanent access roads, and aboveground facilities. The total acreage required for operation of the project is approximately 235 acres, including the new permanent pipeline easement, permanent access roads, and permanent aboveground facilities' footprint.

The EA Process

The National Environmental Policy Act (NEPA) requires the Commission to take into account the environmental impacts that could result from an action whenever it considers the issuance of a Certificate of Public Convenience and Necessity. NEPA also requires us[2] to discover and address concerns the public may have about proposals. This process is referred to as scoping. The main goal of the scoping process is to focus the analysis in the EA on the important environmental issues. By this notice, the Commission requests public comments on the scope of the issues to address in the EA. We will consider all filed comments during the preparation of the EA.

In the EA, we will discuss impacts that could occur as a result of the construction and operation of the planned project under these general headings:

- Geology and soils;
- water resources, fisheries, and wetlands;
- vegetation and wildlife;
- endangered and threatened species;
- cultural resources;
- socioeconomics;
- land use;
- air quality and noise;
- public safety; and
- cumulative impacts.

We will also evaluate possible alternatives to the planned project or portions of the project, and make recommendations on how to lessen or avoid impacts on the various resource areas.

Although no formal application has been filed, we have already initiated our NEPA review under the Commission's pre-filing process. The purpose of the pre-filing process is to encourage early involvement of interested stakeholders and to identify and resolve issues before the FERC receives an application. As part of our pre-filing review, we have begun to contact some federal and state agencies to discuss their involvement in the scoping process and the preparation of the EA.

The EA will present our independent analysis of the issues. The EA will be available in the public record through eLibrary. Depending on the comments received during the scoping process, we may also publish and distribute the EA to the public for an allotted comment period. We will consider all comments on the EA before we make our recommendations to the Commission. To ensure we have the opportunity to consider and address your comments, please carefully follow the instructions in the Public Participation section, beginning on page 2.

With this notice, we are asking agencies with jurisdiction by law and/or special expertise with respect to the

[1] The appendices referenced in this notice will not appear in the **Federal Register.** Copies of the appendices were sent to all those receiving this notice in the mail and are available at *www.ferc.gov* using the link called ''eLibrary'' or from the Commission's Public Reference Room, 888 First Street NE., Washington, DC 20426, or call (202) 502–8371. For instructions on connecting to eLibrary, refer to the last page of this notice.

[2] ''We,'' ''us,'' and ''our'' refer to the environmental staff of the Commission's Office of Energy Projects.

environmental issues related to this project to formally cooperate with us in the preparation of the EA.[3] Agencies that would like to request cooperating agency status should follow the instructions for filing comments provided under the Public Participation section of this notice.

Consultations Under Section 106 of the National Historic Preservation Act

In accordance with the Advisory Council on Historic Preservation's implementing regulations for section 106 of the National Historic Preservation Act, we are using this notice to initiate consultation with the applicable State Historic Preservation Offices (SHPO), and to solicit their views and those of other government agencies, interested Indian tribes, and the public on the project's potential effects on historic properties.[4] We will define the project-specific Area of Potential Effects (APE) in consultation with the SHPOs as the project develops. On natural gas facility projects, the APE at a minimum encompasses all areas subject to ground disturbance (examples include construction right-of-way, contractor/pipe storage yards, compressor stations, and access roads). Our EA for this project will document our findings on the impacts on historic properties and summarize the status of consultations under section 106.

Currently Identified Environmental Issues

We have already identified several issues that we think deserve attention based on a preliminary review of the planned facilities and the environmental information provided by WBI Energy. This preliminary list of issues may change based on your comments and our analysis, but currently includes:

- Drain tiles;
- deep topsoil and poor quality subsoils (salinity/sodium or lime);
- prime farm land;
- federally listed species, including the whooping crane, gray wolf, Dakota skipper, northern long-eared bat, western prairie fringed orchid, and the powershiek skipperling;
- cultural resources; and
- crossing methods of the Rush River, Red River of the North, and the Buffalo River.

Environmental Mailing List

The environmental mailing list includes federal, state, and local government representatives and agencies; elected officials; Native American Tribes; other interested parties; and local libraries and newspapers. This list also includes all affected landowners (as defined in the Commission's regulations) who are potential right-of-way grantors, whose property may be used temporarily for project purposes, or who own homes within certain distances of aboveground facilities, and anyone who submits comments on the project. We will update the environmental mailing list as the analysis proceeds to ensure that we send the information related to this environmental review to all individuals, organizations, and government entities interested in and/or potentially affected by the planned project.

If we publish and distribute the EA, copies will be sent to the environmental mailing list for public review and comment. If you would prefer to receive a paper copy of the document instead of the CD version or would like to remove your name from the mailing list, please return the attached Information Request (appendix 2).

Becoming an Intervenor

Once WBI Energy files its application with the Commission, you may want to become an ''intervenor'' which is an official party to the Commission's proceeding. Intervenors play a more formal role in the process and are able to file briefs, appear at hearings, and be heard by the courts if they choose to appeal the Commission's final ruling. An intervenor formally participates in the proceeding by filing a request to intervene. Motions to intervene are more fully described at *http://www.ferc.gov/resources/guides/how-to/intervene.asp.* Instructions for becoming an intervenor are in the ''Document-less Intervention Guide'' under the ''e-filing'' link on the Commission's Web site. Please note that the Commission will not accept requests for intervenor status at this time. You must wait until the Commission receives a formal application for the project.

Additional Information

Additional information about the project is available from the Commission's Office of External Affairs, at (866) 208–FERC, or on the FERC Web site (*www.ferc.gov*) using the eLibrary link. Click on the eLibrary link, click on ''General Search'' and enter the docket number, excluding the last three digits in the Docket Number field (*i.e.,* PF16–10). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at *FercOnlineSupport@ferc.gov* or toll free at (866) 208–3676, or for TTY, contact (202) 502–8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription, which allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to *www.ferc.gov/docs-filing/esubscription.asp.*

Finally, public meetings or site visits will be posted on the Commission's calendar located at *www.ferc.gov/EventCalendar/EventsList.aspx* along with other related information.

Dated: December 28, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–32025 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

[3] The Council on Environmental Quality regulations addressing cooperating agency responsibilities are at Title 40, Code of Federal Regulations, Part 1501.6.

[4] The Advisory Council on Historic Preservation regulations are at Title 36, Code of Federal Regulations, Part 800. Those regulations define historic properties as any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places.

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. EL17–32–000]

Old Dominion Electric Cooperative and Direct Energy Business, LLC on Behalf of Itself and Its Affiliate, Direct Energy Business Marketing, LLC and American Municipal Power, Inc. v. PJM Interconnection, L.L.C.; Notice of Complaint

Take notice that on December 23, 2016, pursuant to sections 206 and 306 of the Federal Power Act, 16 U.S.C. 824e, 825e, and 825h, and Rule 206 of the Federal Energy Regulatory Commission's (Commission) Rules of Practice and Procedure, 18 CFR 385.206, Old Dominion Electric Cooperative (ODEC) and Direct Energy Business, LLC, on behalf of itself and its affiliate, Direct Energy Business Marketing, LLC, and American Municipal Power, Inc. (collectively, Complainants) filed a formal complaint against PJM Interconnection, L.L.C. (PJM or Respondent) alleging, among other things, that certain provisions in the Respondent's Open Access

Transmission Tariff and the Reliability Assurance Agreement among Load Serving Entities in the PJM Region, regarding Seasonal Capacity Performance Resources in the RPM auctions, are no longer just and reasonable, all as more fully explained in the complaint.

Complainants certifies that copies of the complaint were served on the contacts for Respondent as listed on the Commission's list of Corporate Officials.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. The Respondent's answer and all interventions, or protests must be filed on or before the comment date. The Respondent's answer, motions to intervene, and protests must be served on the Complainant.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the ''eFiling'' link at *http://www.ferc.gov.* Persons unable to file electronically should submit an original and 5 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

This filing is accessible on-line at *http://www.ferc.gov,* using the ''eLibrary'' link and is available for review in the Commission's Public Reference Room in Washington, DC. There is an ''eSubscription'' link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERC OnlineSupport@ferc.gov,* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Comment Date: 5:00 p.m. Eastern Time on January 18, 2017.

Dated: December 28, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–32023 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. EL17–31–000]

Northern Illinois Municipal Power Agency v. PJM Interconnection, L.L.C.; Notice of Complaint

Take notice that on December 21, 2016, pursuant to sections 206, 306, and 309 of the Federal Power Act, 16 U.S.C. 824e, 825e, and 825h, and Rules 206 and 212 of the Federal Energy Regulatory Commission's (Commission) Rules of Practice and Procedure, 18 CFR 385.206 and 385.212, Northern Illinois Municipal Power Agency (Complainant) filed a formal complaint against PJM Interconnection, L.L.C. (Respondent) alleging that Respondent is assessing duplicative congestion charges for pseudo-tied resources located in the adjoining balancing area of the Midcontinent Independent System Operator, Inc., all as more fully explained in the complaint.

Complainant certify that copies of the complaint were served on the contacts for Respondent, as listed on the Commission's list of Corporate Officials.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. The Respondent's answer and all interventions, or protests must be filed on or before the comment date. The Respondent's answer, motions to intervene, and protests must be served on the Complainant.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the ''eFiling'' link at *http://www.ferc.gov.* Persons unable to file electronically should submit an original and 5 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

This filing is accessible on-line at *http://www.ferc.gov,* using the ''eLibrary'' link and is available for review in the Commission's Public Reference Room in Washington, DC. There is an ''eSubscription'' link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERCOnlineSupport@ferc.gov,* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Comment Date: 5:00 p.m. Eastern Time on January 10, 2017.

Dated: December 28, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–32022 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

Combined Notice of Filings #1

Take notice that the Commission received the following electric corporate filings:

Docket Numbers: EC17–58–000.
Applicants: International Transmission Company.
Description: Application Pursuant to Section 203 of the Federal Power Act to Acquire New Assets of International Transmission Company.
Filed Date: 12/28/16.
Accession Number: 20161228–5204.
Comments Due: 5 p.m. ET 1/18/17.

Take notice that the Commission received the following electric rate filings:

Docket Numbers: ER10–2331–061; ER10–2317–052; ER10–2319–052; ER10–2330–059; ER13–1351–034.
Applicants: J.P. Morgan Ventures Energy Corporation, BE CA LLC, BE Alabama LLC, Florida Power Development LLC, Utility Contract Funding, L.L.C.
Description: Non-Material Change in Status of the J.P. Morgan Sellers.
Filed Date: 12/28/16.
Accession Number: 20161228–5211.
Comments Due: 5 p.m. ET 1/18/17.

Docket Numbers: ER10–2633–029; ER10–2570–029; ER10–2717–029; ER10–3140–029; ER13–55–019.
Applicants: Birchwood Power Partners, L.P., Shady Hills Power Company, L.L.C., EFS Parlin Holdings, LLC, Inland Empire Energy Center, LLC, Homer City Generation, L.P.
Description: Notice of Non-Material Change in Status of the GE Companies.
Filed Date: 12/28/16.
Accession Number: 20161228–5209.
Comments Due: 5 p.m. ET 1/18/17.

Docket Numbers: ER13–1504–003; ER10–2861–002; ER10–2866–002.
Applicants: SWG Arapahoe, LLC, SWG Colorado, LLC, Fountain Valley Power, LLC.

Description: Triennial Market Power Analysis for the Northwest Region of the Southwest Generation Operating Company Sellers.
Filed Date: 12/28/16.
Accession Number: 20161228–5106.
Comments Due: 5 p.m. ET 2/27/17.

Docket Numbers: ER17–75–002.
Applicants: PJM Interconnection, L.L.C.
Description: Tariff Amendment: Request to Hold Proceeding in Abeyance to be effective 12/31/9998.
Filed Date: 12/28/16.
Accession Number: 20161228–5094.
Comments Due: 5 p.m. ET 1/18/17.

Docket Numbers: ER17–692–000.
Applicants: Algonquin Power Sanger LLC.
Description: Baseline eTariff Filing: Application for Market Based Rate to be effective 1/1/2017.
Filed Date: 12/28/16.
Accession Number: 20161228–5161.
Comments Due: 5 p.m. ET 1/18/17.

Docket Numbers: ER17–693–000.
Applicants: Valley Electric Association, Inc.
Description: § 205(d) Rate Filing: Annual TRBA Filing to be effective 1/1/2017.
Filed Date: 12/28/16.
Accession Number: 20161228–5165.
Comments Due: 5 p.m. ET 1/18/17.

Docket Numbers: ER17–694–000.
Applicants: California Independent System Operator Corporation.
Description: § 205(d) Rate Filing: 2016–12–28 Transmission Control Agreement Amendment to be effective 3/1/2017.
Filed Date: 12/28/16.
Accession Number: 20161228–5166.
Comments Due: 5 p.m. ET 1/18/17.

Docket Numbers: ER17–695–000.
Applicants: California Independent System Operator Corporation.
Description: § 205(d) Rate Filing: 2016–12–28 Third Amendment to Valley Electric Transition Agreement to be effective 3/1/2017.
Filed Date: 12/28/16.
Accession Number: 20161228–5167.
Comments Due: 5 p.m. ET 1/18/17.

The filings are accessible in the Commission's eLibrary system by clicking on the links or querying the docket number.

Any person desiring to intervene or protest in any of the above proceedings must file in accordance with Rules 211 and 214 of the Commission's Regulations (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests may be considered, but intervention is necessary to become a party to the proceeding.

eFiling is encouraged. More detailed information relating to filing requirements, interventions, protests, service, and qualifying facilities filings can be found at: *http://www.ferc.gov/docs-filing/efiling/filing-req.pdf.* For other information, call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: December 29, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–32042 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER17–681–000]

Enel Trading North America, Inc.; Supplemental Notice That Initial Market-Based Rate Filing Includes Request for Blanket Section 204 Authorization

This is a supplemental notice in the above-referenced proceeding of Enel Trading North America, Inc.'s application for market-based rate authority, with an accompanying rate tariff, noting that such application includes a request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability.

Any person desiring to intervene or to protest should file with the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Anyone filing a motion to intervene or protest must serve a copy of that document on the Applicant.

Notice is hereby given that the deadline for filing protests with regard to the applicant's request for blanket authorization, under 18 CFR part 34, of future issuances of securities and assumptions of liability, is January 17, 2017.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 5 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

The filings in the above-referenced proceeding are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for electronic review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERCOnlineSupport@ferc.gov.* or call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Dated: December 28, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–32024 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. EL17–30–000]

Nogales Transmission, L.L.C., Nogales Frontier Operations, L.L.C.; Notice of Petition for Declaratory Order

Take notice that on December 21, 2016, pursuant to Rule 207(a)(2) of the Federal Energy Regulatory Commission's (Commission) Rules of Practice and Procedure,[1] Nogales Transmission, L.L.C. (Nogales Transmission) and Nogales Frontier Operations, L.L.C. (Nogales Operations) filed a petition for declaratory order: (1) Finding that Nogales Transmission is a passive entity and therefore not a ''public utility'' under the Federal Power Act, or an ''electric utility company'' under the Public Utility Holding Company Act of 2005; (2) granting Nogales Operations negotiated rate authority; (3) approving Nogales Operations' capacity allocation methodology; and (4) granting certain waivers of Commission regulations, all as more fully explained in the petition.

Any person desiring to intervene or to protest in this proceeding must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests will be considered by the

[1] 18 CFR 385.207(a)(2) (2016).

Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. Such notices, motions, or protests must be filed on or before the comment date. Anyone filing a motion to intervene or protest must serve a copy of that document on the Petitioner.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at *http://www.ferc.gov.* To facilitate electronic service, persons with Internet access who will eFile a document and/or be listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 5 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426.

The filings in the above proceeding are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email *FERCOnlineSupport@ferc.gov.or* call (866) 208–3676 (toll free). For TTY, call (202) 502–8659.

Comment Date: 5:00 p.m. Eastern time on January 20, 2017.

Dated: December 28, 2016.

Nathaniel J. Davis, Sr.,

Deputy Secretary.

[FR Doc. 2016–32021 Filed 1–4–17; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Western Area Power Administration

Washoe Project-Rate Order No. WAPA–176

AGENCY: Western Area Power Administration, DOE.

ACTION: Notice of rate order extending Washoe project, Stampede Division, non-firm power formula rate.

SUMMARY: The Deputy Secretary of Energy extended, on an interim basis, the existing Washoe Project, Stampede Division, Non-Firm Power Formula Rate, effective October 1, 2017, through September 30, 2022. The existing Non-Firm Power Formula Rate Schedule SNF–7 expires on September 30, 2017. The extended formula rate will be in effect on an interim basis until the Federal Energy Regulatory Commission (FERC) approves the extension on a final basis, or until superseded.

DATES: This action is effective October 1, 2017.

FOR FURTHER INFORMATION CONTACT: Mr. Subhash Paluru, Regional Manager, Sierra Nevada Region, Western Area Power Administration, 114 Parkshore Drive, Folsom, CA 95630–4710, telephone (916) 353–4418, email *paluru@wapa.gov;* or Ms. Regina Rieger, Rates Manager, Sierra Nevada Region, Western Area Power Administration, 114 Parkshore Drive, Folsom, CA 95630–4710, telephone (916) 353–4629, email *SNR-Rates@wapa.gov.*

SUPPLEMENTARY INFORMATION: On September 9, 2016, Western Area Power Administration (WAPA) proposed its intent to seek a five-year formula rate extension and allowed for a 30-day comment period in a Notice published in the **Federal Register**.[1] No comments were received.

By Delegation Order No. 00–037.00B, effective November 19, 2016, the Secretary of Energy delegated: (1) The authority to develop power and transmission rates to the Administrator of WAPA; (2) the authority to confirm, approve, and place such rates into effect on an interim basis to the Deputy Secretary of Energy; and (3) the authority to confirm, approve, and place into effect on a final basis, to remand, or to disapprove such rates to FERC. Federal rules, specifically 10 CFR 903.23(a), govern Department of Energy procedures for this rate extension.

Under Delegation Order No. 00–037.00B and in compliance with 10 CFR part 903, I hereby approve, on an interim basis, Rate Order No. WAPA–176, which extends without adjustment, the existing Washoe Project, Stampede Division, Non-Firm Power Formula Rate, Rate Schedule SNF–7, through September 30, 2022. Rate Schedule SNF–7 will be submitted promptly to FERC for confirmation and approval on a final basis.

[1] *See* 81 FR 62499 (September 9, 2016).

Dated: December 23, 2016.

Elizabeth Sherwood-Randall,

Deputy Secretary of Energy.

Department of Energy

Deputy Secretary

In the Matter of: Western Area Power Administration, Sierra Nevada Region, Extension of the Washoe Project, Stampede Division, Non-Firm Power Formula Rate, Rate Order No. WAPA–176.

Order Extending the Existing Washoe Project, Stampede Division, Non-Firm Power Formula Rate on an Interim Basis

The existing formula rate was established in accordance with Section 302 of the Department of Energy (DOE) Organization Act (42 U.S.C. 7152). This act transferred to and vested in the Secretary of Energy the power marketing functions of the Secretary of the Department of the Interior and the Bureau of Reclamation under the Reclamation Act of 1902 (ch. 1093, 32 Stat. 388), as amended and supplemented by subsequent laws, particularly section 9(c) of the Reclamation Project Act of 1939 (43 U.S.C. 485h(c)), section 5 of the Flood Control Act of 1944 (16 U.S.C. 825s), and other acts that specifically apply to the project involved.

By Delegation Order No. 00–037.00B, effective November 19, 2016, the Secretary of Energy delegated: (1) The authority to develop power and transmission rates to the Administrator of the Western Area Power Administration (WAPA); (2) the authority to confirm, approve, and place such rates into effect on an interim basis to the Deputy Secretary of Energy; and (3) the authority to confirm, approve, and place into effect on a final basis, to remand, or to disapprove such rates to the Federal Energy Regulatory Commission (FERC). Federal rules, specifically 10 CFR 903.23(a), govern Department of Energy procedures for this rate extension.

Background

The existing Washoe Project Non-Firm Power Formula Rate, Rate Schedule SNF–7, expires on September 30, 2017. FERC confirmed and approved Rate Schedule SNF–7, on April 16, 2009,[1] and the subsequent extension on September 5, 2013.[2] WAPA published a notice in the **Federal Register** on September 9, 2016, proposing to further extend Rate Schedule SNF–7 for five

[1] *See U. S. Dept. of Energy, Western Area Power Admin.,* 127 FERC ¶ 62,043 (2009).

[2] *See U. S. Dept. of Energy, Western Area Power Admin.,* 144 FERC ¶ 62,213 (2013).

years, without adjustment.[3] In accordance with 10 CFR 903.23(a), WAPA provided for a consultation and comment period that ended on October 11, 2016. WAPA received no comments.

Discussion

Rate Schedule SNF–7 provides sufficient annual revenue to recover annual expenses, interest, and capital investments, within the cost recovery criteria set forth in DOE Order RA 6120.2. Congress, by legislation, declared all Washoe Project costs to be non-reimbursable except the Stampede Powerplant (Stampede).[4] The average Stampede generation, approximately 10 gigawatt-hours annually, is used principally to provide energy for two Federal fish hatcheries. Since the Washoe Project has no Federally-owned transmission lines, WAPA contracted with Truckee Donner Public Utility District and the City of Fallon (TDPUD/Fallon) to accept Stampede generation and serve project use loads. Energy in excess of project use loads is integrated with the Central Valley Project (CVP) and marketed under the 2004 Power Marketing Plan. Pursuant to Rate Schedule SNF–7, each year, any remaining reimbursable expenses, in excess of the revenue collected under contract, are incorporated into the CVP power revenue requirement. For the proposed extension period, WAPA forecasts the Washoe Project cost to CVP to be approximately $255,000 annually.

Extending Rate Schedule SNF–7 will provide sufficient revenue to recover annual expenses, interest, and capital requirements, thus ensuring project repayment within the cost recovery criteria set forth in DOE Order RA 6120.2.

Order

In view of the foregoing and under the authority delegated to me, I hereby extend, on an interim basis, the existing Washoe Project, Stampede Division, Non-Firm Power Formula Rate, Rate Schedule SNF–7. Rate Order No. WAPA–176 extends, without adjustment, Rate Schedule SNF-7 through September 30, 2022. Rate Schedule SNF–7 shall remain in effect on an interim basis, pending FERC's confirmation and approval of this extension, or substitute formula rate, on a final basis.

Dated: December 23, 2016

Elizabeth Sherwood-Randall,

Deputy Secretary of Energy

[3] *See* 81 FR 62499 (September 9, 2016).

[4] *See* Fallon Paiute Shoshone Indian Tribes Water Rights Settlement Act, Pub. L. No. 101–618, 104 Stat. 3289, 3307 (1990).

Rate Schedule SNF–7

(Supersedes Schedule SNF–6)

United States Department of Energy
Western Area Power Administration

Sierra Nevada Region, Washoe Project, Stampede Division

Non-Firm Power Formula Rate

Effective:

The first day of the first full billing period beginning on or after August 1, 2008, through September 30, 2022, or until superseded by another rate schedule, whichever occurs earlier.

Available:

Within the marketing area served by the Sierra Nevada Region.

Applicable:

To preference customers under the 2004 Power Marketing Plan and the applicable third party(ies) who are under contract (Contractor) with the Western Area Power Administration (WAPA).

Character and Conditions of Service:

Alternating current, 60 hertz, three-phase, delivered and metered at the voltages and points established by contract.

Non-Firm Power Formula Rate:

In order to serve project use loads and effectively market the energy from Stampede, WAPA has contracted with a third party Contractor that provides for a Stampede Energy Exchange Account (SEEA). The SEEA is an annual energy exchange account for Stampede energy. In the SEEA, the revenues from sales (generation revenues) made at the SEEA Rate are reduced by the project use and station service power costs and SEEA administrative costs. WAPA applies the ratio of project use costs to the generation revenue recorded in the SEEA to determine a non-reimbursable percentage. One hundred percent minus this non-reimbursable percentage establishes a reimbursable percentage. This reimbursable percentage is then applied to the appropriate power-related costs to determine the reimbursable costs for repayment. The reimbursable costs are then netted against generation revenues made at the SEEA Rate. As stipulated under the 2004 Power Marketing Plan, any remaining reimbursable costs, to include interest and annual capital costs, are then transferred to the Central Valley Project for incorporation into the CVP Power Revenue Requirement.

The formula rate for Stampede power is:

Stampede Annual Transferred PRR = Stampede Annual PRR—Stampede Revenue

Where:

Stampede Annual Transferred Power Revenue Requirement (PRR) = Stampede Annual PRR as identified as a cost transferred to the CVP.

Stampede Annual PRR = The total PRR for Stampede required to repay all annual costs, including interest, and the investment within the allowable period.

Stampede Revenue = Revenue from applying the SEEA Rate to project generation.

Billing: Billing for the SEEA Rate will be as specified in the service agreement.

Adjustment for Losses: Losses will be accounted for under this rate schedule as stated in the service agreement.

[FR Doc. 2016–31973 Filed 1–4–17; 8:45 am]

BILLING CODE 6450–01–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OW–2015–0056; FRL–9957–69–OW]

National Advisory Council for Environmental Policy and Technology: Assumable Waters Subcommittee; Notice of Public Meeting

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Federal advisory subcommittee meetings.

SUMMARY: Consistent with the Federal Advisory Committee Act, the Environmental Protection Agency (EPA) is giving notice of an upcoming public meeting of the Assumable Waters Subcommittee convened under the National Advisory Council for Environmental Policy and Technology (NACEPT). The Assumable Waters Subcommittee will provide advice and recommendations as to how the EPA can best clarify assumable waters for dredge and fill permit programs pursuant to Clean Water Act section 404(g)(1). The EPA is undertaking this effort to support states and tribes that wish to assume the program. Similar to the parent NACEPT, the subcommittee represents a diversity of interests from academia, industry, non-governmental organizations, and local, State, and tribal governments. Meeting agendas and materials will be posted at *www.epa.gov/cwa-404/assumable-waters-sub-committee*.

DATES: The Assumable Waters Subcommittee will hold a three-day

public meeting January 25th through 27th, 2017, at the Courtyard Arlington Crystal City/Reagan National Airport Hotel. The meeting will be held during the following times:

- January 25th from 9:00 a.m. to 5:00 p.m. EDT
- January 26th from 8:30 a.m. to 5:00 p.m. EDT
- January 27th from 8:30 a.m. to 12:00 p.m. EDT

ADDRESSES: Courtyard Arlington Crystal City/Reagan National Airport Hotel, 2899 Jefferson Davis Highway, Arlington, VA, 22202.

FOR FURTHER INFORMATION CONTACT: Jacob B. Strickler, Acting Designated Federal Officer, via email at: *assumablewaters@epa.gov,* by phone: (202) 564–4692, or via postal service at: U.S. Environmental Protection Agency (MC–2388A), 1200 Pennsylvania Avenue NW., Washington, DC 20460.

SUPPLEMENTARY INFORMATION: Requests to make oral comments or to provide written comments to the Assumable Waters Subcommittee should be sent to Jacob B. Strickler via email at: *assumablewaters@epa.gov* by January 16th, 2017. The meetings are open to the public, with limited phone lines available on a first-come, first-served basis. Members of the public wishing to attend should contact Jacob B. Strickler via email at: *assumablewaters@epa.gov* or by phone at: (202) 564–4692 by January 16th, 2017, so we can ensure adequate phone lines are available. On January 25th and 26th, 2017, public comments will be heard beginning at 3:30 p.m. until 4:00 p.m. EDT or until all comments have been heard.

Meeting Access: The agency will strive to reasonably accommodate individuals with disabilities. Information regarding accessibility and/or accommodations for individuals with disabilities should be directed to Jacob B. Strickler at the email address or phone number listed above. To ensure adequate time for processing, please make requests for accommodations at least 8 days prior to the meeting.

Dated: December 21, 2016.

Benita Best-Wong,

Director, Office of Wetlands, Oceans, and Watersheds.

[FR Doc. 2016–31642 Filed 1–4–17; 8:45 am]

BILLING CODE 6560–50–P

FEDERAL MARITIME COMMISSION

Notice of Agreements Filed

The Commission hereby gives notice of the filing of the following agreements under the Shipping Act of 1984. Interested parties may submit comments on the agreements to the Secretary, Federal Maritime Commission, Washington, DC 20573, within twelve days of the date this notice appears in the **Federal Register**. Copies of the agreements are available through the Commission's Web site (*www.fmc.gov*) or by contacting the Office of Agreements at (202)–523–5793 or *tradeanalysis@fmc.gov.*

Agreement No.: 200233–018.

Title: Lease and Operating Agreement between Philadelphia Regional Port Authority and Astro Holdings, Inc for Packer Avenue Marine Terminal.

Parties: Philadelphia Regional Port Authority and Astro Holdings, Inc.

Filing Party: Denise M. Brumbaugh; Philadelphia Regional Port Authority; 3460 N. Delaware Avenue; Philadelphia, PA 19134.

Synopsis: The amendment updates the specific uses for the facility which are set forth in Section 1.4 of the Lease with the specific cargo categories to be handled at the facility set forth in Exhibit H to the Agreement.

Agreement No.: 201048–009.

Title: Lease and Operating Agreement between Philadelphia Regional Port Authority and Delaware River Stevedores, Inc.

Parties: Philadelphia Regional Port Authority and Delaware River Stevedores, Inc.

Filing Party: Denise M. Brumbaugh; Philadelphia Regional Port Authority; 3460 N. Delaware Avenue; Philadelphia, PA 19134.

Synopsis: The amendment updates the specific uses for the facility which are set forth in Section 1.3 of the Lease with the specific cargo categories to be handled at the facility set forth in Exhibit H to the Agreement.

By Order of the Federal Maritime Commission.

Dated: December 30, 2016.

Rachel E. Dickon,

Assistant Secretary.

[FR Doc. 2016–32018 Filed 1–4–17; 8:45 am]

BILLING CODE 6731–AA–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[60Day–17–1083; Docket No. CDC–2016–0127]

Proposed Data Collections Submitted for Public Comment and Recommendations

AGENCY: Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

SUMMARY: The Centers for Disease Control and Prevention (CDC), as part of its continuing effort to reduce public burden, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995. This notice invites comment on the Evaluation of the National Tobacco Prevention and Control Public Education Campaign (The Campaign). The primary objectives of the Campaign are to encourage smokers to quit smoking and to encourage nonsmokers to communicate with smokers about the dangers of smoking. The goal of this evaluation is to gauge the effectiveness of these efforts.

DATES: Written comments should be received within 60 days of this notice.

ADDRESSES: You may submit comments, identified by Docket No. CDC–2016–0127 by any of the following methods:

- *Federal eRulemaking Portal*: *Regulations.gov*. Follow the instructions for submitting comments.
- *Mail:* Leroy A. Richardson, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE., MS–D74, Atlanta, Georgia 30329.

Instructions: All submissions received must include the agency name and Docket Number. All relevant comments received will be posted without change to *Regulations.gov*, including any personal information provided. For access to the docket to read background documents or comments received, go to *Regulations.gov*.

FOR FURTHER INFORMATION CONTACT: Leroy A. Richardson, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE., MS–D74, Atlanta, Georgia 30329; phone: 404–639–7570.

SUPPLEMENTARY INFORMATION: Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501–3520), Federal agencies must obtain approval from the Office of Management and Budget (OMB) for each

collection of information they conduct or sponsor. In addition, the PRA also requires Federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each new proposed collection, each proposed extension of existing collection of information, and each reinstatement of previously approved information collection before submitting the collection to OMB for approval. To comply with this requirement, we are publishing this notice of a proposed data collection as described below.

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; to develop, acquire, install and utilize technology and systems for the purpose of collecting, validating and verifying information, processing and maintaining information, and disclosing and providing information; to train personnel and to be able to respond to a collection of information, to search data sources, to complete and review the collection of information; and to transmit or otherwise disclose the information.

Proposed Project

Extended Evaluation of the National Tobacco Prevention and Control Public Education Campaign (OMB Control No. 0920–1083, Expires 9/30/2017)—Revision—National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Centers for Disease Control and Prevention (CDC).

Background and Brief Description

In 2012, HHS/CDC launched Phase 1 of the National Tobacco Prevention and Control Public Education Campaign (The Campaign). The primary objectives of The Campaign are to encourage smokers to quit smoking and to encourage nonsmokers to communicate with smokers about the dangers of smoking. To evaluate The Campaign, CDC obtained OMB approval for information collections beginning in 2012 (OMB Control Number 0920–0923). Baseline and follow-up surveys were conducted with both smokers and nonsmokers. In 2013, CDC launched Phase 2 of The Campaign and conducted an additional survey with smokers and one additional survey with nonsmokers, also under OMB Control Number 0920–0923. CDC recently completed a collection of the information needed to evaluate Phase 3 of The Campaign, which launched in early 2014. The evaluation of The Campaign in 2014 consisted of a longitudinal cohort using four waves of online surveys involving smokers and three waves involving nonsmokers to assess their awareness of and reactions to the 2014 advertisements as related to The Campaign's objectives (see previously-approved collection under OMB Control Number 0920–0923, expiration 3/31/2017). The final wave of this data collection effort also served as a pre-campaign baseline for Phase 4 of the campaign in 2015. The CDC subsequently aired Phase 5 of the campaign in 2016. To evaluate Phases 4 and 5, CDC fielded four additional waves of survey data collection. These data collections were fielded from September to November in 2015 and March to June, June to August, and November to December of 2016 (see previously-approved collection under OMB Control Number 0920–1083, expiration 9/30/2017).

New media activities for Phases 6 and 7 of The Campaign are scheduled to launch in early 2017 and early 2018, respectively. To support evaluation of The Campaign through Phases 6 and 7, CDC plans to field five new waves of information collection. During 2017 and 2018, CDC will administer the surveys in English and Spanish. Once enrolled in the first wave of data collection, CDC will re-contact all participants for follow-up at subsequent survey waves.

The sample for the data collection will originate from two sources: (1) An online longitudinal cohort of smokers and nonsmokers, sampled randomly from postal mailing addresses in the United States (address-based sample, or ABS); and (2) the existing GfK KnowledgePanel, an established long-term online panel of U.S. adults. The ABS-sourced longitudinal cohort will consist of smokers and nonsmokers who have not previously participated in any established online panels to reduce potential panel conditioning bias from previous participation. The new cohort will be recruited by GfK, utilizing similar recruitment methods that are used in the recruitment of KnowledgePanel. The GfK KnowledgePanel will be used in combination with the new ABS-sourced cohort to support larger sample sizes that will allow for more in-depth subgroup analysis, which is a key objective for CDC. All online surveys, regardless of sample source, will be conducted via the GfK KnowledgePanel Web portal for self-administered surveys.

Information will be collected through Web surveys to be self-administered on computers in the respondent's home or in another convenient location. Information will be collected about smokers' and nonsmokers' awareness of and exposure to specific campaign advertisements; knowledge, attitudes, beliefs related to smoking and secondhand smoke; and other marketing exposure. The surveys will also measure behaviors related to smoking cessation (among the smokers in the sample) and behaviors related to nonsmokers' encouragement of smokers to quit smoking, recommendations of cessation services, and attitudes about other tobacco and nicotine products.

It is important to evaluate The Campaign in a context that assesses the dynamic nature of tobacco product marketing and uptake of various tobacco products, particularly since these may affect successful cessation rates. Survey instruments may be updated to include new or revised items on relevant topics, including cigars, noncombustible tobacco products, and other emerging trends in tobacco use.

Participation is voluntary and there are no costs to respondents other than their time. The total response burden is estimated at 37,168 hours over two years between June 2017 and December 2018. The total annualized burden hours during this period thus are estimated at 18,584.

ESTIMATED ANNUALIZED BURDEN HOURS

Type of respondent	Form name	Number of respondents	Number of responses per respondent	Average burden per response (in hours)	Total burden (in hours)
General Population	Screening & Consent Questionnaire	25,000	1	5/60	2,084
Adults Smokers and Nonsmokers, ages 18–54, in the United States.	Smoker Survey (Wave A)	6,500	1	30/60	3,250
	Smoker Survey (Wave B)	4,000	1	30/60	2,000
	Smoker Survey (Wave C)	4,000	1	30/60	2,000
	Smoker Survey (Wave D)	4,000	1	30/60	2,000
	Smoker Survey (Wave E)	4,000	1	30/60	2,000
	Nonsmoker Survey (Wave A)	2,500	1	30/60	1,250
	Nonsmoker Survey (Wave B)	2,000	1	30/60	1,000
	Nonsmoker Survey (Wave C)	2,000	1	30/60	1,000
	Nonsmoker Survey (Wave D)	2,000	1	30/60	1,000
	Nonsmoker Survey (Wave E)	2,000	1	30/60	1,000
Total					18,584

Leroy A. Richardson,

Chief, Information Collection Review Office, Office of Scientific Integrity, Office of the Associate Director for Science, Office of the Director, Centers for Disease Control and Prevention.

[FR Doc. 2016–31968 Filed 1–4–17; 8:45 am]

BILLING CODE 4163–18–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[60Day–17–0706; Docket No. CDC–2016–0128]

Proposed Data Collection Submitted for Public Comment and Recommendations

AGENCY: Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS).

ACTION: Notice with comment period.

SUMMARY: The Centers for Disease Control and Prevention (CDC), as part of its continuing effort to reduce public burden and maximize the utility of government information, invites the general public and other Federal agencies to take this opportunity to comment on proposed and/or continuing information collections, as required by the Paperwork Reduction Act of 1995. This notice invites comment on National Program of Cancer Registries Program Evaluation Instrument.

DATES: Written comments must be received on or before March 6, 2017.

ADDRESSES: You may submit comments, identified by Docket No. CDC–2016–0128 by any of the following methods:

- *Federal eRulemaking Portal: Regulations.gov*. Follow the instructions for submitting comments.
- *Mail:* Leroy A. Richardson, Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE., MS–D74, Atlanta, Georgia 30329.

Instructions: All submissions received must include the agency name and Docket Number. All relevant comments received will be posted without change to *Regulations.gov*, including any personal information provided. For access to the docket to read background documents or comments received, go to *Regulations.gov*.

Please note: All public comment should be submitted through the Federal eRulemaking portal (*regulations.gov*) or by U.S. mail to the address listed above.

FOR FURTHER INFORMATION CONTACT: To request more information on the proposed project or to obtain a copy of the information collection plan and instruments, contact the Information Collection Review Office, Centers for Disease Control and Prevention, 1600 Clifton Road NE., MS–D74, Atlanta, Georgia 30329; phone: 404–639–7570; Email: *omb@cdc.gov*.

SUPPLEMENTARY INFORMATION: Under the Paperwork Reduction Act of 1995 (PRA) (44 U.S.C. 3501–3520), Federal agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. In addition, the PRA also requires Federal agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each new proposed collection, each proposed extension of existing collection of information, and each reinstatement of previously approved information collection before submitting the collection to OMB for approval. To comply with this requirement, we are publishing this notice of a proposed data collection as described below.

Comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information shall have practical utility; (b) the accuracy of the agency's estimate of the burden of the proposed collection of information; (c) ways to enhance the quality, utility, and clarity of the information to be collected; (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology; and (e) estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; to develop, acquire, install and utilize technology and systems for the purpose of collecting, validating and verifying information, processing and maintaining information, and disclosing and providing information; to train personnel and to be able to respond to a collection of information, to search data sources, to complete and review the collection of information; and to transmit or otherwise disclose the information.

Proposed Project

National Program of Cancer Registries Program Evaluation Instrument (NPCR–PEI), (OMB Control Number 0920–0706,

expired 05/31/2016)—Reinstatement with Change—National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP), Centers for Disease Control and Prevention (CDC).

Background and Brief Description

CDC is responsible for administering and monitoring the National Program of Cancer Registries (NPCR). The NPCR provides technical assistance and funding and sets program standards to assure that complete local, state, regional, and national cancer incidence data are available for national and state cancer control and prevention activities and health planning activities.

The Program Evaluation Instrument has been used for 24 years to monitor the performance of NPCR grantees in meeting the required Program Standards. In 2009, the frequency of the data collection was reduced from annual to a biennial schedule in odd-numbered years.

CDC currently supports 48 population-based central cancer registries (CCR) in 45 states, one territory, the District of Columbia, and the Pacific Islands. The National Cancer Institute supports the operations of CCRs in the five remaining states.

A new FOA (DP17–1701) will be released during the first quarter of 2017 and a new project period will begin July 1, 2017. DP17–1701 will allow State health departments or their Bona Fide Agents, and U.S. territories that have not received NPCR funding previously to apply. DP17–1701 NPCR eligibility will include the 48 awardees funded under the DP12–1205 FOA and potentially 6 additional State health departments or their Bona Fide Agents, and a combination of U.S. territories as in DP12–1205.

The NPCR is open to the possibility of funding the territories individually in the DP17–1701 FOA. While Pacific Island Jurisdiction (PIJ) is funded under one award in DP12–105, they will have the opportunity to apply as one, individually, or a combination of individual and joint applications.

States that were solely funded by Surveillance, Epidemiology, and End Result (SEER) in previous years can easily respond to the questions in the survey. The information being requested in the NPCR–PEI are either already collected by or are readily available to all CCRs. Thus, the only burden on the CCRs involves the time it takes to enter responses on the web-based NPCR–PEI every other year.

Minor changes to the Program Evaluation Instrument (NPCR–PEI) include removing questions determined to be outdated or inappropriate for this survey, rewording questions for clarity and consolidating a few questions. In addition, questions that showed 100% compliance in 2015 were deleted.

The NCPR–PEI includes questions about the following categories of registry operations: (1) Staffing, (2) legislation, (3) administration, (4) reporting completeness, (5) data exchange, (6) data content and format, (7) data quality assurance, (8) data use, (9) collaborative relationships, (10) advanced activities, and (11) survey feedback.

Examples of information that can be obtained from various questions include, but are not limited to: (1) Number of filled staff full-time positions by position responsibility, (2) revision to cancer reporting legislation, (3) various data quality control activities, (4) data collection activities as they relate to achieving NPCR program standards for data completeness, and (5) whether registry data is being used for comprehensive cancer control programs, needs assessment/program planning, clinical studies, or incidence and mortality estimates.

The NPCR–PEI is needed to receive, process, evaluate, aggregate, and disseminate NPCR program information. The information is used by CDC and the NPCR-funded registries to monitor progress toward meeting established program standards, goals, and objectives; to evaluate various attributes of the registries funded by NPCR; and to respond to data inquiries made by CDC and other agencies of the federal government.

CDC intends to seek a three-year OMB-approval to collect information in the winter of 2017 and 2019. There are no costs to respondents except their time. The estimated annualized burden hours are summarized in the table below.

ESTIMATED ANNUALIZED BURDEN HOURS

Type of respondents	Form name	Number of respondents	Number of responses per respondent	Average burden per response (in hrs.)	Total burden (in hrs.)
NPCR Awardees	PEI	39.5	1	2	79

Leroy A. Richardson,

Chief, Information Collection Review Office, Office of Scientific Integrity, Office of the Associate Director for Science, Office of the Director, Centers for Disease Control and Prevention.

[FR Doc. 2016–31991 Filed 1–4–17; 8:45 am]

BILLING CODE 4163–18–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

[30Day–17–16AWE]

Agency Forms Undergoing Paperwork Reduction Act Review

The Centers for Disease Control and Prevention (CDC) has submitted the following information collection request to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995. The notice for the proposed information collection is published to obtain comments from the public and affected agencies.

Written comments and suggestions from the public and affected agencies concerning the proposed collection of information are encouraged. Your comments should address any of the following: (a) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) Evaluate the accuracy of the agencies estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (c) Enhance the quality, utility, and clarity of the information to be

collected; (d) Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses; and (e) Assess information collection costs.

To request additional information on the proposed project or to obtain a copy of the information collection plan and instruments, call (404) 639–7570 or send an email to *omb@cdc.gov.* Written comments and/or suggestions regarding the items contained in this notice should be directed to the Attention: CDC Desk Officer, Office of Management and Budget, Washington, DC 20503 or by fax to (202) 395–5806. Written comments should be received within 30 days of this notice.

Proposed Project

Information Collection for Tuberculosis Data from Referring Entities to CureTB—Existing Collection in use without an OMB Control Number—National Center for Emerging Zoonotic and Infectious Diseases (NCEZID), Centers for Disease Control and Prevention (CDC).

Background and Brief Description

CDC is assuming the administration of the CureTB program from the San Diego Public Health Department. This transition is occurring because the activities align with a national disease control perspective, CDC can better leverage internal resources and international partnerships with foreign public health authorities, and key CureTB management staff transitioned from San Diego County Public Health to CDC.

CureTB works with domestic and international programs to protect the U.S. public by preventing the global development of drug resistance and reducing disease transmission and importation of infectious TB. These goals are accomplished through CureTB referral and continuity of care services for mobile TB patients.

Lack of treatment adherence and inappropriate selection of medications are prime reasons for the continued emergence and spread of resistant strains. To combat this, CureTB assures patients understand how to remain adherent despite moving between nations and provides information to the health care team that will be continuing care, about each patient's TB strain and tailored medication regimen. CureTB gathers demographic and clinical information for each patient, and connects that individual to care through provision of accurate information about how to locate the correct downstream provider and assurance that real-time information is given directly to medical providers and public health authorities in receiving nations.

The respondents are nurse practitioners, registered nurses, and physicians working for organizations within the United States and other countries who provide diagnostic and treatment services to individuals affected by TB. The organizations are primarily state and local health departments, but include immigration centers, correctional facilities, and foreign national TB programs. Individual TB patients may also be respondents if critical clinical or contact information is missing from their referral and CureTB follows-up with them to fill-in gaps to complete the referral service. All 50 US states and territories may refer TB patients to the CureTB program. To date, CureTB has also received referrals from Mexico and Guatemala.

Registered nurses or nurse practitioners will submit CureTB referral forms as they request referral services. The number of referrals varies widely between respondents.

CDC's CureTB program will also continue working with our public health partners in notifications and referrals for contacts of TB cases. This is a lesser used function of CureTB, but burden is included below. These respondents are registered nurses or nurse practitioners working in health departments.

To ensure adequate referral to treatment occurs, CDC CureTB may need to follow-up with an individual to complete missing data fields concerning clinical or contact information. This is done to ensure continuity of care. Therefore, individuals with TB are also respondents in this information collection

Finally, CDC staff in the CureTB program also contact the new treating physicians to determine patient outcomes using CureTB Clinician Public Health Department Follow-up Script. The physicians are generally contacted every two months over the course of standard six-month TB treatment, for a total of three follow-up contacts per patient.

There are no costs to respondents other than the time required to complete the referral documents and respond to CDC requests for TB patient outcomes. The total burden requested is 558 hours.

ESTIMATED ANNUALIZED BURDEN HOURS

Type of respondents	Form name	Number of respondents	Number of responses per respondent	Average burden per response (in hours)
Registered Nurses/Nurse Practitioners	CureTB Transnational Notification	100	5	30/60
TB patients	CureTB Transnational Notification	100	1	5/60
Registered Nurses/Nurse Practitioners	CureTB Contact/Source Investigation (CI/SI) Notification.	20	5	30/60
TB treating physicians	Clinician Public Health Department Follow-up Script.	500	3	10/60

Leroy A. Richardson,

Chief, Information Collection Review Office, Office of Scientific Integrity, Office of the Associate Director for Science, Office of the Director, Centers for Disease Control and Prevention.

[FR Doc. 2016–31967 Filed 1–4–17; 8:45 am]

BILLING CODE 4163–18–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2016–D–4461]

Draft Guidance for Industry: Study Design Recommendations for Residue Studies in Honey for Establishing Maximum Residue Limits and Withdrawal Periods; Availability

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of availability.

SUMMARY: The Food and Drug Administration (FDA or Agency) is announcing the availability of a draft guidance for industry (GFI) #243 entitled ''Studies to Evaluate the Metabolism and Residue Kinetics of Veterinary Drugs in Food-Producing Species: Study Design Recommendations for Residue Studies in Honey for Establishing MRLs and Withdrawal Periods'' (VICH GL56). This guidance has been developed for veterinary use by the International Cooperation on Harmonisation of Technical Requirements for Registration of Veterinary Medicinal Products (VICH). This VICH guidance document is intended to provide study design recommendations which will facilitate the universal acceptance of the generated residue depletion data to fulfill the national/regional requirements in order to establish appropriate Maximum Residue Limits (MRLs) or other safe limits in honey following the treatment of honeybees with veterinary drug products, or to justify withdrawal periods in honey for registration purposes when an MRL already exists. Use of veterinary drug products in honeybee production is considered as a minor use in minor species in most jurisdictions.

DATES: Although you can comment on any guidance at any time (see 21 CFR 10.115(g)(5)), to ensure that the Agency considers your comment on this draft guidance before it begins work on the final version of the guidance, submit either electronic or written comments on the draft guidance by March 6, 2017.

ADDRESSES: You may submit comments as follows:

Electronic Submissions

Submit electronic comments in the following way:

• *Federal eRulemaking Portal: https://www.regulations.gov.* Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to *https://www.regulations.gov* will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on *https://www.regulations.gov.*

• If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see ''Written/Paper Submissions'' and ''Instructions'').

Written/Paper Submissions

Submit written/paper submissions as follows:

• *Mail/Hand delivery/Courier (for written/paper submissions):* Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

• For written/paper comments submitted to the Division of Dockets Management, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in ''Instructions.''

Instructions: All submissions received must include the Docket No. FDA–2016–D–4461 for ''Studies to Evaluate the Metabolism and Residue Kinetics of Veterinary Drugs in Food-Producing Species: Study Design Recommendations for Residue Studies in Honey for Establishing MRLs and Withdrawal Periods'' (VICH GL56). Received comments will be placed in the docket and, except for those submitted as ''Confidential Submissions,'' publicly viewable at *https://www.regulations.gov* or at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

• Confidential Submissions—To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states ''THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION.'' The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on *https://www.regulations.gov.* Submit both copies to the Division of Dockets Management. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as ''confidential.'' Any information marked as ''confidential'' will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA's posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: *http://www.fda.gov/regulatoryinformation/dockets/default.htm.*

Docket: For access to the docket to read background documents or the electronic and written/paper comments received, go to *https://www.regulations.gov* and insert the docket number, found in brackets in the heading of this document, into the ''Search'' box and follow the prompts and/or go to the Division of Dockets Management, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

Submit written requests for single copies of the guidance to the Policy and Regulations Staff (HFV–6), Center for Veterinary Medicine, Food and Drug Administration, 7519 Standish Pl., Rockville, MD 20855. Send one self-addressed adhesive label to assist that office in processing your requests. See the **SUPPLEMENTARY INFORMATION** section for electronic access to the draft guidance document.

FOR FURTHER INFORMATION CONTACT: Julia Oriani, Center for Veterinary Medicine (HFV–151), Food and Drug Administration, 7500 Standish Pl., Rockville, MD 20855, 240–402–0788, *julia.oriani@fda.hhs.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

FDA is announcing the availability of a draft GFI #243 entitled ''Studies to Evaluate the Metabolism and Residue Kinetics of Veterinary Drugs in Food-Producing Species: Study Design Recommendations for Residue Studies in Honey for Establishing MRLs and Withdrawal Periods'' (VICH GL56). In recent years, many important initiatives have been undertaken by regulatory authorities and industry associations to promote the international harmonization of regulatory

requirements. FDA has participated in efforts to enhance harmonization and has expressed its commitment to seek scientifically based, harmonized technical procedures for the development of pharmaceutical products. One of the goals of harmonization is to identify, and then reduce, differences in technical requirements for drug development among regulatory agencies in different countries.

FDA has actively participated in the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use for several years to develop harmonized technical requirements for the approval of human pharmaceutical and biological products among the European Union, Japan, and the United States. The VICH is a parallel initiative for veterinary medicinal products. The VICH is concerned with developing harmonized technical requirements for the approval of veterinary medicinal products in the European Union, Japan, and the United States, and includes input from both regulatory and industry representatives.

The VICH Steering Committee is composed of member representatives from the European Commission and European Medicines Agency, International Federation for Animal Health—Europe, FDA, the U.S. Department of Agriculture, the U.S. Animal Health Institute, the Japanese Ministry of Agriculture, Forestry, and Fisheries, and the Japanese Veterinary Products Association.

Six observers are eligible to participate in the VICH Steering Committee: One representative from the government of Australia/New Zealand, one representative from the industry in Australia/New Zealand, one representative from the government of Canada, one representative from the industry of Canada, one representative from the government of South Africa, and one representative from the industry of South Africa. The VICH Secretariat, which coordinates the preparation of documentation, is provided by the International Federation for Animal Health.

II. Draft Guidance on Studies To Evaluate the Metabolism and Residue Kinetics of Veterinary Drugs in Food-Producing Species: Study Design Recommendations for Residue Studies in Honey for Establishing MRLs and Withdrawal Periods

The VICH Steering Committee held a meeting in June 2016 and agreed that the draft guidance document entitled ''Studies to Evaluate the Metabolism and Residue Kinetics of Veterinary Drugs in Food-Producing Species: Study Design Recommendations for Residue Studies in Honey for Establishing MRLs and Withdrawal Periods'' (VICH GL56) should be made available for public comment. This draft VICH guidance document is intended to provide study design recommendations which will facilitate the universal acceptance of the generated residue depletion data to fulfill the national/regional requirements in order to establish appropriate MRLs or other safe limits in honey following the treatment of honeybees with veterinary drug products, or to justify withdrawal periods in honey for registration purposes when an MRL already exists. Use of veterinary drug products in honeybee production is considered as a minor use in minor species in most jurisdictions.

FDA and the VICH Expert Working Group will consider comments about the draft guidance document.

III. Significance of Guidance

This level 1 draft guidance, developed under the VICH process, has been revised to conform to FDA's good guidance practices regulation (21 CFR 10.115). For example, the document has been designated ''guidance'' rather than ''guideline.'' In addition, guidance documents do not include mandatory language such as ''shall,'' ''must,'' ''require,'' or ''requirement,'' unless FDA is using these words to describe a statutory or regulatory requirement.

The draft guidance, when finalized, will represent the current thinking of FDA on this topic. It does not establish any rights for any person and is not binding on FDA or the public. You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations.

IV. Paperwork Reduction Act of 1995

This draft guidance refers to previously approved collections of information found in FDA regulations. These collections of information are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Action of 1995 (44 U.S.C. 3501–3520). The collections of information in 21 CFR part 514 have been approved under OMB control number 0910–0032.

V. Electronic Access

Persons with access to the Internet may obtain the draft guidance at either *http://www.fda.gov/AnimalVeterinary/GuidanceComplianceEnforcement/GuidanceforIndustry/default.htm* or *http://www.regulations.gov.*

Dated: December 30, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–31998 Filed 1–4–17; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2016–N–4531]

Emerging Tick-Borne Diseases and Blood Safety; Public Workshop

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of public workshop.

SUMMARY: The Food and Drug Administration (FDA) is announcing a public workshop entitled ''Emerging Tick-Borne Diseases and Blood Safety.'' The purpose of the public workshop is to discuss tick-borne pathogens that continue to emerge as threats to blood safety, the effectiveness of current and potential mitigation strategies, and the general approach to decision making on blood safety interventions. The workshop has been planned in partnership with AABB; America's Blood Centers; National Heart, Lung, and Blood Institute, National Institutes of Health (NIH); the U.S. Department of Defense; and the U.S. Department of Health and Human Services. The workshop will include presentations and panel discussions by experts from academic institutions, industry, and government agencies.

DATES: The public workshop will be held on April 6, 2017, from 8 a.m. to 5:30 p.m. See the **SUPPLEMENTARY INFORMATION** section for registration date and information.

ADDRESSES: The public workshop will be held at the Natcher Auditorium, Natcher Conference Center, Bldg. 45, National Institutes of Health Campus, 9000 Rockville Pike, Bethesda, MD 20892. Entrance for the public workshop participants (non-NIH employees) is through the NIH Gateway Center located adjacent to the Medical Center Metro, where routine security check procedures will be performed. Please visit the following Web site for NIH campus location, parking, security, and travel information *http://www.nih.gov/about/visitor/index.htm.* Please visit the following Web site for information on the Natcher Conference Center: *http://www.genome.gov/11007522.*

FOR FURTHER INFORMATION CONTACT: Kimberly Jones or Pauline Cottrell,

Center for Biologics Evaluation and Research, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 71, Rm. 3128, Silver Spring, MD 20993, *CBERPublicEvents@fda.hhs.gov.* For questions email: *CBERPublicEvents@fda.hhs.gov* (Subject line: Tick-Borne Diseases and Blood Safety Workshop).

SUPPLEMENTARY INFORMATION:

I. Background

The purpose of the public workshop is to discuss tick-borne pathogens that continue to emerge as threats to blood safety, the effectiveness of current and potential mitigation strategies, and the general approach to decision making on blood safety interventions.

II. Topics for Discussion at the Public Workshop

The workshop will include presentations and panel discussions on the following topics: (1) Biology, epidemiology, and clinical burden of *Anaplasma phagocytophilum* (the etiologic agent of human granulocytic anaplasmosis) and other emerging tick-borne agents; (2) the performance characteristics of currently available diagnostic assays for agents of concern; (3) known and potential risks of transfusion transmission posed by emergent tick-borne agents; (4) current and potential mitigation strategies; and (5) considerations in decision making for safety interventions. The day will conclude with a roundtable discussion.

III. Participating in the Public Workshop

Registration: To register for the public workshop, please visit the following Web site at: *https://www.eventbrite.com/e/emerging-tick-borne-diseases-and-blood-safety-public-workshop-tickets-28654127266.* Please provide complete contact information for each attendee, including name, title, affiliation, address, email, and telephone.

Registration is free and based on space availability, with priority given to early registrants. Persons interested in attending this public workshop must register by March 23, 2017. Early registration is recommended because seating is limited. If time and space permit, onsite registration on the day of the public workshop will be provided beginning at 7:30 a.m.

If you need special accommodations due to a disability, please contact Kimberly Jones or Pauline Cottrell by email sent to *CBERPublicEvents@fda.hhs.gov* at least 7 days in advance. Requests for sign language interpretation or Computer Aided Realtime Translation (CART)/captioning should be made 2 weeks in advance of the event, no later than March 23, 2017. A request for either interpreting or captioning is to be sent directly to the FDA Interpreting Services Staff email account: *interpreting.services@oc.fda.gov.*

Transcripts: Please be advised that as soon as a transcript of the public workshop is available, it will be accessible at *https://www.regulations.gov.* It may be viewed at the Division of Dockets Management (HFA–305) Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852. A link to the transcript will also be available on the Internet at *http://www.fda.gov/BiologicsBloodVaccines/NewsEvents/WorkshopsMeetingsConferences/ucm525485.htm.*

Dated: December 30, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–32029 Filed 1–4–17; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2016–D–4098]

Reference Amounts Customarily Consumed: List of Products for Each Product Category; Draft Guidance for Industry; Availability

AGENCY: Food and Drug Administration, HHS.

ACTION: Notification of availability.

SUMMARY: The Food and Drug Administration (FDA or we) is announcing the availability of a draft guidance for industry entitled ''Reference Amounts Customarily Consumed: List of Products for Each Product Category.'' The draft guidance, when finalized, will provide examples of products that belong to product categories included in the tables of Reference Amounts Customarily Consumed (RACCs) per Eating Occasion established in our regulations.

DATES: Although you can comment on any guidance at any time (see 21 CFR 10.115(g)(5)), to ensure that we consider your comment on the draft guidance before we begin work on the final version of the guidance, submit either electronic or written comments on the draft guidance by March 6, 2017.

ADDRESSES: You may submit comments as follows:

Electronic Submissions

Submit electronic comments in the following way:

- *Federal eRulemaking Portal: https://www.regulations.gov.* Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to *https://www.regulations.gov* will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on *https://www.regulations.gov.*
- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see ''Written/Paper Submissions'' and ''Instructions'').

Written/Paper Submissions

Submit written/paper submissions as follows:

- *Mail/Hand delivery/Courier (for written/paper submissions):* Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.
- For written/paper comments submitted to the Division of Dockets Management, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in ''Instructions.''

Instructions: All submissions received must include the Docket No. FDA–2016–D–4098 for ''Reference Amounts Customarily Consumed: List of Products for Each Product Category.'' Received comments will be placed in the docket and, except for those submitted as ''Confidential Submissions,'' publicly viewable at *https://www.regulations.gov* or at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

- Confidential Submissions—To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential

with a heading or cover note that states ''THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION.'' We will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on *https://www.regulations.gov.* Submit both copies to the Division of Dockets Management. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as ''confidential.'' Any information marked as ''confidential'' will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA's posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: *http://www.fda.gov/regulatoryinformation/dockets/default.htm.*

Docket: For access to the docket to read background documents or the electronic and written/paper comments received, go to *https://www.regulations.gov* and insert the docket number, found in brackets in the heading of this document, into the ''Search'' box and follow the prompts and/or go to the Division of Dockets Management, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

Submit written requests for single copies of the draft guidance to the Office of Nutrition and Food Labeling, Center for Food Safety and Applied Nutrition, Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740. Send two self-addressed adhesive labels to assist that office in processing your request. See the **SUPPLEMENTARY INFORMATION** section for electronic access to the draft guidance.

FOR FURTHER INFORMATION CONTACT: Jillonne Kevala, Center for Food Safety and Applied Nutrition, Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740, 240–402–1450.

SUPPLEMENTARY INFORMATION:

I. Background

We are announcing the availability of a draft guidance for industry entitled ''Reference Amounts Customarily Consumed: List of Products for Each Product Category.'' We are issuing the draft guidance consistent with our good guidance practices regulation (21 CFR 10.115). The draft guidance, when finalized, will represent the current thinking of the FDA on which products belong to product categories included in the tables of RACCs per Eating Occasion established in § 101.12(b) (21 CFR 101.12(b)). This draft guidance does not establish any rights for any person and is not binding on FDA or the public. You can use an alternate approach if it satisfies the requirements of the applicable statutes and regulations.

We intend for this draft guidance, when finalized, to help industry comply with the statutory requirement, under section 403(q)(1)(A)(i) of the Federal Food, Drug, and Cosmetic Act (the FD&C Act) (21 U.S.C. 343(q)(1)(A)(i)), that food that is intended for human consumption and offered for sale bear nutrition information that provides a serving size that reflects the amount of food customarily consumed and is expressed in a common household measure that is appropriate to the food. To comply with this requirement, manufacturers must determine and label their food products with the appropriate label serving size based on the amount of the product customarily consumed.

In the **Federal Register** of May 27, 2016, we issued a final rule entitled ''Food Labeling: Serving Sizes of Foods That Can Reasonably Be Consumed At One Eating Occasion; Dual-Column Labeling; Updating, Modifying, and Establishing Certain Reference Amounts Customarily Consumed; Serving Size for Breath Mints; and Technical Amendments'' (81 FR 34000). The final rule amends our regulations in § 101.12(b) to update or modify certain pre-existing RACCs, and to establish RACCs for new product categories.

The draft guidance, when finalized, will help manufacturers identify the appropriate food category to which their product belongs, on which information manufacturers will be able to base the label serving size. The RACCs established in § 101.12(b) are divided into two tables: One for infants and young children 1 through 3 years of age, and another for the general food supply (*i.e.,* individuals four years and older). The draft guidance, when finalized, will provide examples of products that belong to product categories for which a RACC has been established in § 101.12(b). The tables in the draft guidance are not meant to be an all-inclusive list of products that are available on the market for each product category.

II. Electronic Access

Persons with access to the Internet may obtain the draft guidance at either *http://www.fda.gov/FoodGuidances* or *https://www.regulations.gov.* Use the FDA Web site listed in the previous sentence to find the most current version of the guidance.

Dated: December 30, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–32006 Filed 1–4–17; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2016–N–0567]

[Pediatric Advisory Committee; Notice of Meeting; Establishment of a Public Docket; Request for Comments

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of meeting; establishment of a public docket; request for comments.

SUMMARY: The Food and Drug Administration (FDA) announces a forthcoming public advisory committee meeting of the Pediatric Advisory Committee (PAC). The general function of the committee is to provide advice and recommendations to the Agency on FDA's regulatory issues. The meeting will be open to the public. FDA is establishing a docket for public comments.

DATES: The meeting will be held on March 6, 2017, from 8:30 a.m. to 5:30 p.m. and March 7, 2017, from 8:30 a.m. to 12 p.m. The deadline for submitting comments to the public docket is February 17, 2017. Comments received on or before February 17, 2017, will be provided to the committee. Comments received after that date will be taken into consideration by the Agency.

ADDRESSES: The meeting will be held at DoubleTree by Hilton Hotel Washington DC—Silver Spring, 8727 Colesville Rd., Silver Spring, MD 20910. The hotel's telephone number is 301–589–5200. Answers to commonly asked questions including information regarding special accommodations due to a disability, visitor parking, and transportation may be accessed at *http://doubletree3.hilton.com/en/hotels/maryland/doubletree-by-hilton-hotel-washington-dc-silver-spring-DCASSDT/about/amenities.html.*

You may submit comments as follows:

Electronic Submissions

Submit electronic comments in the following way:

- *Federal eRulemaking Portal: https://www.regulations.gov.* Follow the

instructions for submitting comments. Comments submitted electronically, including attachments, to *https://www.regulations.gov* will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on *https://www.regulations.gov.*

• If you want to submit a comment with confidential information that you do not wish to make available to the public, submit the comment as a written/paper submission and in the manner detailed (see ''Written/Paper Submissions'' and ''Instructions'').

Written/Paper Submissions

Submit written/paper submission as follows:

• Mail/Hand delivery/Courier (for written/paper submissions): Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

• For written/paper comments submitted to the Division of Dockets Management, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in ''Instructions.''

Instructions: All submissions received must include the Docket No. FDA–2016–N–0567 for ''Pediatric Advisory Committee; Notice of Meeting; Establishment of a Public Docket; Request for Comments.'' Received comments will be placed in the docket and, except for those submitted as ''Confidential Submissions,'' publicly viewable at *https://www.regulations.gov* or at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

• *Confidential Submissions*—To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states ''THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION.'' The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on *https://www.regulations.gov.* Submit both copies to the Division of Dockets Management. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as ''confidential.'' Any information marked as ''confidential'' will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA's posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: *http://www.fda.gov/regulatoryinformation/dockets/default.htm.*

Docket: For access to the docket to read background documents or the electronic and written/paper comments received, go to *https://www.regulations.gov* and insert the docket number, found in brackets in the heading of this document, into the ''Search'' box and follow the prompts and/or go to the Division of Dockets Management, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

FOR FURTHER INFORMATION CONTACT: Marieann Brill, Office of the Commissioner, Food and Drug Administration, 10903 New Hampshire Ave., Bldg. 32, Rm. 5154, Silver Spring, MD 20993, 240–402–3838, email: *marieann.brill@fda.hhs.gov,* or FDA Advisory Committee Information Line, 1–800–741–8138 (301–443–0572 in the Washington, DC area). A notice in the **Federal Register** about last minute modifications that impact a previously announced advisory committee meeting cannot always be published quickly enough to provide timely notice. Therefore, you should always check the Agency's Web site at *http://www.fda.gov/AdvisoryCommittees/default.htm.* Scroll down to the appropriate advisory committee meeting link, or call the advisory committee information line to learn about possible modifications before coming to the meeting.

SUPPLEMENTARY INFORMATION:

Agenda: The PAC will meet to discuss pediatric-focused safety reviews, as mandated by the Best Pharmaceuticals for Children Act (Pub. L. 107–109) and the Pediatric Research Equity Act (Pub. L. 108–155). Comments about the upcoming March advisory committee meeting should be submitted to Docket No. FDA–2016–N–0567.

On March 6, 2017, the PAC will meet to discuss the following products (listed by FDA Center):

(1) Center for Drug Evaluation and Research (CDER)

a. NITROPRESS (sodium nitroprusside)

b. KUVAN (sapropterin dihydrochloride)

c. TRUVADA (emtricitabine/tenofovir disoproxil fumarate)

FDA will provide the analysis of a possible safety signal regarding the use of the drug product EXJADE (deferasirox) in children with fever and dehydration, which was discussed at the September 2015 PAC meeting. The PAC will also discuss the role of pharmacogenomics in pediatric product development.

On March 7, 2017, the PAC will meet to discuss the following products (listed by FDA Center):

(2) Center for Biologics Evaluation and Research (CBER)

a. EPICEL (cultured epidermal autografts) (humanitarian device exemption (HDE))

b. NOVOEIGHT (Antihemophilic Factor (Recombinant))

c. RIXUBIS Coagulation Factor IX (Recombinant)

(3) Center for Devices and Radiological Health (CDRH)

a. IMPELLA RP SYSTEM (HDE)

b. LIPOSORBER LA–15 SYSTEM (HDE)

c. MEDTRONIC ACTIVA DYSTONIA THERAPY (HDE)

FDA intends to make background material available to the public no later than 2 business days before the meeting. If FDA is unable to post the background material on its Web site prior to the meeting, the background material will be made publicly available at the location of the advisory committee meeting, and the background material will be posted on FDA's Web site after the meeting. Background material will be available at: *http://www.fda.gov/AdvisoryCommittees/Calendar/default.htm.* Scroll down to the appropriate advisory committee meeting link.

Procedure: Interested persons may present data, information, or views, orally or in writing, on issues pending before the committee. Written submissions may be made to the contact person on or before February 27, 2017. Oral presentations from the public will be scheduled on March 6 and 7, 2017, between approximately 9 a.m. and 9:30 a.m. Those individuals interested in making formal oral presentations should notify the contact person and submit a

brief statement of the general nature of the evidence or arguments they wish to present, the names and addresses of proposed participants, and an indication of the approximate time requested to make their presentation on or before February 17, 2017. Time allotted for each presentation may be limited. If the number of registrants requesting to speak is greater than can be reasonably accommodated during the scheduled open public hearing session, FDA may conduct a lottery to determine the speakers for the scheduled open public hearing session. The contact person will notify interested persons regarding their request to speak by February 21, 2017.

Persons attending FDA's advisory committee meetings are advised that the Agency is not responsible for providing access to electrical outlets.

FDA is establishing a docket for public comment on this document. The docket number is FDA–2016–N–0567. The docket will close on February 17, 2017. Comments received on or before February 17, 2017 will be provided to the committee. Comments received after the date will be taken into consideration by the Agency. For press inquiries, please contact the Office of Media Affairs at *fdaoma@fda.hhs.gov* or 301–796–4540.

FDA welcomes the attendance of the public at its advisory committee meetings and will make every effort to accommodate persons with disabilities. If you require accommodations due to a disability, please contact Marieann Brill at least 7 days in advance of the meeting.

FDA is committed to the orderly conduct of its advisory committee meetings. Please visit our Web site at *http://www.fda.gov/AdvisoryCommittees/AboutAdvisoryCommittees/ucm111462.htm* for procedures on public conduct during advisory committee meetings.

Notice of this meeting is given under the Federal Advisory Committee Act (5 U.S.C. app. 2).

Dated: December 30, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–32019 Filed 1–4–17; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2016–D–4414]

Questions and Answers on the Nutrition and Supplement Facts Labels Related to the Compliance Date, Added Sugars, and Declaration of Quantitative Amounts of Vitamins and Minerals; Draft Guidance for Industry; Availability

AGENCY: Food and Drug Administration, HHS.

ACTION: Notification of availability with request for comments.

SUMMARY: The Food and Drug Administration (FDA or we) is announcing the availability of a draft guidance for industry entitled ''Questions and Answers on the Nutrition and Supplement Facts Labels Related to the Compliance Date, Added Sugars, and Declaration of Quantitative Amounts of Vitamins and Minerals.'' The draft guidance, when finalized, will provide questions and answers on topics related to compliance, labeling of added sugars, declaration of quantitative amounts of vitamins and minerals, and format for Nutrition and Supplement Facts labels.

DATES: Although you can comment on any guidance at any time (see 21 CFR 10.115(g)(5)), to ensure that we consider your comment on the draft guidance before we begin work on the final version of the guidance, submit either electronic or written comments on the draft guidance by March 6, 2017.

ADDRESSES: You may submit comments as follows:

Electronic Submissions

Submit electronic comments in the following way:

- *Federal eRulemaking Portal: https://www.regulations.gov.* Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to *https://www.regulations.gov* will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on *https://www.regulations.gov.*
- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see ''Written/Paper Submissions'' and ''Instructions'').

Written/Paper Submissions

Submit written/paper submissions as follows:

- *Mail/Hand delivery/Courier (for written/paper submissions):* Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.
- For written/paper comments submitted to the Division of Dockets Management, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in ''Instructions.''

Instructions: All submissions received must include the Docket No. FDA–2016–D–4414 for ''Questions and Answers on the Nutrition and Supplement Facts Labels Related to the Compliance Date, Added Sugars, and Declaration of Quantitative Amounts of Vitamins and Minerals.'' Received comments will be placed in the docket and, except for those submitted as ''Confidential Submissions,'' publicly viewable at *https://www.regulations.gov* or at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

- Confidential Submissions—To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states ''THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION.'' The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on *https://www.regulations.gov.* Submit both copies to the Division of Dockets Management. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as ''confidential.'' Any information marked as ''confidential''

will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA's posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: *http://www.fda.gov/regulatoryinformation/dockets/default.htm.*

Docket: For access to the docket to read background documents or the electronic and written/paper comments received, go to *https://www.regulations.gov* and insert the docket number, found in brackets in the heading of this document, into the ''Search'' box and follow the prompts and/or go to the Division of Dockets Management, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

Submit written requests for single copies of the draft guidance to the Office of Nutrition and Food Labeling/Nutrition Programs Staff, Center for Food Safety and Applied Nutrition, Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740. Send two self-addressed adhesive labels to assist that office in processing your request. See the **SUPPLEMENTARY INFORMATION** section for electronic access to the draft guidance.

FOR FURTHER INFORMATION CONTACT: Blakeley Fitzpatrick, Center for Food Safety and Applied Nutrition, Food and Drug Administration (HFS–830), 5001 Campus Dr., College Park, MD 20740, 240–402–5429.

SUPPLEMENTARY INFORMATION:

I. Background

We are announcing the availability of a draft guidance for industry entitled ''Questions and Answers on the Nutrition and Supplement Facts Labels Related to the Compliance Date, Added Sugars, and Declaration of Quantitative Amounts of Vitamins and Minerals.'' We are issuing the draft guidance consistent with our good guidance practices regulation (21 CFR 10.115). The draft guidance, when finalized, will represent the current thinking of FDA on this topic. It does not establish any rights for any person and is not binding on FDA or the public. You can use an alternate approach if it satisfies the requirements of the applicable statutes and regulations.

In the **Federal Register** of May 27, 2016, we issued a final rule entitled ''Food Labeling: Revision of the Nutrition and Supplement Facts Labels'' (81 FR 33742). The final rule amends our regulations for the nutrition labeling of conventional foods and dietary supplements to provide updated nutrition information and to improve how the nutrition information is presented to consumers. The final rule provided two compliance dates distinguishing between manufacturers with $10 million or more in annual food sales (July 26, 2018) and manufacturers with less than $10 million in annual food sales (July 26, 2019). The final rule also revised the Nutrition Facts label to replace ''sugars'' with ''total sugars'' and to include the declaration of added sugars. The draft guidance is intended for conventional food and dietary supplement manufacturers and will, when finalized, provide questions and answers on topics related to compliance, labeling of added sugars, declaration of quantitative amounts of vitamins and minerals, and format.

II. Additional Issues for Consideration

We invite interested persons to comment on topics related to compliance, labeling of added sugars, declaration of quantitative amounts of vitamins and minerals, and format. However, we are particularly interested in responses to the following questions:

1. What, if any, concerns are there for manufacturers to use Brix values from 21 CFR 101.30 when calculating the added sugars content of products containing fruit juice concentrates?

2. For purposes of calculating the amount of added sugars, what, if any, concerns are there if we consider that all of the water in a formulation with fruit or vegetable juice concentrate is used to reconstitute the fruit or vegetable juice? To illustrate the issue, assume that fruit juice concentrate is added to a food and that the manufacturer also adds water to the food. We recognize that the water may reconstitute the fruit juice, but also recognize that some portion of the water may have other purposes or affect ingredients other than the fruit juice concentrate. Nevertheless, to calculate the amount of added sugars, we would consider that all of the water goes towards reconstituting the fruit juice.

3. What, if any, concerns are there if we consider that all of the water that has been removed from a product during processing contributes towards the concentration of juice added as an ingredient during the formulation of the product?

When responding to these questions, please explain your reasoning.

III. Paperwork Reduction Act of 1995

This guidance refers to previously approved collections of information found in FDA regulations. These collections of information are subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520). The collections of information in 21 CFR part 101 have been approved under OMB control number 0910–0813.

IV. Electronic Access

Persons with access to the Internet may obtain the draft guidance at either *http://www.fda.gov/FoodGuidances* or *https://www.regulations.gov.* Use the FDA Web site listed in the previous sentence to find the most current version of the guidance.

V. Reference

The following reference is on display in the Division of Dockets Management (see **ADDRESSES**) and is available for viewing by interested persons between 9 a.m. and 4 p.m., Monday through Friday; it are also available electronically at *https://www.regulations.gov.* FDA has verified the Web site address, as of the date this document publishes in the **Federal Register**, but Web sites are subject to change over time.

1. U.S. Department of Health and Human Services. 2015 Dietary Guidelines for Americans. Accessed online at *http://www.health.gov/dietaryguidelines/dga2005/document/default.htm.*

Dated: December 30, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–32005 Filed 1–4–17; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2016–N–0586]

Food and Drug Administration Tribal Consultation Policy; Availability

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of availability.

SUMMARY: The Food and Drug Administration (FDA or we) is announcing the availability of the FDA Tribal Consultation Policy. The purpose of the FDA Tribal Consultation Policy is to further the government-to-government relationship between FDA and American Indian and Alaskan Native Tribes (Indian Tribes) and facilitate tribal consultation with FDA. The FDA Tribal Consultation Policy provides background on FDA's mission and organizational structure and elaborates on the principles and guidelines in the U.S. Department of Health and Human Services (HHS) Tribal Consultation Policy. This policy finalizes the draft FDA Tribal

Consultation Policy issued in February 2016.

ADDRESSES: For access to the docket to read background documents or the electronic and written/paper comments received, go to *https://www.regulations.gov* and insert the docket number, found in brackets in the heading of this document, into the ''Search'' box and follow the prompts and/or go to the Division of Dockets Management, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

FOR FURTHER INFORMATION CONTACT: Sarah Walinsky, Food and Drug Administration, 10903 New Hampshire Ave., Silver Spring, MD 20993, (240) 402–4075.

SUPPLEMENTARY INFORMATION:

I. Background

Under Executive Order 13175 of November 6, 2000, executive departments and Agencies are charged with engaging in regular and meaningful consultation and collaboration with Indian tribal governments in the development of Federal policies that have tribal implications and are responsible for strengthening the government-to-government relationship between the United States and Indian Tribes. The HHS Tribal Consultation Policy, revised on December 14, 2010, further clarifies that each HHS Operating and Staff Division must have an accountable consultation process to ensure meaningful and timely input by tribal officials in the development of policies that have tribal implications. The FDA Tribal Consultation Policy, which finalizes the draft FDA Tribal Consultation Policy issued in February 2016, is based on the HHS Tribal Consultation Policy and includes Agency-specific consultation guidelines that complement the Department-wide efforts.

The purpose of the FDA Tribal Consultation Policy is to further the government-to-government relationship between FDA and Indian Tribes and facilitate tribal consultation with FDA. The policy provides background on FDA's mission and organizational structure and elaborates on the principles and guidelines in the HHS Tribal Consultation Policy. We consulted with Indian Tribes on the FDA Tribal Consultation Policy, which is intended to serve as a platform for the Agency to create consistent and meaningful tribal consultation across FDA Centers and Offices. A copy of the final policy has also been shared with Indian Tribes in a letter to tribal leaders.

II. Electronic Access

Persons with access to the Internet may obtain the document at either *http://www.fda.gov/tribal* or *https://www.regulations.gov.* Use the FDA Web site listed in the previous sentence to find the most current version of the document.

Dated: December 29, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–31951 Filed 1–4–17; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA–2010–N–0118]

Agency Information Collection Activities; Proposed Collection; Comment Request; Prior Notice of Imported Food Under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

SUMMARY: The Food and Drug Administration (FDA or the Agency) is announcing an opportunity for public comment on the proposed collection of certain information by the Agency. Under the Paperwork Reduction Act of 1995 (the PRA), Federal Agencies are required to publish notice in the **Federal Register** concerning each proposed collection of information, including each proposed extension of an existing collection of information, and to allow 60 days for public comment in response to the notice. This notice solicits comments on the information collection provisions of FDA regulations requiring that the Agency receives prior notice before food is imported or offered for import into the United States.

DATES: Submit either electronic or written comments on the collection of information by March 6, 2017.

ADDRESSES: You may submit comments as follows:

Electronic Submissions

Submit electronic comments in the following way:

- *Federal eRulemaking Portal: https://www.regulations.gov.* Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to *https://www.regulations.gov* will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else's Social Security number, or confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on *https://www.regulations.gov.*
- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see ''Written/Paper Submissions'' and ''Instructions'').

Written/Paper Submissions

Submit written/paper submissions as follows:

- *Mail/Hand delivery/Courier (for written/paper submissions):* Division of Dockets Management (HFA–305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.
- For written/paper comments submitted to the Division of Dockets Management, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in ''Instructions.''

Instructions: All submissions received must include the Docket No. FDA–2010–N–0118 for ''Agency Information Collection Activities; Proposed Collection; Comment Request; Prior Notice of Imported Food Under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002.'' Received comments will be placed in the docket and, except for those submitted as ''Confidential Submissions,'' publicly viewable at *https://www.regulations.gov* or at the Division of Dockets Management between 9 a.m. and 4 p.m., Monday through Friday.

- *Confidential Submissions*—To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states ''THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION.'' The Agency will review this copy, including the claimed confidential information, in its consideration of comments. The second copy, which will have the

claimed confidential information redacted/blacked out, will be available for public viewing and posted on *https://www.regulations.gov.* Submit both copies to the Division of Dockets Management. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as ''confidential.'' Any information marked as ''confidential'' will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA's posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at: *http://www.fda.gov/regulatoryinformation/dockets/default.htm.*

Docket: For access to the docket to read background documents or the electronic and written/paper comments received, go to *https://www.regulations.gov* and insert the docket number, found in brackets in the heading of this document, into the ''Search'' box and follow the prompts and/or go to the Division of Dockets Management, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.

FOR FURTHER INFORMATION CONTACT: FDA PRA Staff, Office of Operations, Food and Drug Administration, Three White Flint North, 10A63, 11601 Landsdown St., North Bethesda, MD 20852, *PRAStaff@fda.hhs.gov.*

SUPPLEMENTARY INFORMATION: Under the PRA (44 U.S.C. 3501–3520), Federal Agencies must obtain approval from the Office of Management and Budget (OMB) for each collection of information they conduct or sponsor. ''Collection of information'' is defined in 44 U.S.C. 3502(3) and 5 CFR 1320.3(c) and includes Agency requests or requirements that members of the public submit reports, keep records, or provide information to a third party. Section 3506(c)(2)(A) of the PRA (44 U.S.C. 3506(c)(2)(A)) requires Federal Agencies to provide a 60-day notice in the **Federal Register** concerning each proposed collection of information, including each proposed extension of an existing collection of information, before submitting the collection to OMB for approval. To comply with this requirement, FDA is publishing notice of the proposed collection of information set forth in this document.

With respect to the following collection of information, FDA invites comments on these topics: (1) Whether the proposed collection of information is necessary for the proper performance of FDA's functions, including whether the information will have practical utility; (2) the accuracy of FDA's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used; (3) ways to enhance the quality, utility, and clarity of the information to be collected; and (4) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques, when appropriate, and other forms of information technology.

Prior Notice of Imported Food Under the Public Health Security and Bioterrorism Preparedness and Response Act of 2002—21 CFR 1.278 to 1.285

OMB Control Number 0910–0520—Revision

The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (the Bioterrorism Act) added section 801(m) of the Federal Food, Drug, and Cosmetic Act (FD&C Act) (21 U.S.C. 381(m)), which requires that FDA receives prior notice for food, including food for animals, that is imported or offered for import into the United States. Sections 1.278 to 1.282 of FDA regulations (21 CFR 1.278 to 1.282) set forth the requirements for submitting prior notice; §§ 1.283(d) and 1.285(j) (21 CFR 1.283(d) and 1.285(j)) set forth the procedure for requesting the Agency review after FDA has refused admission of an article of food under section 801(m)(1) of the FD&C Act or placed an article of food under hold under section 801(*l*) of the FD&C Act; and § 1.285(i) sets forth the procedure for post-hold submissions.

Section 304 of the FDA Food Safety Modernization Act (FSMA) (Pub. L. 111–353) amended section 801(m) of the FD&C Act to require a person submitting prior notice of imported food, including food for animals, to report, in addition to other information already required, ''any country to which the article has been refused entry.''

Advance notice of imported food allows FDA, with the support of the U.S. Customs and Border Protection (CBP), to target import inspections more effectively and help protect the nation's food supply against terrorist acts and other public health emergencies. By requiring that a prior notice contain additional information that indicates prior refusals by any country and also identifies the country or countries, the Agency may better identify imported food shipments that may pose safety and security risks to U.S. consumers. This additional knowledge can further help FDA to make better informed decisions in managing the potential risks of imported food shipments into the United States.

Any person with knowledge of the required information may submit prior notice for an article of food. Thus, the respondents to this information collection may include importers, owners, ultimate consignees, shippers, and carriers.

FDA regulations require that prior notice of imported food be submitted electronically using CBP's Automated Broker Interface of the Automated Commercial System (ABI/ACS) (§ 1.280(a)(1)) or the FDA Prior Notice System Interface (PNSI) (Form FDA 3540) (§ 1.280(a)(2)). PNSI is an electronic submission system available on the FDA Industry Systems page at *http://www.access.fda.gov/.* Information the Agency collects in the prior notice submission includes: (1) The submitter and transmitter (if different from the submitter); (2) entry type and CBP identifier; (3) the article of food, including complete FDA product code; (4) the manufacturer, for an article of food no longer in its natural state; (5) the grower, if known, for an article of food that is in its natural state; (6) the FDA Country of Production; (7) the name of any country that has refused entry of the article of food; (8) the shipper, except for food imported by international mail; (9) the country from which the article of food is shipped or, if the food is imported by international mail, the anticipated date of mailing and country from which the food is mailed; (10) the anticipated arrival information or, if the food is imported by international mail, the U.S. recipient; (11) the importer, owner, and ultimate consignee, except for food imported by international mail or transshipped through the United States; (12) the carrier and mode of transportation, except for food imported by international mail; and (13) planned shipment information, except for food imported by international mail (§ 1.281).

Much of the information collected for prior notice is identical to the information collected for FDA importer's entry notice, which has been approved under OMB control number 0910–0046. The information in an importer's entry notice is collected electronically via CBP's ABI/ACS at the same time the respondent files an entry for import with CBP. To avoid double-counting the burden hours already counted in the importer's entry notice information collection, the burden hour analysis in table 1 reflects FDA's estimate of the reduced burden for prior

notice submitted through ABI/ACS in column 6, entitled ''Average Burden per Response.''

In addition to submitting a prior notice, a submitter should cancel a prior notice and must resubmit the information to FDA if information changes after the Agency has confirmed a prior notice submission for review (*e.g.,* if the identity of the manufacturer changes) (§ 1.282). However, changes in the estimated quantity, anticipated arrival information, or planned shipment information do not require resubmission of prior notice after the Agency has confirmed a prior notice submission for review (§ 1.282(a)(1)(i) to (iii)). In the event that FDA refuses admission to an article of food under section 801(m)(1) or the Agency places it under hold under section 801(l) of the FD&C Act, §§ 1.283(d) and 1.285(j) (21 CFR 1.283(d) and 1.285(j)) set forth the procedure for requesting FDA's review and the information required in a request for review. In the event that the Agency places an article of food under hold under § 801(l) of the FD&C Act, § 1.285(i) sets forth the procedure for, and the information to be included in, a post-hold submission.

FDA estimates the burden of this collection of information as follows:

TABLE 1—ESTIMATED ANNUAL REPORTING BURDEN [1]

21 CFR section No.	FDA Form No.	Number of respondents	Number of responses per respondent	Total annual responses	Average burden per response (hours)	Total hours
Prior Notice Submissions						
Prior Notice Submitted Through ABI/ACS						
1.280–1.281	None	1,700	7647	12,999,900	0.167 (10 minutes)	[2] 2,170,983
Prior Notice Submitted Through PNSI						
1.280–1.281	[3] 3540	27,000	70	1,890,000	0.384 (23 minutes)	725,760
New Prior Notice Submissions Subtotal.						2,896,743
Prior Notice Cancellations						
Prior Notice Cancelled Through ABI/ACS						
1.282	3540	7,040	1	7,040	0.25 (15 minutes)	1760
Prior Notice Cancelled Through PNSI						
1.282, 1.283(a)(5)	3540	35,208	1	35,208	0.25 (15 minutes)	8,802
Prior Notice Cancellations Subtotal.						10,562
Prior Notice Requests for Review and Post-Hold Submissions						
1.283(d), 1.285(j),	None	1	1	1	8	8
1.285(i)	None	263	1	263	1	263
Prior Notice Requests for Review and Post-Hold Submissions Subtotal.						271
Total						2,907,576

[1] There are no capital costs or operating and maintenance costs associated with this collection of information.
[2] To avoid double-counting, an estimated 396,416 burden hours already accounted for in the Importer's Entry Notice information collection approved under OMB control number 0910–0046 are not included in this total.
[3] The term ''Form FDA 3540'' refers to the electronic submission system known as PNSI, which is available at *http://www.access.fda.gov.*

This estimate is based on FDA's experience and the average number of prior notice submissions, cancellations, and requests for review received in the past 3 years.

FDA received 10,450,824 prior notices through ABI/ACS during 2014; 11,282,015 during 2015; and 12,153,880 during 2016. Based on this experience, the Agency estimates that approximately 1,700 users of ABI/ACS will submit an average of 7,647 prior notices annually, for a total of 12,999,900 prior notices received annually through ABI/ACS. FDA estimates the reporting burden for a prior notice submitted through ABI/ACS to be 10 minutes, or 0.167 hour, per notice, for a total burden of 2,170,983 hours. This estimate takes into consideration the burden hours already counted in the information collection approval for FDA importer's entry notice (OMB control number 0910–0046), as previously discussed.

FDA received 1,529,110 prior notices through PNSI during 2014; 1,633,567 during 2015; and 1,768,790 during 2016. Based on this experience, the Agency estimates that approximately 27,000 registered users of PNSI will submit an average of 70 prior notices annually, for a total of 1,890,000 prior notices received annually. FDA estimates the reporting burden for a prior notice submitted through PNSI to be 23 minutes, or 0.384 hour, per notice, for a total burden of 725,760 hours.

FDA received 7,265 cancellations of prior notices through ABI/ACS during 2014; 7,910 during 2015; and 5,948 during 2016. Based on this experience, the Agency estimates that approximately 7,040 users of ABI/ACS will submit an average of 1 cancellation annually, for a total of 7,040 cancellations received annually through ABI/ACS. FDA estimates the reporting burden for a cancellation submitted through ABI/ACS to be 15 minutes, or 0.25 hour, per cancellation, for a total burden of 1,760 hours.

FDA received 36,324 cancellations of prior notices through PNSI during 2014; 39,553 during 2015; and 29,743 during 2016. Based on this experience, the Agency estimates that approximately 35,208 registered users of PNSI will submit an average of 1 cancellation annually, for a total of 35,208 cancellations received annually. FDA estimates the reporting burden for a cancellation submitted through PNSI to be 15 minutes, or 0.25 hour, per cancellation, for a total burden of 8,802 hours.

FDA has not received any requests for review under § 1.283(d) or § 1.285(j) in the last 3 years; therefore, the Agency estimates that one or fewer requests for review will be submitted annually. FDA estimates that it will take a requestor about 8 hours to prepare the factual and legal information necessary to prepare a request for review. Thus, the Agency has estimated a total reporting burden of 8 hours.

FDA received 235 post-hold submissions under § 1.285(i) during 2014; 218 during 2015; and 337 during 2016. Based on this experience, the Agency estimates that 263 post-hold submissions under § 1.285(i) will be submitted annually. FDA estimates that it will take about 1 hour to prepare the written notification described in § 1.285(i)(2)(i). Thus, the Agency estimates a total reporting burden of 263 hours.

Dated: December 30, 2016.

Leslie Kux,

Associate Commissioner for Policy.

[FR Doc. 2016–32030 Filed 1–4–17; 8:45 am]

BILLING CODE 4164–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Resources and Services Administration

Agency Information Collection Activities: Submission to OMB for Review and Approval; Public Comment Request; The National Health Service Corps Loan Repayment Program

AGENCY: Health Resources and Services Administration (HRSA), Department of Health and Human Services.

ACTION: Notice.

SUMMARY: In compliance with Section 3507(a)(1)(D) of the Paperwork Reduction Act of 1995, HRSA has submitted an Information Collection Request (ICR) to the Office of Management and Budget (OMB) for review and approval. Comments submitted during the first public review of this ICR will be provided to OMB. OMB will accept further comments from the public during the review and approval period.

DATES: Comments on this ICR should be received no later than February 6, 2017.

ADDRESSES: Submit your comments, including the ICR Title, to the desk officer for HRSA, either by email to *OIRA_submission@omb.eop.gov* or by fax to 202–395–5806.

FOR FURTHER INFORMATION CONTACT: To request a copy of the clearance requests submitted to OMB for review, email the HRSA Information Collection Clearance Officer at *paperwork@hrsa.gov* or call (301) 443–1984.

SUPPLEMENTARY INFORMATION: When submitting comments or requesting information, please include the information request collection title for reference.

Information Collection Request Title: The National Health Service Corps Loan Repayment Program.

OMB No. 0915–0127 Revision.

Abstract: The National Health Service Corps (NHSC) Loan Repayment Program (LRP) was established to assure an adequate supply of trained primary care health professionals to provide services in the neediest Health Professional Shortage Areas (HPSAs) of the United States. Under this program, the Department of Health and Human Services agrees to repay the qualifying educational loans of selected primary care health professionals. In return, the health professionals agree to serve for a specified period of time in an NHSC-approved site located in a federally-designated HPSA approved by the Secretary for LRP participants. The forms used by the LRP include the following: The NHSC LRP Application, the Authorization for Disclosure of Loan Information form, the Privacy Act Release Authorization form, and if applicable, the Verification of Disadvantaged Background form and the Private Practice Option form. The first four of the aforementioned NHSC LRP forms collect information that is needed for selecting participants and repaying qualifying educational loans. The last referenced form, the Private Practice Option Form, is needed to collect information for all participants who have applied for that service option.

NHSC-approved sites are health care facilities that provide comprehensive outpatient, ambulatory, primary health care services to populations residing in HPSAs. Related in-patient services may be provided by NHSC-approved Critical Access Hospitals (CAHs). To become an NHSC-approved site, new sites must submit a Site Application for review and approval. Existing NHSC-approved sites are required to complete a Site Recertification Application to maintain their NHSC-approved status. Both the NHSC Site Application and Site Recertification Application request information on the clinical service site, sponsoring agency, recruitment contact, staffing levels, service users, charges for services, employment policies, and fiscal management capabilities. Assistance in completing these applications may be obtained through the appropriate State Primary Care Offices and HRSA's NHSC program office. The information collected on the applications is used for determining the eligibility of sites for the assignment of NHSC health professionals and to verify the need for NHSC clinicians. NHSC service site approval is valid for 3 years. Sites wishing to remain eligible for the assignment of NHSC providers must submit a Site Recertification Application every 3 years.

The proposed ICR is a revision to OMB control number 0915–0127 (NHSC LRP) by combining previously approved OMB number 0915–0230 (NHSC Site Application and Site Recertification Application forms) and adding a new form to the ICR called the NHSC Comprehensive Behavioral Health Services Checklist.

Need and Proposed Use of the Information: The need and purpose of this information collection is to obtain information that is used to assess an LRP applicant's eligibility and qualifications for the LRP and obtain information for NHSC site applicants. Clinicians interested in participating in the NHSC LRP must submit an application to the NHSC to participate in the program, and health care facilities

located in HPSAs must submit an NHSC Site Application and Site Recertification Application to determine the eligibility of sites to participate in the NHSC as an approved service site. The NHSC LRP participant application asks for personal, professional, and financial information needed to determine the applicant's eligibility to participate in the NHSC LRP. In addition, applicants must provide information regarding the loans for which repayment is being requested. NHSC policy requires behavioral health providers to practice in community-based settings that provide access to comprehensive behavioral health services. Accordingly, for those sites seeking to be assigned behavioral health NHSC participants, additional site information collected from an NHSC Comprehensive Behavioral Health Services Checklist is used. NHSC sites that do not directly offer all required behavioral health services must demonstrate a formal affiliation with a comprehensive, community-based primary behavioral health setting or facility to provide these services.

Likely Respondents: Likely respondents include: Licensed primary care medical, dental, and behavioral health providers who are employed or seeking employment, and are interested in serving underserved populations; health care facilities interested in participating in the NHSC and becoming an NHSC-approved service site; and NHSC sites providing behavioral health care services directly or through a formal affiliation with a comprehensive community-based primary behavioral health setting or facility providing comprehensive behavioral health services.

Burden Statement: Burden in this context means the time expended by persons to generate, maintain, retain, disclose, or provide the information requested. This includes the time needed to review instructions; to develop, acquire, install, and utilize technology and systems for the purpose of collecting, validating and verifying information, processing and maintaining information, and disclosing and providing information; to train personnel and be able to respond to a collection of information; to search data sources; to complete and review the collection of information; and to transmit or otherwise disclose the information. The total annual burden hours estimated for this Information Collection Request are summarized in the table below.

TOTAL ESTIMATED ANNUALIZED BURDEN HOURS

Form name	Number of respondents	Number of responses per respondent	Total responses	Average burden per response (in hours)	Total burden hours
NHSC LRP Application	8,200	1	8,200	1	8,200
Authorization for Disclosure of Loan Information Form	6,500	1	6,500	.10	650
Privacy Act Release Authorization Form	275	1	275	.10	27.5
Verification of Disadvantaged Background Form	600	1	600	.50	300
Private Practice Option Form	300	1	300	.10	30
NHSC Comprehensive Behavioral Health Services Checklist	*4,000	1	4,000	.13	520
NHSC Site Application (including recertification)	*3,700	1	3,700	.5	1,850
Total	19,875		19,875		11,577.50

*The same respondents are completing the NHSC Comprehensive Behavioral Services Checklist and the NHSC Site Application.

HRSA specifically requests comments on (1) the necessity and utility of the proposed information collection for the proper performance of the agency's functions, (2) the accuracy of the estimated burden, (3) ways to enhance the quality, utility, and clarity of the information to be collected, and (4) the use of automated collection techniques or other forms of information technology to minimize the information collection burden.

Amy McNulty,

Deputy Director, Division of the Executive Secretariat.

[FR Doc. 2016–31723 Filed 1–4–17; 8:45 am]

BILLING CODE 4165–15–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Resources and Services Administration

Proposed Changes to the Black Lung Clinics Program for Consideration for the FY 2017 Funding Opportunity Announcement Development

AGENCY: Health Resources and Services Administration (HRSA), Department of Health and Human Services.

ACTION: Response to comments.

SUMMARY: The Federal Office of Rural Health Policy (FORHP) in HRSA published a 30-day public notice in the **Federal Register** on August 22, 2016 soliciting feedback on a range of issues pertaining to the Black Lung Clinics Program (BLCP). In particular, FORHP requested feedback on how to best determine the needs of coal miners and their families, given the available data, and how to better equip future BLCP grantees to meet those needs. This notice responds to the comments received during this 30-day public notice.

ADDRESSES: Further information on the Black Lung clinics program is available at *http://www.hrsa.gov/gethealthcare/conditions/blacklung/.*

FOR FURTHER INFORMATION CONTACT: Allison Hutchings, Program Coordinator, Black Lung Clinics Program, Federal Office of Rural Health Policy, Health Resources and Services Administration, *blacklung@hrsa.gov.*

SUPPLEMENTARY INFORMATION: The Federal Office of Rural Health Policy (FORHP) in HRSA published a 30-day public notice in the **Federal Register** on August 22, 2016 (**Federal Register** volume 81, number 162, pp. 56660–56662) soliciting feedback on a range of issues pertaining to the Black Lung Clinics Program (BLCP). In particular, FORHP requested feedback on how to best determine the needs of coal miners and their families, given the available

data, and how to better equip future BLCP grantees to meet those needs.

Background

The BLCP is authorized by Section 427(a) of the Federal Mine Safety and Health Act of 1977 (30 U.S.C. 937(a)), as amended, and accompanying regulations found at 42 CFR part 55a.

Following the release of the Fiscal Year (FY) 2014 BLCP funding opportunity announcement (FOA), HRSA received feedback on the funding approach used and other elements of the program. On August 22, 2016, through a **Federal Register** Notice (FRN), HRSA announced a 30-day public comment period to solicit input on BLCP and better understand the needs of coal miners and the clinics that serve them. In particular, HRSA received feedback on the following program components in response to the FRN:

- Funding Approach;
- Determining Need;
- Data Collection;
- Black Lung Center of Excellence (BLCE);
- Timeliness and Quality of U.S. Department of Labor (DOL) Exams;
- Grantee Collaboration;
- Pulmonary Rehabilitation; and
- Geographic Boundaries.

HRSA carefully reviewed and considered the comments it received and used them to both guide the development of the FY 2017 BLCP FOA and to inform the broader landscape in which the program operates.

Comments on the Proposed Changes to the Black Lung Clinics Program

HRSA received 17 comments to the FRN, representing 15 black lung clinics; the National Coalition of Black Lung and Respiratory Disease Clinics, Inc.; and attorneys from a law firm that represents claimants in black lung claims. HRSA has synthesized and summarized the comments below.

Funding Approach

Summary of Comments

Commenters provided a variety of input on funding allocations. Some commenters suggested that funding should be prioritized based on the level and quality of services offered at the site. For example, some commenters recommended that funding should be weighted toward sites that can offer all required testing at one location or whose service offerings are more comprehensive, with one commenter stating that funding levels should be based on providing all the services recommended in HRSA's 2002–08 Policy Information Notice entitled ''Black Lung Clinics Program Expectations and Principles of Practice.'' Others indicated that funding should prioritize services that are non-reimbursable, like benefits counseling. Several commenters said the funding tier system instituted in FY 2014 should be eliminated because it limited the clinics' ability to tailor services to meet their patients' needs and imposed standards that were difficult for rural clinics to meet, given workforce shortages and other challenges. Another commenter expressed concerns about the funding cap HRSA instituted on individual applicants. Most of the commenters agreed that funding should be allocated based on several factors, including the number of miners (active and inactive) served, the geographic service area, and/or historical funding amounts. Some commenters thought taking BLCP awardees' historical funding amounts into account was reasonable, while others thought historical funding amounts were irrelevant in a competitive cycle. Still another commenter suggested that HRSA give all BLCP awardees an equal base award amount and then add incremental award amounts based on the number of active and retired coal miners in a service area and the breadth and quality of services that require grant funding.

Response

In developing the new funding approach outlined in the FY 2017 BLCP FOA, HRSA sought to address respondents' concerns regarding the previous three-tiered funding structure and per-applicant cap, while also minimizing service disruption and adhering to statutory requirements.

The FY 2017 BLCP FOA does not include the previous per-applicant cap. Funding amounts are allocated to service areas based on the amount each area received in FY 2016, assuming the same level of appropriation as in the previous year. Each service area represents an area currently covered by a BLCP awardee. Any individual applicant can apply for the full amount awarded to an area, but they can only apply to serve one service area.

HRSA also removed the three-tiered funding structure. Instead, a set of minimum service and staffing requirements for all applicants was instituted. In addition, applicants applying to serve areas in which BLCP awardees are currently providing more advanced levels of service are encouraged to maintain those levels (referred to in the FY 2017 BLCP FOA as ''recommended guidelines'') in order to minimize service disruptions.

However, recognizing that BLCP awardees have developed different approaches to delivering care to coal miners in response to their patients' needs and organizational capacity, applicants may request to be excepted from up to two of the recommended guidelines. The exceptions give BLCP awardees flexibility to tailor their programs according to their patients' needs and organizational capacity.

The FY 2017 BLCP FOA assumes no increases in funding for the BLCP, so each service area is expected to receive the same ratio of funding it received in FY 2016 in order to minimize service disruptions. However, commenters' suggestions for how to allocate funding across applicants will be considered in future grant cycles.

Determining Need

Summary of Comments

Nearly all of the commenters agreed that there are limitations in the data for determining miners' needs for services and some said that the availability of patient-level data would strengthen their ability to determine need. One commenter stated that relying on data from areas with only active mines does not present an accurate picture of need since these data overlook miners with needs in service areas with non-active mines. Another commenter noted that they lack data on the number of disabled or retired miners in their service areas and that a possible solution to this would be to rely on claims data filed with DOL to determine the needs of that specific miner population. Still others recommended that HRSA take into account information available through data sources, research publications, academic medical centers and other government entities; the location of black lung clinics in relation to the populations they serve; miners' employment status; and the existence of coal-fired power plant workers to determine need. Finally, one commenter suggested using a weighted disability index system using age and level of impairment to determine need.

Response

HRSA recognizes that there are many different factors that should to be taken into account when assessing coal miners' needs, as well as challenges given the limited and fragmented data available on U.S. coal miners. As in previous FOAs, HRSA included ''Need'' as a review criterion in the FY 2017 BLCP FOA and applicants are encouraged to utilize a range of local, state, and national resources to describe

the number of coal miners in their service area as well as their health status and unmet health needs. While HRSA cannot implement all of the commenters' suggestions for how to determine need in this grant cycle, it will consider them in future cycles.

Grantee Collaboration

Summary of Comments

Nearly all of the commenters agreed that networking and peer-to-peer training and sharing of best practices are important components of successful program implementation. Most commenters supported a yearly peer-to-peer workshop and also stated that collaboration should continue through existing forums, such as the annual HRSA, Pipestem, and National Coalition of Black Lung and Respiratory Disease Clinics meetings. Commenters noted that it was ''essential'' that HRSA continue to support these trainings and collaboration forums and one stated that BLCP grant funds should be allowed for travel to the National Coalition of Black Lung and Respiratory Disease Clinic's annual educational conference.

Response

HRSA recognizes the important role that educational conferences play in strengthening the quality and breadth of services provided to coal miners. In the FY 2014 BLCP FOA, HRSA placed a restriction on using BLCP grant funds to subsidize attendance to the annual National Coalition of Black Lung and Respiratory Disease Clinics' annual educational conference. The FY 2017 BLCP FOA lifts this restriction, although applicants must justify the reasonableness of their proposed conference attendance and travel budgets and assure compliance with grant guidance related to advocacy activities. However, HRSA retained the restriction on using BLCP grant funds to subsidize membership dues and fees associated with the National Coalition of Black Lung and Respiratory Disease Clinics. Subject to the availability of travel funds and other factors, HRSA will continue to attend and participate in the existing education and collaboration forums.

Data Collection

Summary of Comments

Commenters were in near-universal agreement about the benefits of patient-level data collection and the inadequacies of the current performance measurement system, but some expressed concerns about the burden patient-level data collection would impose on clinics. Commenters noted that data collection methods and databases vary across the grantees, and that some grantees may need more IT support and funding than others to carry out new data collection activities. Others noted the administrative burden of reporting data into more than one database. Some commenters stated that the REDCap database, a patient-level database that has been piloted with a few grantees by the BLCE, was a promising start, and at least one commenter recommended that it be expanded to all grantees as one possible common platform. Other commenters said a patient-level database should be housed in and maintained by HRSA and not by the BLCE.

Response

Patient-level data collection and reporting will benefit the coal miners, clinics, and the broader medical and public health communities by enabling HRSA and BLCP awardees to better assess miners' needs and program impact. Therefore, for the purposes of the FY 2017–2020 grant cycle, HRSA will explore the development of a patient-level database and will work with its federal partners, the BLCE, and BLCP awardees to develop a new set of data measures for the program. By the third year of the grant (July 1, 2019–June 30, 2020), it is anticipated that all BLCP awardees will be expected to collect and report patient-level data to HRSA. In developing these requirements, efforts will be made to minimize administrative and financial burden on BLCP awardees.

BLCE

Summary of Comments

Commenters expressed mixed support for BLCE in its current form. In general, the training modules developed by the BLCE were well received and one commenter stated that they appreciated having training come from the BLCE as opposed to other grantees who may be in direct competition with them for patients. One commenter stated BLCE has not achieved its stated goals and that BLCE funding would be more effective if allocated to the clinics, while others questioned whether BLCE's services were being used or if they were relevant to non-hospital-based clinics. Still others suggested that the BLCE be restructured to encourage contributions from other grantees and that technical assistance around benefits counseling would be beneficial.

Response

HRSA established the BLCE in FY 2014 to provide technical assistance and training to BLCP awardees and to identify and disseminate best practices. HRSA agrees that the role and expectations of the BLCE should be better defined in order to maximize its impact. For the FY 2017–2020 grant cycle, HRSA refined the scope of the BLCE to focus on strengthening the operation of BLCP awardees and their ability to examine and treat respiratory and pulmonary impairments in active and inactive coal miners through improved data collection and analysis and contributing to the body of knowledge on the health status and needs of U.S. coal miners nationally. At the same time, the FY 2017 BLCE FOA allowed applicants to propose additional technical assistance and/or training activities in recognition of the ongoing and evolving need for these initiatives.

Timeliness and Quality of DOL Exams

Summary of Comments

Two commenters agreed with HRSA's proposal to hold 413(b) providers affiliated with FORHP-funded black lung clinics accountable to DOL's standards for medical exam timeliness. Another suggested that DOL issue ''report cards'' to 413(b) providers on timeliness so they can correct course if necessary before HRSA holds them accountable. A few commenters expressed concern that the timeliness requirement could affect the quality of the exam or have other unintended consequences. Regarding the proposal to require clinical personnel to take the DOL-sponsored training modules, some commenters agreed that the proposal was reasonable, while others expressed concern that the few providers performing DOL exams would shy away from participating if they were required to take the modules. One commenter stated that the requirement for BLCP staff to complete the DOL training modules should come from DOL and not HRSA, and another commenter disagreed entirely with the training requirement proposal.

Response

HRSA recognizes the importance of working closely with DOL's Office of Workers' Compensation Programs to ensure that providers performing DOL medical exams adhere to DOL's timeliness and quality standards and goals, while also understanding some of the limitations these providers face. Therefore, the FY 2017 BLCP FOA strongly encourages BLCP awardees performing DOL medical exams onsite to (1) adhere to the performance measures as outlined in DOL-Office of

Workers' Compensation Programs Performance Measures as it relates to the Black Lung Program, (2) to submit documents relevant to active Black Lung benefits claims electronically into Claimant Online Access Link (C.O.A.L.) and (3) to follow other procedures and training related to diagnostic and medical providers. This last point encompasses the learning modules entitled ''Black Lung Disability Evaluation and Claims Training for Medical Examiners'' and available at *https://www.publichealthlearning.com/course/category.php?id=35.* HRSA will continue to work with DOL and BLCP awardees to strengthen this component of the BLCP.

Pulmonary Rehabilitation

Summary of Comments

All of the commenters agreed that onsite pulmonary rehabilitation is a vital service. However, most commenters expressed concerns that this service is not widely available to miners who need it because it is costly to operate, there are low rates of reimbursement, and miners often aren't able to travel to clinics that do offer treatment. Some commenters said that consideration should be given for non-traditional pulmonary treatment programs, such as in-home treatments, and that HRSA should further research the effectiveness of these programs. A few commenters argued that BLCP clinics should collaborate more with hospital-based pulmonary rehabilitation programs in multiple communities to make it more feasible for miners to receive treatment. Nearly all of the commenters expressed concerns that American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) certification is difficult to obtain and financially burdensome to the clinics, and that it is not cost-effective for the clinic to try to meet this standard for additional grant funding.

Response

In the FY 2014 BLCP FOA, BLCP awardees receiving the highest level of funding were required to provide AACVPR-certified pulmonary rehabilitation programs onsite. The FY 2017 BLCP FOA removes this requirement and instead requires all applicants to propose, at a minimum, onsite, contracted, or referral to accredited Phase II or Phase III pulmonary rehab services. BLCP awardees providing AACVPR-certified programs to coal miners may maintain their certification if they choose, but this is no longer a requirement.

Geographic Boundaries

Summary of Comments

A few commenters expressed concern over how HRSA defines the service areas of each clinic. At least two noted that in some cases, coal miners work or reside in closer proximity to clinics in neighboring states than to those within the same state, but that HRSA limits clinics' ability to conduct outreach in other states. Another commenter stated that some clinics provide complementary services in close proximity to one another.

Response

In certain cases, the FY 2017 BLCP FOA allows more than one BLCP awardee to provide services to coal miners in a given county, provided those awardees detail how they will avoid duplicating efforts of other black lung clinics. Applicants may also propose to provide services (including outreach) to coal miners in counties other than the ones listed in the FY 2017 BLCP FOA, including counties in neighboring states, provided that they demonstrate how their services will complement—rather than duplicate—existing efforts in those counties. A coal miner may receive services at a black lung clinic of his or her choosing, regardless of that clinic's location or service area designation.

Conclusion

HRSA considers many of the comments received to be useful and informative to future discussions on how to strengthen the BLCP in future years and appreciates the interest and dedication of the commenters who are committed to serving U.S. coal miners. Any questions or concerns should be directed to *Blacklung@hrsa.gov.*

Diana Espinosa,

Deputy Administrator.

[FR Doc. 2016–32003 Filed 1–4–17; 8:45 am]

BILLING CODE 4165–15–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Office of the Secretary

Delegation of Authority Under Title III, Part D, Section 340B(d)(1)(B)(vi) of the Public Health Service Act (PHSA)

Notice is hereby given that I have delegated to the Inspector General, Office of Inspector General, the authority vested in the Secretary of Health and Human Services under Title III, Part D, Section 340B(d)(1)(B)(vi) of the Public Health Service Act (PHSA), as amended, to impose sanctions in the form of civil monetary penalties against manufacturers that knowingly and intentionally charge a 340B covered entity a price for purchase of a drug that exceeds the maximum applicable ceiling price as defined by section 340B(a)(1) of the PHSA. In accordance with section 340B(d)(1)(B)(vi)(II) of the PHSA, such sanctions shall not exceed $5,000 for each instance of overcharging a 340B covered entity that may have occurred. This authority may be redelegated. This delegation excludes the authority to issue regulations.

I have affirmed and ratified any actions taken by the Inspector General, or subordinates, that involved the exercise of the authority delegated herein prior to the effective date of the delegation.

This delegation became effective upon date of signature.

Authority: 42 U.S.C. 256b(d)(1)(B)(vi)

Sylvia M. Burwell,

Secretary, Department of Health and Human Services.

[FR Doc. 2016–31944 Filed 1–4–17; 8:45 am]

BILLING CODE 4165–15–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Risk, Prevention and Health Behavior Integrated Review Group; Psychosocial Risk and Disease Prevention Study Section.

Date: January 23–24, 2017.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: The Westgate Hotel, 1055 Second Avenue, San Diego, CA 92101.

Contact Person: Stacey FitzSimmons, Ph.D., MPH, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3114,

MSC 7808, Bethesda, MD 20892, (301) 451–9956, *fitzsimmonss@csr.nih.gov*.

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR16–304: Behavioral and Psychological Phenotypes Contributing to Obesity.

Date: January 24, 2017.

Time: 5:30 p.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: The Westgate Hotel, 1055 Second Avenue, San Diego, CA 92101.

Contact Person: Stacey FitzSimmons, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3114, MSC 7808, Bethesda, MD 20892, 301–451–9956, *fitzsimmonss@csr.nih.gov*.

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: December 29, 2016.

Michelle Trout,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016–31919 Filed 1–4–17; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Allergy and Infectious Diseases; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Allergy and Infectious Diseases Special Emphasis Panel; Rapid Assessment of Zika Virus (ZIKV) Complications (R21).

Date: January 31, 2017.

Time: 12:00 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Room 3E61, 5601 Fishers Lane, Rockville, MD 20892 (Telephone Conference Call).

Contact Person: Raymond R. Schleef, Ph.D., Senior Scientific Review Officer, Scientific Review Program, Division of Extramural Activities, Room 3E61, National Institutes of Health/NIAID, 5601 Fishers Lane, MSC 9823, Bethesda, MD 20892–9823, (240) 669–5019, *schleefrr@niaid.nih.gov*.

(Catalogue of Federal Domestic Assistance Program Nos. 93.855, Allergy, Immunology, and Transplantation Research; 93.856, Microbiology and Infectious Diseases Research, National Institutes of Health, HHS)

Dated: December 29, 2016.

Natasha M. Copeland,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016–31985 Filed 1–4–17; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Brain Disorders and Clinical Neuroscience Integrated Review Group; Pathophysiological Basis of Mental Disorders and Addictions Study Section.

Date: February 1–2, 2017.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Residence Inn Bethesda, 7335 Wisconsin Avenue, Bethesda, MD 20814.

Contact Person: Boris P. Sokolov, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5217A, MSC 7846, Bethesda, MD 20892, 301–408–9115, *bsokolov@csr.nih.gov*.

Name of Committee: Immunology Integrated Review Group; Transplantation, Tolerance, and Tumor Immunology Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 1:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Pier 2620 Fishman's Wharf Hotel, 2620 Jones Street, San Francisco, CA 94133.

Contact Person: Jin Huang, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4199, MSC 7812, Bethesda, MD 20892, 301–435–1230, *jh377p@nih.gov*.

Name of Committee: Immunology Integrated Review Group; Hypersensitivity, Autoimmune, and Immune-mediated Diseases Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications

Place: Argonaut Hotel, 495 Jefferson Street, San Francisco, CA 94109.

Contact Person: Deborah Hodge, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4207 MSC 7812, Bethesda, MD 20892, (301) 435–1238, *hodged@mail.nih.gov*.

Name of Committee: Surgical Sciences, Biomedical Imaging and Bioengineering Integrated Review Group; Clinical Molecular Imaging and Probe Development.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 12:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892.

Contact Person: Donald Scott Wright, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5108, MSC 7854, Bethesda, MD 20892, (301) 435–8363, *wrightds@csr.nih.gov*.

Name of Committee: Digestive, Kidney and Urological Systems Integrated Review Group, Clinical, Integrative and Molecular Gastroenterology Study Section.

Date: February 2, 2017.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Lorien Hotel & Spa, 1600 King Street, Alexandria, VA 22314.

Contact Person: Jonathan K. Ivins, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2190, MSC 7850, Bethesda, MD 20892, (301) 594–1245, *ivinsj@csr.nih.gov*.

Name of Committee: Vascular and Hematology Integrated Review Group; Atherosclerosis and Inflammation of the Cardiovascular System Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hilton Long Beach and Executive Center, 701 West Ocean Boulevard, Long Beach, CA 90831.

Contact Person: Natalia Komissarova, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5207, MSC 7846, Bethesda, MD 20892, 301–435–1206, *komissar@mail.nih.gov*.

Name of Committee: Risk, Prevention and Health Behavior Integrated Review Group; Psychosocial Development, Risk and Prevention Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Renaissance Mayflower Hotel, 1127 Connecticut Avenue NW., Washington, DC 20036.

Contact Person: Anna L. Riley, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3114, MSC 7759, Bethesda, MD 20892, 301–435–2889, *rileyann@csr.nih.gov.*

Name of Committee: Integrative, Functional and Cognitive Neuroscience Integrated Review Group; Neuroendocrinology, Neuroimmunology, Rhythms and Sleep Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: The Westin Riverwalk, 420 W Market St., San Antonio, TX 78205.

Contact Person: Michael Selmanoff, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5164, MSC 7844, Bethesda, MD 20892, 301–435–1119, *mselmanoff@csr.nih.gov.*

Name of Committee: Risk, Prevention and Health Behavior Integrated Review Group; Interventions to Prevent and Treat Addictions Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Hotel Palomar, 2121 P Street NW., Washington, DC 20037.

Contact Person: Miriam Mintzer, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3108, Bethesda, MD 20892, (301) 523–0646, *mintzermz@csr.nih.gov.*

Name of Committee: Bioengineering Sciences & Technologies Integrated Review Group; Biodata Management and Analysis Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Bahia Resort Hotel, 998 West Mission Bay Drive, San Diego, CA 92109.

Contact Person: Wenchi Liang, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3150, MSC 7770, Bethesda, MD 20892, 301–435–0681, *liangw3@csr.nih.gov.*

Name of Committee: Biological Chemistry and Macromolecular Biophysics Integrated Review Group; Macromolecular Structure and Function C Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Ritz-Carlton Hotel, 1700 Tysons Boulevard, McLean, VA 22102.

Contact Person: William A. Greenberg, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4168, MSC 7806, Bethesda, MD 20892, (301) 435–1726, *greenbergwa@csr.nih.gov.*

Name of Committee: Musculoskeletal, Oral and Skin Sciences Integrated Review Group; Skeletal Biology Development and Disease Study Section.

Date: February 2–3, 2017.

Time: 8:00 a.m. to 4:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Washington Marriott at Metro Center, 775 12th Street NW., Washington, DC 20005.

Contact Person: Aruna K. Behera, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4211, MSC 7814, Bethesda, MD 20892, 301–435–6809, *beheraak@csr.nih.gov.*

Name of Committee: Population Sciences and Epidemiology Integrated Review Group; Kidney, Nutrition, Obesity and Diabetes Study Section.

Date: February 2–3, 2017.

Time: 8:30 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: Marriott Wardman Park Washington DC Hotel, 2660 Woodley Road, NW., Washington, DC 20008.

Contact Person: Fungai Chanetsa, Ph.D., MPH, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3135, MSC 7770, Bethesda, MD 20892, 301–408–9436, *fungai.chanetsa@nih.hhs.gov.*

Name of Committee: Brain Disorders and Clinical Neuroscience Integrated Review Group; Neural Basis of Psychopathology, Addictions and Sleep Disorders Study Section.

Date: February 2–3, 2017.

Time: 8:30 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: JW Marriott New Orleans, 614 Canal Street, New Orleans, LA 70130.

Contact Person: Julius Cinque, Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5186, MSC 7846, Bethesda, MD 20892, *cinquej@csr.nih.gov.*

Name of Committee: Genes, Genomes, and Genetics Integrated Review Group; Molecular Genetics B Study Section.

Date: February 2–3, 2017.

Time: 10:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Richard A. Currie, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5128, MSC 7840, Bethesda, MD 20892, (301) 435–1219, *currieri@csr.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: December 29, 2016.

Michelle Trout,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016–31920 Filed 1–4–17; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Diabetes and Digestive and Kidney Diseases; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Diabetes and Digestive and Kidney Diseases Special Emphasis Panel; Neurocognitive Complications of Type 1 Diabetes.

Date: January 26, 2017.

Open: 1:30 p.m. to 4:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Two Democracy Plaza, 6707 Democracy Boulevard, Bethesda, MD 20892, (Telephone Conference Call).

Contact Person: Elena Sanovich, Ph.D., Scientific Review Officer, Review Branch, DEA, NIDDK, National Institutes of Health, Room 7351, 6707 Democracy Boulevard, Bethesda, MD 20892–2542, 301–594–8886, *sanoviche@mail.nih.gov.*

Name of Committee: National Institute of Diabetes and Digestive and Kidney Diseases Special Emphasis Panel; PAR–16–034: Ancillary Studies on Diabetes.

Date: February 10, 2017.

Open: 2:30 p.m. to 4:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Two Democracy Plaza, 6707 Democracy Boulevard, Bethesda, MD 20892, (Telephone Conference Call).

Contact Person: Dianne Camp, Ph.D., Scientific Review Officer, Review Branch, DEA, NIDDK, National Institutes of Health,Room 7013, 6707 Democracy Boulevard, Bethesda, MD 20892–2542, 301–5947682, *campd@extra.niddk.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.847, Diabetes,

Endocrinology and Metabolic Research; 93.848, Digestive Diseases and Nutrition Research; 93.849, Kidney Diseases, Urology and Hematology Research, National Institutes of Health, HHS)

Dated: December 29, 2016.

David Clary,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016–31984 Filed 1–4–17; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Diabetes and Digestive and Kidney Diseases; Notice of Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended (5 U.S.C. App.), notice is hereby given of meetings of the National Diabetes and Digestive and Kidney DiseasesAdvisory Council.

The meetings will be open to the public as indicated below, with attendance limited to space available. Individuals who plan to attend and need special assistance, such as sign languageinterpretation or other reasonable accommodations, should notify the Contact Person listed below in advance of the meeting.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and thediscussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Diabetes and Digestive and Kidney Diseases Advisory Council.

Date: February 1, 2017.

Open: 8:30 a.m. to 12:00 p.m.

Agenda: To present the Director's Report and other scientific presentations.

Place: National Institutes of Health, Building 31, C Wing 6th Floor, Conference Center, Room 10, 31 Center Drive, Bethesda, MD 20892.

Closed: 3:45 p.m. to 4:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Building 31, C Wing 6th Floor, Conference Center, Room 10, 31 Center Drive, Bethesda, MD 20892.

Contact Person: Brent B. Stanfield, Ph.D., Director, Division of Extramural Activities, National Institutes of Diabetes and Digestive and Kidney Diseases, 6707 Democracy Blvd. Room 7323, MSC 5452, Bethesda, MD 20892, (301) 594–8843, *stanfibr@niddk.nih.gov.*

Name of Committee: National Diabetes and Digestive and Kidney Diseases Advisory Council; Kidney, Urologic and Hematologic Diseases Subcommittee.

Date: February 1, 2017.

Open: 1:00 p.m. to 3:00 p.m.

Agenda: To review the Division's scientific and planning activities.

Place: National Institutes of Health, Building 31, C Wing 6th Floor, Conference Center, Room 7, 31 Center Drive, Bethesda, MD 20892.

Closed: 3:00 p.m. to 4:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Building 31, C Wing 6th Floor, Conference Center, Room 7, 31 Center Drive, Bethesda, MD 20892.

Contact Person: Brent B. Stanfield, Ph.D., Director, Division of Extramural Activities, National Institutes of Diabetes and Digestive and Kidney Diseases, 6707 Democracy Blvd. Room 7323, MSC 5452, Bethesda, MD 20892, (301) 594–8843, *stanfibr@niddk.nih.gov.*

Name of Committee: National Diabetes and Digestive and Kidney Diseases Advisory Council; Digestive Diseases and Nutrition Subcommittee.

Date: February 1, 2017.

Open: 1:00 p.m. to 2:30 p.m.

Agenda: To review the Division's scientific and planning activities.

Place: National Institutes of Health, Building 31, C Wing 6th Floor, Conference Center, Room 6, 31 Center Drive, Bethesda, MD 20892.

Open: 2:30 p.m. to 4:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Building 31, C Wing 6th Floor, Conference Center, Room 6, 31 Center Drive, Bethesda, MD 20892.

Contact Person: Brent B. Stanfield, Ph.D., Director, Division of Extramural Activities, National Institutes of Diabetes and Digestive and Kidney Diseases, 6707 Democracy Blvd. Room 7323, MSC 5452, Bethesda, MD 20892, (301) 594–8843, *stanfibr@niddk.nih.gov.*

Name of Committee: National Diabetes and Digestive and Kidney Diseases Advisory Council; Diabetes, Endocrinology and Metabolic Diseases Subcommittee.

Date: February 1, 2017.

Open: 1:00 p.m. to 2:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Building, 31, C Wing 6th floor, Conference Center, Room 10, 31 Center Drive, Bethesda, MD 20892.

Open: 2:00 p.m. to 4:00 p.m.

Agenda: To review the Division's scientific and planning activities.

Place: National Institutes of Health, Building, 31, C Wing 6th floor, Conference Center, Room 10, 31 Center Drive, Bethesda, MD 20892.

Contact Person: Brent B. Stanfield, Ph.D., Director, Division of Extramural Activities, National Institutes of Diabetes and Digestive and Kidney Diseases, 6707 Democracy Blvd. Room 7323, MSC 5452, Bethesda, MD 20892, (301) 594–8843, *stanfibr@niddk.nih.gov.*

Any interested person may file written comments with the committee by forwarding the statement to the Contact Person listed on this notice. The statement should include the name, address, telephone number and when applicable, the business or professional affiliation of the interested person.

In the interest of security, NIH has instituted stringent procedures for entrance onto the NIH campus. All visitor vehicles, including taxicabs, hotel, and airport shuttles will be inspected before being allowed on campus. Visitors will be asked to show one form of identification (for example, a government-issued photo ID, driver's license, or passport) and to state the purpose of their visit.

Information is also available on the Institute's/Center's home page: *www.niddk.nih.gov/fund/divisions/DEA/Council/coundesc.htm.,* where an agenda and any additional information for the meeting will be posted when available.

(Catalogue of Federal Domestic Assistance Program Nos. 93.847, Diabetes, Endocrinology and Metabolic Research; 93.848, Digestive Diseases and Nutrition Research; 93.849, Kidney Diseases, Urology and Hematology Research, National Institutes of Health, HHS)

Dated: December 29, 2016.

David Clary,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2016–31983 Filed 1–4–17; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS–HQ–IA–2016–N233]; [FXIA16710900000–134–FF09]

Advisory Council on Wildlife Trafficking

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of meeting.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a public meeting of the Advisory Council on Wildlife Trafficking (Council). The Council's purpose is to advise the Presidential Task Force on Wildlife Trafficking, through the Secretary of the Interior, on national strategies to combat wildlife trafficking.

DATES: The meeting will be held on Tuesday, January 17, 2017, from 11 a.m. to 12:30 p.m. (Eastern Time). Members of the public who want to participate in the meeting must notify Mr. Cade London by close of business on Friday, January 13, 2017. See additional instructions under **SUPPLEMENTARY INFORMATION**, Procedures for Public Input.

ADDRESSES: The meeting will be held at the U.S. Department of the Interior, South Interior Building Auditorium, 1951 Constitution Avenue NW., Washington, DC 20240.

FOR FURTHER INFORMATION CONTACT: Cade London, Special Assistant—USFWS International Affairs, by email at *cade_london@fws.gov* (preferred contact method); by U.S. mail at 5275 Leesburg Pike, Falls Church, VA 22041; by telephone at (703) 358–2584; or by fax at (703) 358–2276.

SUPPLEMENTARY INFORMATION: In accordance with the requirements of the Federal Advisory Committee Act (5 U.S.C. App.), we announce that the Advisory Council on Wildlife Trafficking (Council) will hold a meeting to discuss Implementation of the National Strategy to Combat Wildlife Trafficking, priority areas for advice, and other Council business as appropriate.

Background

Pursuant to E.O. 13648, the Advisory Council on Wildlife Trafficking was formed on August 30, 2013, to advise the Presidential Task Force on Wildlife Trafficking, through the Secretary of the Interior, on national strategies to combat wildlife trafficking, including but not limited to (a) Effective support for anti-poaching activities; (b) Coordinating regional law enforcement efforts; (c) Developing and supporting effective legal enforcement mechanisms; and (d) Developing strategies to reduce illicit trade and consumer demand for illegally traded wildlife, including protected species.

The eight-member Council, appointed by the Secretary of the Interior, includes former senior leadership within the U.S. Government, as well as chief executive officers and board members from conservation organizations and the private sector. For more information on the Council and its members, visit *http://www.fws.gov/international/advisory-council-wildlife-trafficking/.*

Meeting Agenda

The Council will consider:

(1) Task Force Update and Implementation of National Strategy
(2) Priority Areas for Advice
(3) Other Council Business.

The final detailed agenda will be posted on the Internet at *http://www.fws.gov/international/advisory-council-wildlife-trafficking/.*

Procedures for Public Input

Submitting or Presenting Information

Interested members of the public may submit relevant information for the Council to consider during the public meeting. Members of the public who wish to speak must register in advance with Cade London by Friday, January 13, 2017 (see **FOR FURTHER INFORMATION CONTACT**).

Members of the public may submit written questions in advance for the Council to address during the meeting. Cade London must receive written questions by Friday, January 13, 2017. Nonregistered public speakers will not be considered during the meeting.

Individuals or groups who want to make an oral presentation at the meeting will be limited to 3 minutes per speaker, with no more than a total of 30 minutes for all speakers. Interested parties should contact Cade London by Friday, January 13, 2017, to be placed on the public speaker list.

Registered speakers who wish to expand on their oral statements, or those who wanted to speak but could not be accommodated on the agenda, are invited to submit subsequent written statements to the Council after the meeting. Such written statements must be received by Cade London, in writing, no later than Friday, January 27, 2017.

Registering To Attend the Meeting In Person

In order to attend this meeting, you must register by close of business Friday, January 13, 2017. Because entry to Federal buildings is restricted, all visitors must preregister to be admitted. Please submit your name, time of arrival, email address, and phone number to Cade London (see **FOR FURTHER INFORMATION CONTACT**).

Post-Meeting Minutes

Summary minutes of the conference will be maintained at 5275 Leesburg Pike, Falls Church, VA 22041, and on the Council Web site at *http://www.fws.gov/international/advisory-council-wildlife-trafficking/,* and will be available for public inspection during regular business hours within 30 days following the meeting.

Dated: December 29, 2016.

Teresa Christopher,

Acting Director.

[FR Doc. 2016–31997 Filed 1–4–17; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–IMR–GRTE–22122; PA.P0218630A.01.1]

Boundary and Classification Descriptions and Final Maps for Snake River Headwaters, Grand Teton National Park, Yellowstone National Park, John D. Rockefeller, Jr. Memorial Parkway, and National Elk Refuge

AGENCY: National Park Service, Interior.

ACTION: Notice of availability.

SUMMARY: In accordance with the Wild and Scenic Rivers Act, the National Park Service has transmitted the final boundary and classification descriptions and maps of the Snake River Headwaters Wild and Scenic River to Congress. The classification and boundaries become effective as stated under **DATES** below.

DATES: The boundaries and classification of the Snake River Headwaters Wild and Scenic River become effective 90 days after they are transmitted to Congress.

ADDRESSES: Maps may be viewed on the National Park Service Planning, Environment and Public Comment (PEPC) Web site [*http://parkplanning.nps.gov/GRTE-YELL_SnakeRiverHeadwaters_FinalBoundaryMaps*] and at any National Park Service office through the LandsNet Web site [*http://landsnet.nps.gov/tractsnet/documents/grte/Miscellaneous/grte_SnakeRiverHeadwatersWSR_136-124480.pdf].* Hard copies may also be viewed at Grand Teton National Park Headquarters, 1 Moose Warehouse—170, Moose, WY 83012 and at Yellowstone National Park Headquarters, 2 Bravo Officers Row, Yellowstone National Park, WY 82190.

FOR FURTHER INFORMATION CONTACT: National Park Service Denver Service Center, 12795 W. Alameda Parkway, Denver, CO 80228, 303–969–2724; *steve_b_degrush@nps.gov.* Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8:00 a.m. and 8:00 p.m., Eastern Time, Monday through Friday.

SUPPLEMENTARY INFORMATION: On March 30, 2009, President Barack Obama signed Public Law 111–11 (123 Stat. 1147) known as the Craig Thomas Snake Headwaters Legacy Act of 2008, that amended the Wild and Scenic Rivers Act to add approximately 388 miles of rivers and streams of the Snake River

Headwaters to the national wild and scenic rivers system, to be administered by the Secretary of the Interior. The headwaters encompass an entire watershed and include 13 rivers and 25 separate river segments that flow across National Park Service, U.S. Forest Service, and U.S. Fish and Wildlife Service lands, as well as a small portion of state and private lands. The boundary establishment addressed in this notice includes only those lands managed by the National Park Service and those at the National Elk Refuge, which are managed by the U.S. Fish and Wildlife Service. As specified by Public Law 111–11 (123 Stat. 1147, 16 U.S.C. 1274 (a)(12)), the boundary becomes effective 90 days after the final boundary description and maps are forwarded to Congress.

Dated: October 12, 2016.

Sue E. Masica,

Regional Director, Intermountain Region, National Park Service.

[FR Doc. 2016–31952 Filed 1–4–17; 8:45 am]

BILLING CODE 4312–52–P

DEPARTMENT OF LABOR

Employment and Training Administration

[TA–W–91,641]

General Electric Company, d/b/a GE Capacitor and Power Quality Products, Energy Connections Division, Fort Edward, New York; Notice of Revised Determination on Reconsideration

On September 7, 2016, the Department of Labor issued an Affirmative Determination Regarding Application for Reconsideration for the workers and former workers of General Electric Company, d/b/a GE Capacitor and Power Quality Products, Energy Connections Division, Fort Edward, New York (hereafter referred to as ''GE-Fort Edward'' or ''the subject firm''). The subject firm is engaged in activities related to the production of capacitors. The subject worker group does not include on-site leased workers. Workers of the subject firm were previously certified eligible to apply for Trade Adjustment Assistance under TA–W–85,071 (certification expired on May 29, 2016).

Based on new information provided during the reconsideration investigation, the Department determines that the worker group at GE-Fort Edward has met the worker group eligibility criteria set forth in the Trade Act of 1974, as amended.

Section 222(a)(1) has been met because a significant number or proportion of the workers in GE-Fort Edward have become totally or partially separated, or are threatened to become totally or partially separated.

Section 222(a)(2)(B) has been met because the workers' firm has shifted to a foreign country a portion of the production of capacitors like or directly competitive with those produced by the workers which contributed importantly to worker group separations at GE-Fort Edward.

Conclusion

After careful review of the additional facts obtained on reconsideration, I determine that workers of GE-Fort Edward, who were engaged in employment related to production of capacitors, meet the worker group certification criteria under Section 222(a) of the Act, 19 U.S.C. 2272(a). In accordance with Section 223 of the Act, 19 U.S.C. 2273, I make the following certification:

All workers of General Electric Company, d/b/a GE Capacitor and Power Quality Products, Energy Connections Division, Fort Edward, New York, who became totally or partially separated from employment on or after May 30, 2016, through two years from the date of this certification, and all workers in the group threatened with total or partial separation from employment on date of certification through two years from the date of certification, are eligible to apply for adjustment assistance under Chapter 2 of Title II of the Trade Act of 1974, as amended.

Signed in Washington, DC, this 31st day of October 2016.

Del Min Amy Chen,

Certifying Officer, Office of Trade Adjustment Assistance.

[FR Doc. 2016–31971 Filed 1–4–17; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

[TA–W–91,920; TA–W–91,920A]

Compucom Systems, Inc., Dallas Service Desk, Dallas, Texas; Compucom Systems, Inc., Dallas Service Desk, Plano, Texas; Amended Certification Regarding Eligibility To Apply for Worker Adjustment Assistance

In accordance with Section 223 of the Trade Act of 1974 (19 U.S.C. 2273), and Section 246 of the Trade Act of 1974 (26 U.S.C. 2813), as amended, the Department of Labor issued a Certification of Eligibility to Apply for Worker Adjustment Assistance on August 5, 2016 applicable to workers and former workers of CompuCom Systems, Inc., Dallas Service Desk, Dallas, Texas (TA–W–91,920) (herein referred to as ''CompuCom Systems, Inc., Dallas Service Desk''). The workers' firm is engaged in activities related to the supply of information technology services, specifically the workers are engaged in technical support services for CompuCom clients.

The State of Texas has informed the Department that the Dallas Service Desk relocated to Plano, Texas on August 5, 2016.

It is the Department's intent to accurately reflect the worker group eligible to apply for Trade Adjustment Assistance. Consequently, the amended notice applicable to TA–W–91,290 is hereby issued as follows:

''All workers of CompuCom Systems, Inc., Dallas Service Desk, Dallas, Texas (TA–W–91,920), who became totally or partially separated from employment on or after June 14, 2015 through August 4, 2016, are eligible to apply for adjustment assistance under Chapter 2 of Title II of the Trade Act of 1974, as amended'' and

''All workers of CompuCom Systems, Inc., Dallas Service Desk, Plano, Texas (TA–W–91,920A), who became totally or partially separated from employment on or after August 5, 2016 through August 5, 2018, and all workers in the group threatened with total or partial separation from employment on August 5, 2016 through August 5, 2018, are eligible to apply for adjustment assistance under Chapter 2 of Title II of the Trade Act of 1974, as amended.''

Signed in Washington, DC, this 2nd day of November, 2016.

Del-Min Amy Chen,

Certifying Officer, Office of Trade Adjustment Assistance.

[FR Doc. 2016–32008 Filed 1–4–17; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

[TA–W–91,138]

Graftech International Holdings Inc. Engineered Solutions Division, a Subsidiary of Brookfield Asset Management Inc., Anmoore, West Virginia; Notice of Affirmative Determination Regarding Application for Reconsideration

By application dated November 10, 2016, the Department of Labor (Department) received a request for administrative reconsideration from a company official of the Department's Notice of Termination of Investigation

regarding workers' eligibility to apply for Trade Adjustment Assistance applicable to workers and former workers of GrafTech International Holdings Inc., Engineered Solutions Division, a subsidiary of Brookfield Asset Management Inc., Anmoore, West Virginia (subject firm). The subject firm is engaged in activities related to the production of synthetic graphite articles, such as molds and crucibles, used in high temperature applications. The Notice was issued on November 4, 2016 and has yet to be published in the **Federal Register.**

The Department has carefully reviewed the request for reconsideration, the existing record, and the new and additional information provided by the company official, and has determined that the Department will conduct further investigation to determine if the workers meet the eligibility requirements of the Trade Act of 1974, as amended.

Conclusion

After careful review of the application, I conclude that the claim is of sufficient weight to justify reconsideration of the U.S. Department of Labor's prior decision. The application is, therefore, granted.

Signed at Washington, DC, this 15th day of November 2016.

Del-Min Amy Chen,

Certifying Officer, Office of Trade Adjustment Assistance.

[FR Doc. 2016–32011 Filed 1–4–17; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

[TA–W–92,251]

Versum Materials US, LLC, a Subsidiary of Versum Materials, Inc., Including Workers Whose Unemployment Insurance (UI) Wages Were Reported Under Air Products and Chemicals, Inc., Surface Preparation and Clean (SP&C) Division, Allentown, Pennsylvania; Amended Certification Regarding Eligibility To Apply for Worker Adjustment Assistance

In accordance with Section 223 of the Trade Act of 1974, as amended (''Act''), 19 U.S.C. 2273, the Department of Labor issued a Certification of Eligibility to Apply for Worker Adjustment Assistance on October 20, 2016, applicable to workers of Versum Materials US, LLC, a subsidiary of Versum Materials, Inc., Surface Preparation and Clean (SP&C) Division, Allentown, Pennsylvania. The workers are engaged in activities related to the production of formulated chemical samples (for use in the electronic industry).

At the request of a state workforce official, the Department reviewed the certification for workers of the subject firm.

New information shows that some workers separated from employment at Versum Materials US, LLC, a subsidiary of Versum Materials, Inc., Surface Preparation and Clean (SP&C) Division, Allentown, Pennsylvania had their wages reported through a separate unemployment insurance (UI) tax account under the name Air Products and Chemicals, Inc.

The intent of the Department's certification is to include all workers of the subject firm who were adversely affected by the shift in production to a foreign country. Accordingly, the Department is amending this certification to properly reflect this matter.

The amended notice applicable to TA–W–92,251 is hereby issued as follows:

All workers of Versum Materials US, LLC, a subsidiary of Versum Materials, Inc., including workers whose unemployment insurance (UI) wages were reported under Air Products and Chemicals, Inc., Surface Preparation and Clean (SP&C) Division, Allentown, Pennsylvania, who became totally or partially separated from employment on or after September 9, 2015, through October 20, 2018, and all workers in the group threatened with total or partial separation from employment on October 20, 2016 through October 20, 2018, are eligible to apply for adjustment assistance under Chapter 2 of Title II of the Trade Act of 1974, as amended.

Signed in Washington, DC, this 3rd day of November, 2016.

Del Min Amy Chen,

Certifying Officer, Office of Trade Adjustment Assistance.

[FR Doc. 2016–32014 Filed 1–4–17; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

[TA–W–91,549]

W.W. Grainger, Inc., Janesville Facility Division Including On-Sited Leased Workers From Peoplescout.Com and Superior Workforce Solutions, Inc., Janesville, Wisconsin; Amended Certification Regarding Eligibility To Apply for Worker Adjustment Assistance

In accordance with Section 223 of the Trade Act of 1974, as amended (''Act''), 19 U.S.C. 2273, the Department of Labor issued a Certification of Eligibility to Apply for Worker Adjustment Assistance on April 22, 2016, applicable to workers of W.W. Grainger, Inc., Janesville Facility Division, including on-site leased workers from *Peoplescout.com*, Janesville, Wisconsin. The Department's notice of determination was published in the **Federal Register** on April 26, 2016 (81 FR 24646). Workers are engaged in the supply of distribution services of materials, repair, and operating (MRO) products.

At the request of subject firm, the Department reviewed the certification for workers of the subject firm.

W.W. Grainger, Inc. confirmed that workers leased from Superior Workforce Solutions Inc. are employed on-site at its Janesville, Wisconsin facility.

The Department has determined that these workers were sufficiently under the control of the subject firm to be considered leased workers.

Based on these findings, the Department is amending this certification to include workers leased from *Peoplescout.com* and Superior Workforce Solutions, Inc., working on-site at the Janesville, Wisconsin location of W.W. Grainger, Inc., Janesville Facility Division.

The amended notice applicable to TA–W–91,549 is hereby issued as follows:

''All workers of W.W. Grainger, Inc., Janesville Facility Division, including on-site leased workers from *Peoplescout.com* and Superior Workforce Solutions, Inc., Janesville, Wisconsin, who became totally or partially separated from employment on or after March 3, 2015 through April 22, 2018, and all workers in the group threatened with total or partial separation from employment on April 22, 2016 through April 22, 2018, are eligible to apply for adjustment assistance under Chapter 2 of Title II of the Trade Act of 1974, as amended.''

Signed in Washington, DC, this 23rd day of November, 2016.

Del Min Amy Chen,

Certifying Officer, Office of Trade Adjustment Assistance.

[FR Doc. 2016–31970 Filed 1–4–17; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

[TA–W–85,956]

Cameron International Corporation, Measurement Division, Duncan, Oklahoma; Notice of Revised Determination on Reconsideration

On August 18, 2016, the Department of Labor issued an Affirmative Determination Regarding Application for Reconsideration for the workers and former workers of Cameron International Corporation, Measurement Division, Duncan, Oklahoma (Cameron International-Measurement Division). The workers of Cameron International-Measurement Division are engaged in activities related to the production of measurement equipment. The subject worker group does not include on-site leased workers.

The request for reconsideration asserts that Cameron International Corporation, Duncan, Oklahoma (subject firm) is a Supplier to several firms that employ worker groups eligible to apply for Trade Adjustment Assistance (TAA). The request for reconsideration includes supporting documentation.

The reconsideration investigation revealed that Section 222(b)(1) has been met because a significant number or proportion of the workers in Cameron International-Measurement Division have become totally or partially separated, or are threatened to become totally or partially separated.

The reconsideration investigation revealed that the subject firm is a Supplier to a firm that employed a group of workers who received a certification of eligibility under Section 222(a) of the Act, 19 U.S.C. 2272(a), and such supply is related to the finished article that was the basis for such certification.

The reconsideration investigation revealed that Section 222(b)(3)(B) has been met because the loss of business by the subject firm with the firm that employed a certified worker group contributed importantly to worker separations at Cameron International-Measurement Division.

Conclusion

After careful review of the additional facts obtained on reconsideration, I determine that workers of Cameron International Corporation, Measurement Division, Duncan, Oklahoma, who were engaged in employment related to production of measurement equipment, meet the worker group certification criteria under Section 222(a) of the Act, 19 U.S.C. 2272(a). In accordance with Section 223 of the Act, 19 U.S.C. 2273, I make the following certification:

All workers of Cameron International Corporation, Measurement Division, Duncan, Oklahoma, who became totally or partially separated from employment on or after April 23, 2014, through two years from the date of this certification, and all workers in the group threatened with total or partial separation from employment on date of certification through two years from the date of certification, are eligible to apply for adjustment assistance under Chapter 2 of Title II of the Trade Act of 1974, as amended.

Signed in Washington, DC, this 5th day of December, 2016.

Del-Min Amy Chen,

Certifying Officer, Office of Trade Adjustment Assistance.

[FR Doc. 2016–31917 Filed 1–4–17; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

[TA–W–91,233]

Thermo Fisher Scientific, LLC, Including Workers Whose Unemployment Insurance (UI) Wages, Are Reported Under Thermo Finnigan LLC, and Including On-Site Leased Workers From ATR, ADECCO, AEROTEK and Kelly Services, Austin, Texas; Amended Certification Regarding Eligibility To Apply for Worker Adjustment Assistance

In accordance with Section 223 of the Trade Act of 1974, as amended (''Act''), 19 U.S.C. 2273, the Department of Labor issued a Certification of Eligibility to Apply for Worker Adjustment Assistance on January 31, 2016, applicable to workers and former workers of Thermo Fisher Scientific, including on-site leased workers from ATR, Adecco, Aerotek, and Kelly Services, Austin, Texas. The workers are engaged in activities related to the production of gas chromatography and mass spectrometry analyzers.

At the request of the State Workforce Office, the Department reviewed the certification for workers of the subject firm.

The Department has confirmed that some workers separated from employment at Thermo Fisher Scientific, Austin, Texas had wages reported under an unemployment insurance (UI) account under the name Thermo Finnigan LLC.

The intent of the Department's certification is to include all workers of the subject firm who were adversely affected by a shift to a foreign country in production of gas chromatography and mass spectrometry analyzers, or like or directly competitive articles which contributed importantly to worker group separations at Thermo Fisher Scientific, Austin, Texas. Accordingly, the Department is amending this certification to properly reflect this matter. The amended notice applicable to TA–W–91,233 is hereby issued as follows:

All workers of Thermo Fisher Scientific, LLC, including workers whose unemployment insurance (UI) wages are reported under Thermo Finnigan LLC and including on-site leased workers from ATR, Adecco, Aerotek, and Kelly Services, Austin, Texas, who became totally or partially separated from employment on or after December 15, 2014, through January 31, 2018, and all workers in the group threatened with total or partial separation from employment on January 31, 2016 through January 31, 2018, are eligible to apply for adjustment assistance under Chapter 2 of Title II of the Trade Act of 1974, as amended.

Signed in Washington, DC, this 11th day of November 2016.

Del Min Amy Chen,

Certifying Officer, Office of Trade Adjustment Assistance.

[FR Doc. 2016–32009 Filed 1–4–17; 8:45 am]

BILLING CODE 4510–FN–P

DEPARTMENT OF LABOR

Employment and Training Administration

[TA–W–85,605]

GE Power Electronics, Inc., GE Energy Management Division a Business Unit of General Electric Company Including Workers Whose Wages Are Reported Under Lineage Power Group, Galion, Ohio; Amended Certification Regarding Eligibility to Apply for Worker Adjustment Assistance

In accordance with Section 223 of the Trade Act of 1974, as amended (''Act''), 19 U.S.C. 2273, the Department of Labor issued a Certification of Eligibility to Apply for Worker Adjustment Assistance on September 9, 2015, applicable to workers of GE Power Electronics, Inc., GE Energy Management Division, A Business Unit

of General Electric Company, Galion, Ohio.

At the request of the State of Ohio, the Department reviewed the certification for workers of the subject firm.

New information obtained by the Department revealed that some workers separated from employment had their wages reported under the name Lineage Power Group.

It is the Department's intent to issue a certification that accurately reflects the worker group eligible to apply for Trade Adjustment Assistance. Accordingly, the Department is amending this certification to properly reflect this matter.

The amended certification applicable to TA–W–85,605 is hereby issued as follows:

''All workers of GE Power Electronics, Inc., GE Energy Management Division, a Business Unit of General Electric Company, including workers whose wages are reported under Lineage Power Group, Galion, Ohio, who became totally or partially separated from employment on or after October 17, 2013, through September 9, 2015, and all workers in the group threatened with total or partial separation from employment on September 9, 2015 through September 9, 2017, are eligible to apply for adjustment assistance under Chapter 2 of Title II of the Trade Act of 1974, as amended.''

Signed in Washington, DC, this 3rd day of November, 2016.

Del-Min Amy Chen,

Certifying Officer, Office of Trade Adjustment Assistance.

[FR Doc. 2016–31972 Filed 1–4–17; 8:45 am]

BILLING CODE 4510–FN–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 50–193; NRC–2016–0213]

Rhode Island Atomic Energy Commission

AGENCY: Nuclear Regulatory Commission.

ACTION: Environmental assessment and finding of no significant impact; issuance.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is considering renewal of Facility License No. R–95, held by the Rhode Island Atomic Energy Commission (RIAEC or the licensee), for the continued operation of the Rhode Island Nuclear Science Center Reactor (RINSC reactor or the facility), located in the Narragansett, Washington County, Rhode Island. The NRC is issuing an environmental assessment (EA) and finding of no significant impact (FONSI) associated with the renewal of the license.

DATES: The EA and FONSI are available on January 5, 2017.

ADDRESSES: Please refer to Docket ID NRC–2016–0213 when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- *Federal Rulemaking Web site:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2016–0213. Address questions about NRC dockets to Carol Gallagher; telephone: 301–415–3463; email: *Carol.Gallagher@nrc.gov.* For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.
- *NRC's Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly available documents online in the ADAMS Public Documents collection at *http://www.nrc.gov/reading-rm/adams.html.* To begin the search, select ''*ADAMS Public Documents*'' and then select ''*Begin Web-based ADAMS Search.*'' For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1–800–397–4209, 301–415–4737, or by email to *pdr.resource@nrc.gov.* For the convenience of the reader, the ADAMS accession numbers are provided in a table in the ''Availability of Documents'' section of this document.
- *NRC's PDR:* You may examine and purchase copies of public documents at the NRC's PDR, Room OWFN–01F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Patrick G. Boyle, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Rockville, MD 20852. Telephone: 301–415–3936; email: *Patrick.Boyle@nrc.gov.*

SUPPLEMENTARY INFORMATION:

I. Introduction

The NRC is considering issuance of a renewed Facility Operating License No. R–95, held by RIAEC, which would authorize continued operation of the RINSC reactor, located in Narragansett, Washington County, Rhode Island. As required by section 51.21 of title 10 of the *Code of Federal Regulations* (10 CFR), ''Criteria for and identification of licensing and regulatory actions requiring environmental assessments,'' the NRC staff prepared an EA documenting its environmental review. Based on the results of the EA that follows, the NRC has determined not to prepare an environmental impact statement for the proposed renewed license and is issuing a FONSI in accordance with 10 CFR 51.32, ''Finding of no significant impact.''

II. Environmental Assessment

Facility Site and Environs

The RINSC reactor is located on the University of Rhode Island Narragansett Bay Campus. The RINSC facility consists of one building that houses the reactor and support areas. The confinement section of the reactor building is constructed primarily of concrete, brick, steel, and aluminum. The RINSC site comprises the reactor building and a small area immediately surrounding it, partially bounded by a chain-link fence. Adjacent to the reactor site are athletic facilities to the north and west, fields and parking lots to the east, and academic and research buildings to the south. Surrounding areas are well developed with offsite land use mostly residential in nature. The nearest residences are located approximately 500 meters (1,640 feet) west-northwest and south of the facility.

The RINSC reactor is a pool-type, water moderated and cooled research reactor licensed to operate at a thermal steady-state power level of 2 megawatts (MWt). The reactor was designed to permit later conversion to a steady-state power level of 5 MWt. The fuel is located at the bottom of an aluminum-lined concrete pool with a volume of approximately 40,000 gallons (151,000 liters) and a depth of 32 feet (9.7 m). The reactor is fueled with standard plate-type low-enriched uranium fuel provided by the Department of Energy.

The RINSC reactor uses demineralized water for primary coolant, shielding, and as a reactor moderator and city water for secondary coolant. At power levels below 0.1 MWt, the core can be cooled by natural convection of water through the reactor core and at power levels above 0.1 MWt the core is cooled by forced convection of water through the reactor core. In natural convection mode cooling, heat from the core is transferred to the primary cooling water in the pool where it is dissipated to the surrounding environment. In forced convection mode cooling, heat is transferred from the primary cooling water to two heat exchangers, which pass the heat to the secondary cooling loops, which in turn dissipate the heat to the surrounding environment via two cooling towers. Operation of the primary and secondary cooling systems are checked on a daily basis prior to forced convection reactor operation. During this checkout, the performance of each system is monitored with emphasis on pump

outlet pressures, pressure differentials and system flow rates. The licensee conducts periodic tests of the secondary water for sodium-24 which would indicate a leak from the primary water into the secondary water.

During normal operation of the RINSC reactor, the only significant airborne radioactive effluent is Argon–41 (Ar–41). The primary liquid radioactive effluents produced during normal operation include miscellaneous neutron activation products in the primary coolant, many of which are deposited in the mechanical filter and demineralizer resins and, therefore, disposed of as solid radioactive waste. Non-routine liquid radioactive wastes can result from decontamination or maintenance activities, such as filter or resin replacements. Solid radioactive wastes include waste generated from reactor maintenance operations and laboratory wastes from experiments. Much of the solid radioactive waste generated at the RINSC facility is held in a restricted area and allowed to decay to background levels and then disposed of as non-radioactive waste. Solid radioactive waste that is not decayed in storage is transferred to a low-level waste broker for appropriate disposal.

The RIAEC maintains a Radiation Protection Program, which involves regular monitoring of airborne, liquid, and solid gamma and beta radiation to ensure that any effluent releases are within the limits of 10 CFR part 20, ''Standards For Protection Against Radiation.'' The current environmental program consists of radiation area monitors (RAMs), continuous air monitors (CAMs), portable radiation survey instruments, personnel monitors, and stack gas and particulate monitors. Perimeter monitoring at the RINSC facility consists of Optically-Stimulated Luminescent Dosimeters (OLDs) which detect X-ray and gamma radiation.

A detailed description of the reactor and its operations can be found in the Safety Analysis Report (SAR) for the RINSC reactor submitted by RIAEC with its renewal application.

Description of the Proposed Action

The proposed action would renew Facility Operating License No. R–95 for a period of 20 years from the date of issuance of the renewed license. The proposed action is in accordance with the licensee's application dated May 3, 2004, as supplemented on January 19, February 4, August 6, August 18, September 3, September 8, November 26, December 7, and December 14, 2010; January 24, February 24, and July 15, 2011; March 15, September 16, and December 19, 2013; February 24, April 28, and June 30, 2014; August 7 and August 11, 2015; and January 20, February 26, March 1, April 21, July 20, October 6, November 1, November 14, December 1, December 8, December 13, and December 15, 2016 (collectively referred to as ''the renewal application''). Initially, the operating license was to expire at midnight on August 27, 2002, but a construction time recapture license amendment issued on July 28, 2000 extended the license expiration date to July 21, 2004. Because of the timely renewal provision contained in 10 CFR 2.109(a), the licensee is permitted to continue operation of the reactor under the terms and conditions of its operating license until the license renewal application before the NRC has been finally determined. The proposed renewal would authorize continued operation of the reactor for an additional 20 years from the date of issuance of the renewed license.

Need for the Proposed Action

The proposed action is needed to allow the continued operation of the RINSC reactor to routinely provide teaching, research, and services to numerous institutions for a period of 20 years from the date of issuance of the renewed license.

Environmental Impacts of the Proposed Action

The environmental impacts of the proposed action are discussed below. As discussed below, the proposed action will not have a significant environmental impact. In addition, the proposed action will not require any physical changes to the facility and the impacts are similar to those occurring during past operations.

A. Radiological Impacts

Environmental Effects of Reactor Operations

The only significant gaseous radioactive effluent resulting from the operation of the RINSC reactor is Ar–41. This nuclide is released to the environment from the reactor building from an exhaust stack on the roof that combines the ventilation exhausts from both the main and the purge systems. The stack discharge length is 115 feet (35 meters). Nitrogen–16 (N–16) is also produced during reactor operation, but its release from the reactor stack is insignificant because the half-life of N–16 is approximately 7 seconds and most of the N–16 produced in the reactor coolant would decay before reaching the stack. Therefore Ar–41 is the most significant radionuclide released as a gaseous effluent during normal reactor operations.

The licensee's Technical Specifications require that public doses from Ar–41 not exceed the 100 millirem (mrem) annual public dose limit in 10 CFR 20.1301, ''Dose limits for individual members of the public.'' The Ar–41 release rate would reach a maximum during continuous operation at full power. Historical data shows that the reactor generates approximately 0.14 ± 0.03 Curie (Ci) of Ar–41 per MW hour of operation. Using the Environmental Protection Agency COMPLY computer code, the licensee calculated the dose to the maximally-exposed member of the public located 100 meters (328 feet) from the stack to be 0.021 mrem (0.00021 millisieverts (mSv)) per Ci of Ar–41 released. Using this result, the licensee also calculated that an annual release of 476 Ci of Ar–41 (corresponding to approximately 3,400 MW-hours, or 1,700 hours of operation at full licensed power) from the RINSC reactor would correspond to a maximum public dose of 10 mrem (0.10 mSv) per year. The NRC staff finds the licensee's calculations to be reasonable and conservative. Seven annual operational reports covering the period July 2009 through June 2016 (each annual report covers a July through June reporting period) show that the maximum recorded release of Ar–41 in 1 year was 129.4 Ci, which would result in a dose of 2.7 mrem (0.027 mSv) in 1 year to a member of the public. This is less than 3 percent of the 100 mrem (1 mSv) per year limit specified in 10 CFR 20.1301. The maximum radiation dose of 2.7 mrem (0.027 mSv) in 1 year also demonstrates compliance with the as low as is reasonably achievable (ALARA) air emissions dose constraint of 10 mrem (0.10 mSv) specified in 10 CFR 20.1101, ''Radiation protection programs,'' paragraph(d).

Liquid radioactive wastes are produced as a result of normal operation of the RINSC reactor, and typically consist of miscellaneous neutron activation product impurities in the reactor coolant. Since most of these activation products can be removed from the reactor coolant by collection on the mechanical filters and the demineralizer resins, most of these radioactive materials are typically disposed as solid radioactive sources. While some non-routine liquid radioactive waste could be generated due to decontamination or maintenance activities, the amounts, based on a review of the licensee's past operating experience, as reported in their annual reports, have been and are expected to remain a small volume. Liquid

radioactive wastes at the RINSC facility are allowed to decay in storage, are disposed of into the sanitary sewer in accordance with 10 CFR 20.2003, ''Disposal by release into sanitary sewerage,'' or, when necessary, are packaged and transported offsite for disposal. Annual operational reports covering the period July 2009 through June 2016 show that the licensee complied with the limits on discharges to the sanitary sewer in 10 CFR part 20, Appendix B.

Low-level solid radioactive waste generated from reactor operations typically includes laboratory wastes such as irradiated plastics, contaminated tools, towels, as well as reactor demineralizer resins and particulate filters. Any radioactive waste that contains radionuclides with half-lives of less than 90 days is allowed to decay in storage and is then disposed of as normal solid waste. Historically, one or two 55-gallon drums of solid waste are generated each year, with the activity being in the microcurie range. This waste is disposed of by a low-level waste broker in accordance with all applicable regulations for transportation of radioactive materials. To comply with the Nuclear Waste Policy Act of 1982, the licensee has entered into a contract with the U.S. Department of Energy (DOE) that provides that DOE retains title to the fuel utilized at RINSC reactor and that DOE is obligated to take the fuel from the site for final disposition.

As described in Chapter 11 of the RINSC reactor SAR, personnel exposures are well within the limits set by 10 CFR 20.1201, ''Occupational dose limits for adults,'' and are ALARA. The licensee tracks exposures of personnel monitored with dosimeters, and exposures are usually less than 10 percent of the occupational limit of 5,000 mrem (50 mSv) per year. Area thermo-luminescent dosimeter monitors mounted in the control room and the reactor bay provide an additional monthly measurement of total radiation exposures at those locations. Annual operational reports covering the period July 2009 through June 2016 show that the personnel doses were well within the 10 CFR 20.1201 limits. No changes in reactor operation that would lead to an increase in occupational dose are expected or proposed as a result of the proposed action.

The radiation monitoring systems associated with reactor operations at the RINSC facility are provided and maintained as a means of ensuring compliance with radiation limits established under 10 CFR part 20, ''Standards for Protection against Radiation.'' The RINSC facility monitoring systems consist of RAMs, CAMs, portable radiation survey instruments, perimeter monitors, and stack gas and particulate monitors. The stack particulate and gas monitoring systems measure the beta-gamma activity emitted by radioactive particulates and the activity of gaseous radioactive nuclides, respectively, that are exhausted through the RINSC facility stack. Perimeter monitoring at RINSC facility consists of OLDs which detect X-ray and gamma radiation.

The licensee conducts a monitoring program to record and track the radiological impact of reactor operation on the surrounding unrestricted area. The program consists of quarterly exposure measurements at three locations outside the reactor building using OLDs. The licensee then applies an occupancy factor to determine the final exposure measurement. The licensee's radiation safety officer administers the program and maintains the appropriate records. Annual operational reports covering the period July 2009 through June 2016 show that radiation exposures at the monitoring locations were below the limits to the public as required by 10 CFR part 20. Year-to-year trends in exposures are consistent between monitoring locations. Also, no correlation exists between total annual reactor operation and annual exposures measured at the monitoring locations. Based on review of data for the years 2009 through 2016, the NRC staff finds that operation of the RINSC reactor does not have any significant radiological impact on the surrounding environment. No changes in reactor operation that would affect off-site radiation levels are expected or proposed as a result of the proposed action.

Because occupational and public exposures are below regulatory limits, the NRC staff concludes that the proposed action would not have a significant radiological impact.

Environmental Effects of Accidents

Accident scenarios are discussed in Chapter 13 of the RINSC SAR. The accidents analyzed in Chapter 13 cover a range of anticipated events, including a postulated accident involving a fission product release with radiological consequences that exceed those of any accident considered to be credible. This limiting accident is referred to as the maximum hypothetical accident (MHA). The licensee considers the uncontrolled release of the gaseous fission products from a fissionable experiment to be the MHA. In the scenario used by the licensee, an experiment containing fissionable material fails, and the gaseous fission products in the experiment are released into the air of the reactor building. From the reactor building, the release would continue to the environment. The licensee calculated doses to facility personnel during a five minute evacuation duration, and also calculated the dose to a member of the public outside the facility during the two hours it would take the entire plume of released radioactive material to pass. The licensee estimated an occupational dose of 1,570 mrem (15.7 mSv), and a dose of 100 mrem (1 mSv) to the maximally-exposed member of the public. The NRC staff reviewed the licensee's calculations, and found them to be generally reasonable and acceptable. The NRC staff also performed independent calculations to verify that the licensee's calculated doses represented conservative estimates for the MHA. The NRC staff estimated an occupational dose of 4,100 mrem (41.0 mSv), and a dose of 88 mrem (0.88 mSv) to the maximally-exposed member of the public. The details of these calculations are provided in the safety evaluation report that the NRC staff is preparing to document the safety review of the application for a renewed license. The NRC staff estimates that the occupational radiation doses resulting from the postulated MHA would be below the 10 CFR 20.1201 limit of 5,000 mrem (50 mSv). The NRC staff also estimates that the maximum radiation doses for members of the public resulting from the postulated MHA would be at or below the 10 CFR 20.1301 limit of 100 mrem (1 mSv).

The licensee has systems in place for controlling the release of radiological effluents, and implements a radiation protection program to monitor personnel exposures and releases of radioactive effluents. The licensee's systems and radiation protection program are appropriate for the types and quantities of effluents expected to be generated by continued operation of the reactor. The NRC also staff evaluated information contained in the licensee's renewal application and data the licensee reported to the NRC for the last 7 years of operation to determine the projected radiological impact of the facility on the environment during the period of the renewed license. The NRC staff finds that releases of radioactive material and personnel exposures were all well within applicable regulatory limits. Because the licensee has not requested any changes to the facility design or operating conditions as part of the application for license renewal, the proposed action would not significantly

increase the probability or consequences of accidents, would not significantly change the types or quantities of effluents that may be released off-site, and would not significantly increase individual or cumulative occupational or public radiation exposure. Based on its evaluation, the NRC staff concludes that continued operation of the reactor would not have a significant environmental impact.

B. Non-Radiological Impacts

The proposed action does not involve any change in the operation of the reactor, change in the emissions or heat load dissipated to the environment, or construction or other land disturbance activities. The proposed action would not result in any land use changes or increase in noise or air emissions, and would not have a significant impact on air quality, noise or visual, terrestrial or aquatic resources. The proposed license renewal would not affect surface water or groundwater resources, because water is supplied through the city and no changes in facility operations are proposed. Heat produced cooling the reactor is ultimately disposed to the environment through the secondary cooling system and cooling tower. There are no increased thermal effects on the environment in the proposed action. The licensee uses no chemical treatments in the secondary cooling system. Hazardous chemicals may be used in experiments at the RINSC facility, but no releases of potentially hazardous chemicals to the environment occur during normal facility operation. Disposal of non-radioactive waste, including hazardous chemicals, generated by individuals associated with the University of Rhode Island, is conducted by the campus Department of Safety and Risk Management in accordance with EPA regulations. The Safety and Risk Management organization provides training for users, performs inspections, and complies with OSHA and EPA regulations. Therefore, the NRC staff concludes that the proposed action would have no significant non-radiological impacts.

Other Applicable Environmental Laws

In addition to the National Environmental Policy Act, which requires Federal agencies to consider the environmental impacts of proposed actions, the NRC has responsibilities that are derived from other environmental laws, which include the Endangered Species Act, Coastal Zone Management Act, Fish and Wildlife Coordination Act, National Historic Preservation Act, and Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.'' The following presents a brief discussion of impacts associated with resources protected by these laws and related requirements.

1. Endangered Species Act (ESA)

The ESA was enacted to prevent further decline of endangered and threatened species and restore those species and their critical habitat. Section 7 of the ESA requires Federal agencies to consult with the U.S. Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) regarding actions that may affect listed species or designated critical habitats. The NRC staff conducted a search of federally listed species and critical habitats that have the potential to occur in the vicinity of the RINSC facility using the FWS's Environmental Conservation Online System Information for Planning and Conservation system. Eight Federally-listed species occur in Washington County: The American burying beetle (*Nicrophorus americanus*), hawksbill sea turtle (*Eretmochelys imbricata*), leatherback sea turtle (*Dermochelys coriacea*), northern long-eared bat (*Myotis septentrionalis*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), roseate tern (*Sterna dougallii dougallii*), and sandplain gerardia (*Agalinis acuta*). However, none of these species are likely to occur near the RINSC reactor because the facility is located on the University of Rhode Island Narragansett Bay Campus, which does not provide suitable habitat for Federally listed species because it has been developed, and in use, for research and educational purposes for many decades. Additionally, operation of the RINSC reactor has no direct nexus to the natural environment that could otherwise affect federally listed species. Accordingly, the NRC staff concludes that the proposed license renewal of the RINSC reactor would have no effect on federally listed species or critical habitats. Federal agencies are not required to consult with the FWS if they determine that an action will not affect listed species or critical habitats (ADAMS Accession No. ML16120A505). Thus, the ESA does not require consultation for the proposed RINSC reactor license renewal, and the NRC staff considers its obligations under ESA Section 7 to be fulfilled for the proposed action.

2. Coastal Zone Management Act (CZMA)

The CZMA, in part, encourages States to preserve, protect, develop, and restore coastal resources. Applicants for Federal licenses to conduct an activity that affects any land or water use or natural resource of the coastal zone of a state must provide a certification in that the proposed activities complies with the State's approved coastal zone management program and will conduct activities consistent with that program.

Rhode Island's approved coastal zone includes the area encompassed within the State's seaward boundary (3 miles (4.8 kilometers)) to the inland boundaries of the State's 21 coastal municipalities, of which Narragansett is one. Although the RINSC reactor is located within the State's coastal zone, the proposed license renewal is not reasonably likely to affect any land or water use or natural resource of the coastal zone, and thus, the CZMA consistency certification process does not apply. Therefore, the NRC staff finds that the licensee does not need to provide a certification under the CZMA.

3. Fish and Wildlife Coordination Act (FWCA)

The FWCA requires Federal agencies that license water resource development projects to consult with the FWS (or NMFS, when applicable) and the State wildlife resource agencies regarding the potential impacts of the project on fish and wildlife resources.

The proposed license renewal does not involve any water resource development projects, including any of the modifications relating to impounding a body of water, damming, diverting a stream or river, deepening a channel, irrigation, or altering a body of water for navigation or drainage. Therefore, no coordination with other agencies pursuant to the FWCA is required for the proposed action.

4. National Historic Preservation Act (NHPA)

The NHPA requires Federal agencies to consider the effects of their undertakings on historic properties. As stated in the Act, historic properties are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places (NRHP).

The NRHP lists one historic property on the University of Rhode Island Narragansett Bay Campus, the Narragansett Baptist Church. The location of the Narragansett Baptist Church is approximately 1,000 feet (304.8 meters) northwest of the RINSC facility. Operation of the RINSC reactor has not likely had any impact on this property. A request for a Section 106 project review was submitted to the

State Historic Preservation Officer (SHPO) regarding this undertaking and determination. By letter dated December 19, 2013, the Rhode Island SHPO concurred that this action would not affect any historic properties (ADAMS Accession No. ML14006A420). Based on this information, the NRC staff finds that the proposed license renewal and the continued operation of the RINSC reactor would have no adverse effect on historic properties located near the RINSC reactor.

5. Executive Order 12898—Environmental Justice

Executive Order 12898, ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,'' 59 FR 7629 (February 16, 1994), directs agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law.

The environmental justice impact analysis evaluates the potential for disproportionately high and adverse human health and environmental effects on minority and low-income populations that could result from the relicensing and the continued operation of the RINSC reactor. Such effects may include human health, biological, cultural, economic, or social impacts. Minority and low-income populations are subsets of the general public residing around the RINSC reactor, and all are exposed to the same health and environmental effects generated from activities at the RINSC reactor.

Minority Populations in the Vicinity of the RINSC Reactor—According to the U.S. Census Bureau's 2010 Census, approximately 12 percent of the total population (approximately 125,000 individuals) residing within a 10-mile radius of the RINSC reactor identified themselves as minorities. The largest minority populations were Hispanic, Latino, or Spanish origin of any race (approximately 4,900 or 4 percent) followed by Black or African American (approximately 3,700 or 3 percent). According to the 2010 Census, 7.6 percent of the Washington County population identified themselves as minorities, with persons of Hispanic, Latino, or Spanish origin of any race, Asians, and Black or African Americans comprising the largest minority populations (2.4 percent, 2.1 percent, and 2.0 percent, respectively). According to the U.S. Census Bureau's 2015 American Community Survey 1-year Estimates, the minority population of Washington County, as a percent of the total population, had increased to about 9 percent.

Low-income Populations in the Vicinity of the RINSC Reactor—According to U.S. Census Bureau's 2010–2014 American Community Survey 5-Year Estimates, approximately 11,000 persons and 1,500 families (approximately 10 and 5 percent, respectively) residing within a 10-mile radius of the RINSC reactor were identified as living below the Federal poverty threshold. The 2014 Federal poverty threshold was $24,230 for a family of four. According to the U.S. Census Bureau's 2015 American Community Survey Census 1-Year Estimates, the median household income for the State of Rhode Island was $58,073 while approximately 10 percent of families and 14 percent of the state population were found to be living below the Federal poverty threshold. Washington County had a higher median household income average ($72,453) and a lower percent of families (8 percent) and persons (10 percent) living below the poverty level, respectively.

Impact Analysis—Potential impacts to minority and low-income populations would mostly consist of radiological effects; however, radiation doses from continued operations associated with the proposed license renewal are expected to continue at current levels, and would be below regulatory limits. No significant visual or noise impacts are expected to result from the proposed action. Based on this information and the analysis of human health and environmental impacts presented in this EA, the proposed license renewal would not have disproportionately high and adverse human health and environmental effects on minority and low-income populations residing in the vicinity of the RINSC reactor.

Environmental Impacts of the Alternatives to the Proposed Action

As an alternative to license renewal, the NRC considered denying the proposed action (*i.e.,* the ''no-action'' alternative). If the NRC denied the request for license renewal, reactor operations would cease and decommissioning would be required (sooner than if a renewed license were issued) and the environmental effects of decommission would occur. Decommissioning would be conducted in accordance with an NRC-approved decommissioning plan, which would require a separate environmental review under 10 CFR part 51.21. Cessation of reactor operations would reduce or eliminate radioactive effluents. However, as previously discussed in this EA, radioactive effluents from reactor operations constitute a small fraction of the applicable regulatory limits. Therefore, the environmental impacts of license renewal and the denial of the request for license renewal would be similar. In addition, denying the request for license renewal would eliminate the benefits of teaching, research, and services provided by the RINSC reactor.

Alternative Use of Resources

The proposed license renewal does not involve the use of any different resources or significant quantities of resources beyond those previously considered in the issuance of Facility License No. R–95 on July 21, 1964, which authorized RIAEC to operate the RINSC reactor, the license amendment issued on September 10, 1968, which authorized operation up to a maximum of 2 MWt, and the license amendment issued on March 17, 1993, which authorized the conversion from highly-enriched uranium fuel to low-enriched uranium fuel in the RINSC reactor.

Agencies and Persons Consulted

With the exception of the Rhode Island SHPO as previously described in this EA, the NRC staff did not enter into consultation with any other Federal agencies or with the State of Rhode Island regarding the environmental impact of the proposed action. However, on December 20, 2016, the NRC notified the Rhode Island State official, Mr. Paul D'Abbraccio, Radiological Emergency Preparedness Program Manager, of the Rhode Island Emergency Management Agency of the proposed action. Mr. Paul D'Abbraccio responded by email on December 22, 2016 and had no comments.

III. Finding of No Significant Impact

The NRC is considering issuance of a renewed Facility License No. R–95, held by the RIAEC, which would authorize the continued operation of the RINSC reactor for an additional 20 years from the date of issuance of the renewed license.

On the basis of the EA included in Section II of this notice and incorporated by reference in this finding, the NRC staff finds that the proposed action will not have a significant impact on the quality of the human environment. The proposed action would result in no significant impacts on terrestrial, surface or groundwater resources, or the radiological environment. In addition, the proposed action will not affect Federally-protected species or affect any designated habitat. The NRC staff's

evaluation considered information provided in the licensee's application, as supplemented, and the NRC staff's review of related environmental documents. Section IV below lists the environmental documents related to the proposed action and includes information on the availability of these documents. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

IV. Availability of Documents

The following table identifies the references cited in this document and related to the NRC's FONSI. These documents are available for public inspection online through ADAMS at *http://www.nrc.gov/reading-rm/adams.html* or in person at the NRC's PDR as described previously.

Document	ADAMS accession No.
"Rhode Island Atomic Energy Commission—'Requesting Renewal of Operating License R–095 (Enclosure 2)' [REDACTED Safety Analysis Report]," May 3, 2004.	ML14038A386
"Rhode Island Atomic Energy Commission, Requesting Renewal of Operating License R–095," May 3, 2004	ML041270519
"Response to Request for Additional Information Concerning Plans for Decommissioning Facility at the End of Useful Life Ref Item 3 Parts a, b, and c," January 19, 2010.	ML100270176
"Rhode Island Nuclear Science Center, Appendix A to Safety Analysis Report, Information on Ar–41 and N–16," (received December 5, 2016), February 4, 2010.	ML16340A068
"Rhode Island Nuclear Science Center Reactor Submittal of Response to Request for Additional Information Re License Renewal," August 6, 2010.	ML102240257
"Responding to Requests for Additional Information (RAI) regarding our Analysis of the Maximum Hypothetical Accident (MHA) for Renewal of License R–95," August 18, 2010.	ML102360440
"Memorandum Steady-State Thermal-Hydraulic Analysis for Forced-Convective Flow in the Rhode Island Nuclear Science (RINSC) Reactor," September 3, 2010.	ML16062A376
"Rhode Island Atomic Energy Commission, Fourth Response to Request for Additional Information dated April 23, 2010 (Redacted)," September 8, 2010.	ML16279A516
"Rhode Island Atomic Energy Commission Fifth Response to April 13, 2010 Request for Additional Information (Regarding License Renewal redacted)," November 26, 2010.	ML16279A518
"Rhode Island Atomic Energy Commission—Response to Requests for Additional Information Regarding Aging Issues Raised in RAIs," December 7, 2010.	ML103490242
"Rhode Island Atomic Energy Commission Response to April 13, 2010, Request for Additional Information Regarding License Renewal Technical Specifications (Redacted)," December 14, 2010.	ML16279A519
"Reply to your Request for Additional Information (RAI) dated April 13, 2010, regarding License Renewal for the Rhode Island Nuclear Science Center Reactor (RINSC)," January 24, 2011.	ML110320416
"Letter re: Request for Additional Information dated April 13, 2010 Regarding License Renewal for the Rhode Island Nuclear Science Center Reactor (RINSC)," February 24, 2011.	ML110600699
"Rhode Island Atomic Energy Commission Response to Request for Additional Information Regarding License Renewal," July 15, 2011.	ML11202A287
"Rhode Island Atomic Energy Commission Tenth Response to the April 13, 2010, Request for Additional Information Regarding License Renewal (Redacted)," July 15, 2011.	ML16279A520
"Rhode Island Atomic Energy Commission Responses to Request for Additional Information Regarding License Renewal (Redacted)," July 15, 2011.	ML16279A521
"Rhode Island Nuclear Science Center Tenth Response to NRC Request for Additional Information dated April 13, 2010, Pages 126 Through 204," July 15, 2011.	ML11202A290
"Response to NRC's Request for Additional Information Regarding Rhode Island Nuclear Science Center Reactor License Renewal," March 15, 2013.	ML13080A361
"Response to NRC's Request for Additional Information Regarding Rhode Island Nuclear Science Center Reactor License Renewal," March 15, 2013.	ML13080A362
"Response to NRC's Request for Additional Information Regarding Rhode Island Nuclear Science Center Reactor License Renewal, Proposed Technical Specification 130314," March 15, 2013.	ML13080A364
"Response to Request for Additional Information Regarding Financial Qualifications for the RINSC Reactor License Renewal," September 16, 2013.	ML13260A474
"Rhode Island Atomic Energy Commission License Renewal Historical Resource Impact Response Letter," December 19, 2013.	ML14006A420
"Response to Request for Additional Information Regarding Requalification Plan for the RINSC Reactor License Renewal," February 24, 2014.	ML14057A639
"Compilation of All Submitted Requests for Additional Information for the Rhode Island Nuclear Science Center Reactor License Renewal. Part 1 of 3," April 28, 2014.	ML14126A192
"Rhode Island Atomic Energy Commission Consolidated Responses to Request for Additional Information Regarding License Renewal. Part 2 of 3 (Redacted)," April 28, 2014.	ML16279A523
"Compilation of All Submitted Requests for Additional Information for the Rhode Island Nuclear Science Center Reactor License Renewal. Part 3 of 3," April 28, 2014.	ML14126A195
"Rhode Island Nuclear Science Center Reactor—Updated Proposed Technical Specifications," June 30, 2014	ML14184B361
"Rhode Island Nuclear Science Center Updated Technical Specifications," August 7, 2015	ML15223A953
"Rhode Island Nuclear Science Center Submittal of Updated Proposed Technical Specification," August 11, 2015	ML15223A952
"Summary of Changes to the Proposed Technical Specifications," August 11, 2015	ML15223A954
"Contractor Comments and Responses," August 11, 2015	ML15223A955
"Rhode Island Nuclear Science Center Transient Analyses Revised January 20, 2016," January 20, 2016	ML16062A378
"Rhode Island Nuclear Science Center Technical Specifications," February 26, 2016	ML16062A380
"Rhode Island Atomic Energy Commission—Response to Requests for Additional Information dated September 3, 2015," March 1, 2016.	ML16062A373
"Fuel Failure Addendum 160229," March 1, 2016	ML16062A381
"New Transient Analysis Results 160226," March 1, 2016	ML16062A379
"150903 RAI Responses 160301," March 1, 2016	ML16062A374

Document	ADAMS accession No.
''Core Change Summary for Conversion from RINSC LEU Core #5 to LEU Core #6,'' March 1, 2016	ML16062A375
''[RINSC] Fuel Failure Analysis [Dose Table],'' March 1, 2016	ML16062A382
''Request for Change to License for the Rhode Island Atomic Energy Commission,'' April 21, 2016	ML16112A071
''Rhode Island Atomic Energy Commission Research Reactor—Responses to NRC Staff Request for Additional Information for License Renewal Review (Redacted Version),'' July 20, 2016.	ML16202A008
''State of Rhode Island and Province Plantations—Response to Request for Additional Dated August 3, 2016, Rhode Island Nuclear Science Center Response to NRC Request for Additional Information Regarding the Renewal, and Rhode Island Nuclear Science Center Technical Specifications,'' October 6, 2016.	ML16280A420
''State of Rhode Island and Providence Plantations—Response to Request for Additional Information Regarding Calculations for Fuel Element Failure Accident Scenario,'' Letter and Responses, November 1, 2016.	ML16306A063
''Rhode Island Atomic Energy Commission—Transmittal of Supplemental Information in Support of Relicensing for the Rhode Island Nuclear Science Center (R–95),'' Letter and Responses, November 14, 2016.	ML16319A298
''Rhode Island Nuclear Science Center—Supplemental Information for the Relicensing of the Rhode Island Atomic Energy Commission, Rhode Island Nuclear Science Center—Safety Analysis Report, and Rhode Island Nuclear Science Center—Technical Specifications,'' December 1, 2016.	ML16336A734
''State of Rhode Island and Province Plantations—Supplemental Information Regarding Relicensing for the Rhode Island Nuclear Science Center,'' December 8, 2016.	ML16343A851
''Rhode Island December 13, 2016 Conversation Record,'' December 13, 2016	ML16351A003
''Supplemental Information Re: Relicensing for the Rhode Island Nuclear Science Center (R–95),'' December 15, 2016	ML16350A042
''Rhode Island December 15 2016 Conversation Record,'' December 15, 2016	ML16351A012
''Rhode Island Nuclear Science Center—Supplemental Information Regarding Relicensing,'' December 15, 2016	ML16350A256

Dated at Rockville, Maryland, this 27th day of December 2016.

For the Nuclear Regulatory Commission.

Steven T. Lynch,

Chief (Acting), Research and Test Reactors Branch, Division of Policy and Rulemaking, Office of Nuclear Reactor Regulation.

[FR Doc. 2016–31980 Filed 1–4–17; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 50–391; NRC–2016–0272]

Tennessee Valley Authority; Watts Bar Nuclear Plant, Unit 2

AGENCY: Nuclear Regulatory Commission.

ACTION: License amendment request; notice of opportunity to comment, request a hearing, and petition for leave to intervene; order imposing procedures.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) received and is considering issuance of an amendment to Facility Operating License No. NPF–96, issued to the Tennessee Valley Authority, for operation of the Watts Bar Nuclear Plant (WBN), Unit 2. The proposed amendment would revise the WBN, Unit 2, Cyber Security Plan (CSP) Implementation Schedule for Milestone 8 and would revise the associated license condition in the Facility Operating License. Because the amendment request contains sensitive unclassified non-safeguards information (SUNSI), an order imposes procedures to obtain access to SUNSI for contention preparation.

DATES: Comments must be filed by February 6, 2017. A request for a hearing must be filed by March 6, 2017. Any potential party as defined in § 2.4 of title 10 of the *Code of Federal Regulations* (10 CFR), who believes access to SUNSI is necessary to respond to this notice must request document access by January 17, 2017.

ADDRESSES: You may submit comments by any of the following methods:

- *Federal Rulemaking Web site:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2016–0272. Address questions about NRC dockets to Carol Gallagher; telephone: 301–415–3463; email: *Carol.Gallagher@nrc.gov.* For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.
- *Mail comments to:* Cindy Bladey, Office of Administration, Mail Stop: OWFN–12–H08, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

For additional direction on obtaining information and submitting comments, see ''Obtaining Information and Submitting Comments'' in the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Robert Schaaf, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington DC 20555–0001; telephone: 301–415–6020; email: *Robert.Schaaf@nrc.gov.*

SUPPLEMENTARY INFORMATION:

I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID NRC–2016–0272 and facility name, unit number(s), plant docket number, application date, and subject when contacting the NRC about the availability of information for this action. You may obtain publicly-available information related to this action by any of the following methods:

- *Federal Rulemaking Web site:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2016–0272.
- *NRC's Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly-available documents online in the ADAMS Public Documents collection at *http://www.nrc.gov/reading-rm/adams.html.* To begin the search, select ''*ADAMS Public Documents*'' and then select ''*Begin Web-based ADAMS Search.*'' For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1–800–397–4209, 301–415–4737, or by email to *pdr.resource@nrc.gov.* The License Amendment Request (WBN–TS–16–04) to Change the Completion Date of Cyber Security Plan Implementation Milestone 8 is available in ADAMS under Accession No. ML16320A161.
- *NRC's PDR:* You may examine and purchase copies of public documents at the NRC's PDR, Room O1–F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

B. Submitting Comments

Please include Docket ID NRC–2016–0272 and facility name, unit number(s), plant docket number, application date,

and subject in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at *http://www.regulations.gov* as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

II. Introduction

The NRC is considering issuance of an amendment to Facility Operating License No. NPF–96, issued to the Tennessee Valley Authority, for operation of WBN, Unit 2, located in Rhea County, Tennessee.

The proposed amendment would revise the WBN, Unit 2, CSP Implementation Schedule for Milestone 8 and would revise the associated license condition in the Facility Operating License.

Before any issuance of the proposed license amendment, the NRC will need to make the findings required by the Atomic Energy Act of 1954, as amended (the Act), and NRC's regulations.

The NRC has made a proposed determination that the license amendment request involves no significant hazards consideration. Under the NRC's regulations in § 50.92 of title 10 of the *Code of Federal Regulations* (10 CFR), this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change revises the CSP Milestone 8 Implementation Schedule. This change does not alter accident analysis assumptions, add any initiators, or affect the function of plant systems or the manner in which systems are operated, maintained, modified, tested, or inspected. The proposed change is an extension to the completion date of implementation Milestone 8, that in itself does not require any plant modifications which affect the performance capability of the structures, systems, and components relied upon to mitigate the consequences of postulated accidents and have no impact on the probability or consequences of an accident previously evaluated.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change revises the CSP Implementation Schedule. This proposed change to extend the completion date of implementation Milestone 8 does not alter accident analysis assumptions, add any initiators, or affect the function of plant systems or the manner in which systems are operated, maintained, modified, tested, or inspected. The proposed change does not require any plant modifications which affect the performance capability of the structures, systems and components relied upon to mitigate the consequences of postulated accidents. This change also does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

Plant safety margins are established through limiting conditions for operation, limiting safety system settings, and safety limits specified in the technical specifications. The proposed change extends the CSP Implementation Schedule. Because there is no change to these established safety margins as result of this change, the proposed change does not involve a significant reduction in a margin of safety.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the license amendment request involves a no significant hazards consideration.

The NRC is seeking public comments on this proposed determination that the license amendment request involves no significant hazards consideration. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of 60 days after the date of publication of this notice. The Commission may issue the license amendment before expiration of the 60-day notice period if the Commission concludes the amendment involves no significant hazards consideration. In addition, the Commission may issue the amendment prior to the expiration of the 30-day comment period if circumstances change during the 30-day comment period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility. If the Commission takes action prior to the expiration of either the comment period or the notice period, it will publish in the **Federal Register** a notice of issuance. If the Commission makes a final no significant hazards consideration determination, any hearing will take place after issuance. The Commission expects that the need to take this action will occur very infrequently.

III. Opportunity To Request a Hearing and Petition for Leave To Intervene

Within 60 days after the date of publication of this notice, any persons (petitioner) whose interest may be affected by this action may file a request for a hearing and petition for leave to intervene (petition) with respect to the action. Petitions shall be filed in accordance with the Commission's ''Agency Rules of Practice and Procedure'' in 10 CFR part 2. Interested persons should consult a current copy of 10 CFR 2.309. The NRC's regulations are accessible electronically from the NRC Library on the NRC's Web site at *http://www.nrc.gov/reading-rm/doc-collections/cfr/.* Alternatively, a copy of the regulations is available at the NRC's Public Document Room, located at One White Flint North, Room O1–F21, 11555 Rockville Pike (first floor), Rockville, Maryland 20852. If a petition is filed, the Commission or a presiding officer will rule on the petition and, if appropriate, a notice of a hearing will be issued.

As required by 10 CFR 2.309(d) the petition should specifically explain the reasons why intervention should be permitted with particular reference to the following general requirements for standing: (1) The name, address, and telephone number of the petitioner; (2) the nature of the petitioner's right under

the Act to be made a party to the proceeding; (3) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (4) the possible effect of any decision or order which may be entered in the proceeding on the petitioner's interest.

In accordance with 10 CFR 2.309(f), the petition must also set forth the specific contentions which the petitioner seeks to have litigated in the proceeding. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner must provide a brief explanation of the bases for the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to the specific sources and documents on which the petitioner intends to rely to support its position on the issue. The petition must include sufficient information to show that a genuine dispute exists with the applicant or licensee on a material issue of law or fact. Contentions must be limited to matters within the scope of the proceeding. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to satisfy the requirements at 10 CFR 2.309(f) with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene. Parties have the opportunity to participate fully in the conduct of the hearing with respect to resolution of that party's admitted contentions, including the opportunity to present evidence, consistent with the NRC's regulations, policies, and procedures.

Petitions must be filed no later than 60 days from the date of publication of this notice. Petitions and motions for leave to file new or amended contentions that are filed after the deadline will not be entertained absent a determination by the presiding officer that the filing demonstrates good cause by satisfying the three factors in 10 CFR 2.309(c)(1)(i) through (iii). The petition must be filed in accordance with the filing instructions in the ''Electronic Submissions (E-Filing)'' section of this document.

If a hearing is requested, and the Commission has not made a final determination on the issue of no significant hazards consideration, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to establish when the hearing is held. If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing would take place after issuance of the amendment. If the final determination is that the amendment request involves a significant hazards consideration, then any hearing held would take place before the issuance of the amendment unless the Commission finds an imminent danger to the health or safety of the public, in which case it will issue an appropriate order or rule under 10 CFR part 2.

A State, local governmental body, Federally-recognized Indian Tribe, or agency thereof, may submit a petition to the Commission to participate as a party under 10 CFR 2.309(h)(1). The petition should state the nature and extent of the petitioner's interest in the proceeding. The petition should be submitted to the Commission by March 6, 2017. The petition must be filed in accordance with the filing instructions in the ''Electronic Submissions (E-Filing)'' section of this document, and should meet the requirements for petitions set forth in this section, except that under 10 CFR 2.309(h)(2) a State, local governmental body, or Federally-recognized Indian Tribe, or agency thereof does not need to address the standing requirements in 10 CFR 2.309(d) if the facility is located within its boundaries. Alternatively, a State, local governmental body, Federally-recognized Indian Tribe, or agency thereof may participate as a non-party under 10 CFR 2.315(c).

If a hearing is granted, any person who is not a party to the proceeding and is not affiliated with or represented by a party may, at the discretion of the presiding officer, be permitted to make a limited appearance pursuant to the provisions of 10 CFR 2.315(a). A person making a limited appearance may make an oral or written statement of his or her position on the issues but may not otherwise participate in the proceeding. A limited appearance may be made at any session of the hearing or at any prehearing conference, subject to the limits and conditions as may be imposed by the presiding officer. Details regarding the opportunity to make a limited appearance will be provided by the presiding officer if such sessions are scheduled.

IV. Electronic Submissions (E-Filing)

All documents filed in NRC adjudicatory proceedings, including a request for hearing and petition for leave to intervene (petition), any motion or other document filed in the proceeding prior to the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities that request to participate under 10 CFR 2.315(c), must be filed in accordance with the NRC's E-Filing rule (72 FR 49139; August 28, 2007, as amended at 77 FR 46562; August 3, 2012). The E-Filing process requires participants to submit and serve all adjudicatory documents over the internet, or in some cases to mail copies on electronic storage media. Detailed guidance on making electronic submissions may be found in the Guidance for Electronic Submissions to the NRC and on the NRC Web site at *http://www.nrc.gov/site-help/e-submittals.html.* Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, at least 10 days prior to the filing deadline, the participant should contact the Office of the Secretary by email at *hearing.docket@nrc.gov,* or by telephone at 301–415–1677, to (1) request a digital identification (ID) certificate, which allows the participant (or its counsel or representative) to digitally sign submissions and access the E-Filing system for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a petition or other adjudicatory document (even in instances in which the participant, or its counsel or representative, already holds an NRC-issued digital ID certificate). Based upon this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on the NRC's public Web site at *http://www.nrc.gov/site-help/e-submittals/getting-started.html.* Once a participant has obtained a digital ID certificate and a docket has been created, the participant can then submit adjudicatory documents. Submissions should be in Portable Document Format (PDF). Additional guidance on PDF submissions is available on the NRC's public Web site at *http://www.nrc.gov/site-help/electronic-sub-ref-mat.html.* A filing is considered complete at the time

the document is submitted through the NRC's E-Filing system. To be timely, an electronic filing must be submitted to the E-Filing system no later than 11:59 p.m. Eastern Time on the due date. Upon receipt of a transmission, the E-Filing system time-stamps the document and sends the submitter an email notice confirming receipt of the document. The E-Filing system also distributes an email notice that provides access to the document to the NRC's Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the document on those participants separately. Therefore, applicants and other participants (or their counsel or representative) must apply for and receive a digital ID certificate before adjudicatory documents are filed so that they can obtain access to the documents via the E-Filing system.

A person filing electronically using the NRC's adjudicatory E-Filing system may seek assistance by contacting the NRC's Electronic Filing Help Desk through the ''Contact Us'' link located on the NRC's public Web site at *http://www.nrc.gov/site-help/e-submittals.html,* by email to *MSHD.Resource@nrc.gov,* or by a toll-free call at 1–866–672–7640. The NRC Electronic Filing Help Desk is available between 9 a.m. and 6 p.m., Eastern Time, Monday through Friday, excluding government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper filing stating why there is good cause for not filing electronically and requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) first class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, 11555 Rockville Pike, Rockville, Maryland 20852, Attention: Rulemaking and Adjudications Staff. Participants filing adjudicatory documents in this manner are responsible for serving the document on all other participants. Filing is considered complete by first-class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service upon depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the reason for granting the exemption from use of E-Filing no longer exists.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket which is available to the public at *http://ehd1.nrc.gov/ehd/,* unless excluded pursuant to an order of the Commission or the presiding officer. Participants are requested not to include personal privacy information, such as social security numbers, home addresses, or personal phone numbers in their filings, unless an NRC regulation or other law requires submission of such information. For example, in some instances, individuals provide home addresses in order to demonstrate proximity to a facility or site. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission.

For further details with respect to this action, see the application for license amendment dated November 14, 2016.

Attorney for licensee: Ms. Sherry A. Quirk, Executive Vice President and General Counsel, Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee, 37902.

NRC Acting Branch Chief: Jeanne D. Johnston.

Order Imposing Procedures for Access to Sensitive Unclassified Non-Safeguards Information for Contention Preparation

A. This Order contains instructions regarding how potential parties to this proceeding may request access to documents containing Sensitive Unclassified Non-Safeguards Information (SUNSI).

B. Within 10 days after publication of this notice of hearing and opportunity to petition for leave to intervene, any potential party who believes access to SUNSI is necessary to respond to this notice may request access to SUNSI. A ''potential party'' is any person who intends to participate as a party by demonstrating standing and filing an admissible contention under 10 CFR 2.309. Requests for access to SUNSI submitted later than 10 days after publication of this notice will not be considered absent a showing of good cause for the late filing, addressing why the request could not have been filed earlier.

C. The requester shall submit a letter requesting permission to access SUNSI to the Office of the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemakings and Adjudications Staff, and provide a copy to the Associate General Counsel for Hearings, Enforcement and Administration, Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001. The expedited delivery or courier mail address for both offices is: U.S. Nuclear Regulatory Commission, 11555 Rockville Pike, Rockville, Maryland 20852. The email address for the Office of the Secretary and the Office of the General Counsel are *Hearing.Docket@nrc.gov* and *OGCmailcenter@nrc.gov,* respectively.[1] The request must include the following information:

(1) A description of the licensing action with a citation to this **Federal Register** notice;

(2) The name and address of the potential party and a description of the potential party's particularized interest that could be harmed by the action identified in C.(1); and

(3) The identity of the individual or entity requesting access to SUNSI and the requester's basis for the need for the information in order to meaningfully participate in this adjudicatory proceeding. In particular, the request must explain why publicly available versions of the information requested would not be sufficient to provide the basis and specificity for a proffered contention.

D. Based on an evaluation of the information submitted under paragraph C.(3) the NRC staff will determine within 10 days of receipt of the request whether:

(1) There is a reasonable basis to believe the petitioner is likely to establish standing to participate in this NRC proceeding; and

(2) The requestor has established a legitimate need for access to SUNSI.

E. If the NRC staff determines that the requestor satisfies both D.(1) and D.(2) above, the NRC staff will notify the requestor in writing that access to SUNSI has been granted. The written notification will contain instructions on how the requestor may obtain copies of the requested documents, and any other conditions that may apply to access to those documents. These conditions may include, but are not limited to, the

[1] While a request for hearing or petition to intervene in this proceeding must comply with the filing requirements of the NRC's ''E-Filing Rule,'' the initial request to access SUNSI under these procedures should be submitted as described in this paragraph.

signing of a Non-Disclosure Agreement or Affidavit, or Protective Order [2] setting forth terms and conditions to prevent the unauthorized or inadvertent disclosure of SUNSI by each individual who will be granted access to SUNSI.

F. Filing of Contentions. Any contentions in these proceedings that are based upon the information received as a result of the request made for SUNSI must be filed by the requestor no later than 25 days after receipt of (or access to) that information. However, if more than 25 days remain between the petitioner's receipt of (or access to) the information and the deadline for filing all other contentions (as established in the notice of hearing or opportunity for hearing), the petitioner may file its SUNSI contentions by that later deadline.

G. Review of Denials of Access.

(1) If the request for access to SUNSI is denied by the NRC staff after a determination on standing and requisite need, the NRC staff shall immediately notify the requestor in writing, briefly stating the reason or reasons for the denial.

(2) The requester may challenge the NRC staff's adverse determination by filing a challenge within 5 days of receipt of that determination with: (a) The presiding officer designated in this proceeding; (b) if no presiding officer has been appointed, the Chief Administrative Judge, or if he or she is unavailable, another administrative judge, or an Administrative Law Judge with jurisdiction pursuant to 10 CFR 2.318(a); or (c) if another officer has been designated to rule on information access issues, with that officer.

(3) Further appeals of decisions under this paragraph must be made pursuant to 10 CFR 2.311.

H. Review of Grants of Access. A party other than the requester may challenge an NRC staff determination granting access to SUNSI whose release would harm that party's interest independent of the proceeding. Such a challenge must be filed within 5 days of the notification by the NRC staff of its grant of access and must be filed with: (a) The presiding officer designated in this proceeding; (b) if no presiding officer has been appointed, the Chief Administrative Judge, or if he or she is unavailable, another administrative judge, or an Administrative Law Judge with jurisdiction pursuant to 10 CFR 2.318(a); or (c) if another officer has been designated to rule on information access issues, with that officer.

If challenges to the NRC staff determinations are filed, these procedures give way to the normal process for litigating disputes concerning access to information. The availability of interlocutory review by the Commission of orders ruling on such NRC staff determinations (whether granting or denying access) is governed by 10 CFR 2.311.[3]

I. The Commission expects that the NRC staff and presiding officers (and any other reviewing officers) will consider and resolve requests for access to SUNSI, and motions for protective orders, in a timely fashion in order to minimize any unnecessary delays in identifying those petitioners who have standing and who have propounded contentions meeting the specificity and basis requirements in 10 CFR part 2. The attachment to this Order summarizes the general target schedule for processing and resolving requests under these procedures.

It is so ordered.

Dated at Rockville, Maryland, this 29th day of December, 2016.

For the Nuclear Regulatory Commission.

Annette L. Vietti-Cook,

Secretary of the Commission.

Attachment 1—General Target Schedule for Processing and Resolving Requests for Access to Sensitive Unclassified Non-Safeguards Information in This Proceeding

Day	Event/Activity
0	Publication of **Federal Register** notice of hearing and opportunity to petition for leave to intervene, including order with instructions for access requests.
10	Deadline for submitting requests for access to Sensitive Unclassified Non-Safeguards Information (SUNSI) with information: Supporting the standing of a potential party identified by name and address; describing the need for the information in order for the potential party to participate meaningfully in an adjudicatory proceeding.
60	Deadline for submitting petition for intervention containing: (i) Demonstration of standing; and (ii) all contentions whose formulation does not require access to SUNSI (+25 Answers to petition for intervention; +7 petitioner/requestor reply).
20	U.S. Nuclear Regulatory Commission (NRC) staff informs the requester of the staff's determination whether the request for access provides a reasonable basis to believe standing can be established and shows need for SUNSI. (NRC staff also informs any party to the proceeding whose interest independent of the proceeding would be harmed by the release of the information.) If NRC staff makes the finding of need for SUNSI and likelihood of standing, NRC staff begins document processing (preparation of redactions or review of redacted documents).
25	If NRC staff finds no "need" or no likelihood of standing, the deadline for petitioner/requester to file a motion seeking a ruling to reverse the NRC staff's denial of access; NRC staff files copy of access determination with the presiding officer (or Chief Administrative Judge or other designated officer, as appropriate). If NRC staff finds "need" for SUNSI, the deadline for any party to the proceeding whose interest independent of the proceeding would be harmed by the release of the information to file a motion seeking a ruling to reverse the NRC staff's grant of access.
30	Deadline for NRC staff reply to motions to reverse NRC staff determination(s).
40	(Receipt +30) If NRC staff finds standing and need for SUNSI, deadline for NRC staff to complete information processing and file motion for Protective Order and draft Non-Disclosure Affidavit. Deadline for applicant/licensee to file Non-Disclosure Agreement for SUNSI.
A	If access granted: Issuance of presiding officer or other designated officer decision on motion for protective order for access to sensitive information (including schedule for providing access and submission of contentions) or decision reversing a final adverse determination by the NRC staff.
A + 3	Deadline for filing executed Non-Disclosure Affidavits. Access provided to SUNSI consistent with decision issuing the protective order.

[2] Any motion for Protective Order or draft Non-Disclosure Affidavit or Agreement for SUNSI must be filed with the presiding officer or the Chief Administrative Judge if the presiding officer has not yet been designated, within 30 days of the deadline for the receipt of the written access request.

[3] Requesters should note that the filing requirements of the NRC's E-Filing Rule (72 FR 49139; August 28, 2007, as amended at 77 FR 46562; August 3, 2012) apply to appeals of NRC staff determinations (because they must be served on a presiding officer or the Commission, as applicable), but not to the initial SUNSI request submitted to the NRC staff under these procedures.

ATTACHMENT 1—GENERAL TARGET SCHEDULE FOR PROCESSING AND RESOLVING REQUESTS FOR ACCESS TO SENSITIVE UNCLASSIFIED NON-SAFEGUARDS INFORMATION IN THIS PROCEEDING—Continued

Day	Event/Activity
A + 28	Deadline for submission of contentions whose development depends upon access to SUNSI. However, if more than 25 days remain between the petitioner's receipt of (or access to) the information and the deadline for filing all other contentions (as established in the notice of opportunity to request a hearing and petition for leave to intervene), the petitioner may file its SUNSI contentions by that later deadline.
A + 53	(Contention receipt +25) Answers to contentions whose development depends upon access to SUNSI.
A + 60	(Answer receipt +7) Petitioner/Intervenor reply to answers.
>A + 60	Decision on contention admission.

[FR Doc. 2016–31931 Filed 1–4–17; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Request To Amend a License To Export Radioactive Waste

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 110.70(b) ''Public Notice of Receipt of an Application,'' please take notice that the U.S. Nuclear Regulatory Commission (NRC) has received the following request for an export license amendment. The changes being requested are: (1) Change the company name from Duratek to EnergySolutions Services, Inc., and (2) extend the date of expiration from December 31, 2016 to December 31, 2021. A copy of the request is available electronically through the Agencywide Documents Access and Management System (ADAMS), and can be accessed online in the ADAMS Public Documents collection at *http://www/nrc/gov/reading-rm/adams.html.* To begin the search, select ''*ADAMS public Documents*'' and then select ''*Begin Web-based ADAMS Search.*'' For problems with ADAMS, please contact the NRC's Public Document Room reference staff at 1–800–397–4209, 301–415–4737, or by email to *pdr.resource@nrc.gov.* The ADAMS accession number for each document referenced is provided in the ''*Description of Material.*''

A request for a hearing or petition for leave to intervene may be filed within 30 days after publication of this notice in the **Federal Register** (FR). Any request for hearing or petition for leave to intervene shall be served by the requestor or petitioner upon the applicant, the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555; the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555; and the Executive Secretary, U.S. Department of State, Washington, DC 20520.

A request for a hearing or petition for leave to intervene may be filed with the NRC electronically in accordance with NRC's E-Filing rule promulgated in August 2007, 72 FR 49139; August 28, 2007. Information about filing electronically is available on the NRC's public Web site at *http://www.nrc.gov/site-help/e-submittals.html.* To ensure timely electronic filing, at least 5 days prior to the filing deadline, the petitioner/requestor should contact the Office of the Secretary by email at *HEARINGDOCKET@NRC.GOV,* or by calling (301) 415–1677, to request a digital ID certificate and allow for the creation of an electronic docket.

In addition to a request for hearing or petition for leave to intervene, written comments, in accordance with 10 CFR 110.81, should be submitted within thirty days after publication of this notice in the **Federal Register** to Office of the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Rulemaking and Adjudications.

The information concerning this application for an export license follows. Background licensing actions associated with this amendment can be accessed online in ADAMS Public Documents, or can be requested of the NRC licensing officer at 301–287–9059.

NRC EXPORT LICENSE AMENDMENT APPLICATION

Name of applicant date of application date received application No. docket No. ADAMS accession No.	Description of material		End use	Country of destination
	Material type	Total quantity		
EnergySolutions Services, Inc., October 21, 2016, October 27, 2016, XW018/01, 11005897, ML16301A166.	No change in material requested (low-level radioactive waste resulting from the incineration of hearth ash non-conforming materials).	No increase (up to a maximum total of 1,000 tons of low-level waste).	Amend to: (1) Change the company name from Duratek to EnergySolutions Services, Inc., and (2) extend the date of expiration from December 31, 2016 to December 31, 2021.	Germany.

Dated this 29th day of December 2016 at Rockville, Maryland.

For The Nuclear Regulatory Commission.

Andy Imboden,

Acting Director, Office of International Programs.

[FR Doc. 2016–31989 Filed 1–4–17; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Request To Amend a License To Import Radioactive Waste

Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 110.70(b)

''Public Notice of Receipt of an Application,'' please take notice that the U.S. Nuclear Regulatory Commission (NRC) has received the following request for an import license amendment. The changes being requested are: (1) Change the company name from Duratek to EnergySolutions Services, Inc., and (2) extend the date of expiration from December 31, 2016 to December 31, 2021. A copy of the request is available electronically through the Agencywide Documents Access and Management System (ADAMS), and can be accessed online in the ADAMS Public Documents collection at *http://www/nrc/gov/reading-rm/adams.html.* To begin the search, select ''*ADAMS public Documents*'' and then select ''*Begin Web-based ADAMS Search.*'' For problems with ADAMS, please contact the NRC's Public Document Room reference staff at 1–800–397–4209, 301–415–4737, or by email to *pdr.resource@nrc.gov.* The ADAMS accession number for each document referenced is provided in the ''*Description of Material.*''

A request for a hearing or petition for leave to intervene may be filed within 30 days after publication of this notice in the **Federal Register** (FR). Any request for hearing or petition for leave to intervene shall be served by the requestor or petitioner upon the applicant, the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555; the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555; and the Executive Secretary, U.S. Department of State, Washington, DC 20520.

A request for a hearing or petition for leave to intervene may be filed with the NRC electronically in accordance with NRC's E-Filing rule promulgated in August 2007, 72 FR 49139; August 28, 2007. Information about filing electronically is available on the NRC's public Web site at *http://www.nrc.gov/site-help/e-submittals.html.* To ensure timely electronic filing, at least 5 days prior to the filing deadline, the petitioner/requestor should contact the Office of the Secretary by email at *HEARINGDOCKET@NRC.GOV*, or by calling (301) 415–1677, to request a digital ID certificate and allow for the creation of an electronic docket.

In addition to a request for hearing or petition for leave to intervene, written comments, in accordance with 10 CFR 110.81, should be submitted within thirty days after publication of this notice in the **Federal Register** to Office of the Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Rulemaking and Adjudications.

The information concerning this import license amendment application follows. Background licensing actions associated with this amendment can be accessed online in ADAMS Public Documents, or can be requested of the NRC licensing officer at 301–287–9059.

NRC IMPORT LICENSE APPLICATION

Name of applicant, date of application, date received, application No., docket No., ADAMS accession No.	[Description of Material]			
	Material type	Total quantity	End use	Country from
EnergySolutions Services, Inc., October 27, 2016, October 31, 2016, IW029/01, 11005896, ML16305A003.	No change in material requested (low-level radioactive waste resulting from the incineration of hearth ash non-conforming materials).	No increase (up to a maximum total of 1,000 tons of low-level waste).	Amend to: (1) Change the company name from Duratek to EnergySolutions Services, Inc., and (2) extend the date of expiration from December 31, 2016 to December 31, 2021..	Germany.

For The Nuclear Regulatory Commission.

Dated this 29th day of December 2016, at Rockville, Maryland.

Andy Imboden,

Acting Director, Office of International Programs.

[FR Doc. 2016–31988 Filed 1–4–17; 8:45 am]

BILLING CODE 7590–01–P

PENSION BENEFIT GUARANTY CORPORATION

Requests for Approving Certain Alternative Methods for Computing Withdrawal Liability; Settlement of Withdrawal and Mass Withdrawal Liability

AGENCY: Pension Benefit Guaranty Corporation.

ACTION: Request for information.

SUMMARY: This is a request for information (RFI) to inform PBGC on issues arising from arrangements between employers and multiemployer plans involving an alternative ''two-pool'' withdrawal liability method. PBGC seeks information from the general public and all interested stakeholders, including multiemployer plan participants and beneficiaries, organizations serving or representing retirees and other such individuals, multiemployer plan sponsors and professional advisors, contributing employers, unions, and other interested parties about these arrangements, including the various forms these arrangements may take, the terms and conditions that apply to new and existing contributing employers who enter into such arrangements, and the benefits and risks these arrangements may present to multiemployer plans and their participants, employers, the multiemployer pension insurance program, and other stakeholders in the multiemployer system.

DATES: Comments must be received on or before February 21, 2017 to be assured of consideration.

ADDRESSES: Comments may be submitted by any of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the Web site instructions for submitting comments.
- *Email: liebman.daniel@pbgc.gov* or *markakis.constance@pbgc.gov.*
- *Mail or Hand Delivery:* Regulatory Affairs Group, Office of the General Counsel, Pension Benefit Guaranty Corporation, 1200 K Street NW., Washington, DC 20005–4026.

Comments received, including personal information provided, will be posted to *www.pbgc.gov.* Copies of comments may also be obtained by writing to Disclosure Division, Office of the General Counsel, Pension Benefit Guaranty Corporation, 1200 K Street NW., Washington, DC 20005–4026 or calling 202–326–4040 during normal business hours. (TTY and TDD users may call the Federal relay service toll-free at 1–800–877–8339 and ask to be connected to 202–326–4040.)

FOR FURTHER INFORMATION CONTACT: Daniel S. Liebman (*liebman.daniel@pbgc.gov*), Deputy Assistant General Counsel for Legal Policy, Office of the General Counsel, at 202–326–4000, ext. 6510, or Constance Markakis (*markakis.constance@pbgc.gov*), Assistant Chief Counsel for Multiemployer Law and Policy, Office of the General Counsel, at 202–326–4000, ext. 6779; (TTY/TDD users may call the Federal relay service toll-free at 1–800–877–8339 and ask to be connected to 202–326–4000, ext. 6510 or ext. 6779.)

SUPPLEMENTARY INFORMATION:

Background

The Pension Benefit Guaranty Corporation (''PBGC'') is a federal corporation created under the Employee Retirement Income Security Act of 1974 (''ERISA'') to guarantee the payment of pension benefits earned by more than 39 million American workers and retirees in nearly 24,000 private-sector defined benefit pension plans. PBGC administers two insurance programs—one for single-employer defined benefit pension plans and a second for multiemployer defined benefit pension plans. Each program is operated and financed separately from the other, and assets from one cannot be used to support the other. The multiemployer program protects benefits of approximately 10 million workers and retirees in approximately 1,400 plans.

Multiemployer Plan Withdrawal Liability in General

A multiemployer pension plan is a collectively bargained plan involving two or more unrelated employers and is generally operated and administered by a joint board of trustees consisting of an equal number of employer and union appointees.

Under ERISA, an employer that withdraws from a multiemployer pension plan in a complete or partial withdrawal may be liable to the plan for withdrawal liability. The purpose of withdrawal liability is to ameliorate the effects of an employer leaving a plan without paying its proportionate share of the plan's unfunded benefit obligations, which could undermine the plan's funding and increase the burden and risk to remaining employers, plan participants, and the multiemployer insurance program. It is important to note, however, that no matter how underfunded a plan may be, withdrawal liability only becomes payable upon the occurrence of a complete or partial withdrawal, as defined in sections 4203 and 4205 of ERISA, respectively.[1]

In either case, the plan sponsor (typically the plan's board of trustees) is responsible for determining whether a complete or partial withdrawal has occurred, and, if so, the amount of any withdrawal liability and the employer's withdrawal liability payment schedule. Disputes between plans and employers with respect to withdrawal liability are required to be first resolved through arbitration and then, if necessary, the courts. Based on the structure of this statutory scheme, PBGC has not issued advisory opinions on whether a particular transaction or type of transaction would constitute a complete or partial withdrawal under ERISA, or the plan's calculation of liability for such a withdrawal.

Two aspects of withdrawal liability that are particularly relevant to this RFI are (1) the method for determining a withdrawing employer's allocable share of the plan's unfunded vested benefits (''UVBs'') as provided under ERISA section 4211 (referred to in this RFI as ''withdrawal liability allocation''), and (2) the amount and payment of an employer's withdrawal liability under section 4219 (referred to in this RFI as ''withdrawal liability payment'').[2] Each of these aspects of withdrawal liability is discussed below.

General Legal Framework of Withdrawal Liability Allocation

There are four statutory methods for allocating UVBs to withdrawing employers under ERISA section 4211. These methods generally allocate all of a plan's UVBs (as determined under each method) among all employers participating in the plan, or among the employers who participated in the plan in the year the UVBs arose, based on the employer's share of total contributions.[3] An employer's withdrawal liability is determined based on its allocable share of the plan's UVBs under the plan's allocation method, subject to adjustment.[4]

In addition to the statutory methods, ERISA section 4211(c)(5)(A) requires PBGC to provide by regulation a procedure by which a plan may be amended to adopt an alternative method for allocating UVBs to employers that withdraw, subject to PBGC approval based on a determination that the method would not significantly increase the risk of loss to participants and beneficiaries or to the multiemployer insurance program. In determining whether an alternative withdrawal liability method satisfies that standard, PBGC applies the following criteria, which are set forth in 29 CFR 4211.23(b):

(1) The method allocates the plan's UVBs, both for the adoption year and for the five subsequent plan years, to the same extent as any of the statutory allocation methods;

(2) The method allocates UVBs on the basis of the withdrawn employer's share of contributions or UVBs attributable to the employer; and

(3) The method fully reallocates among employers that have not withdrawn from the plan all UVBs that the plan sponsor has determined cannot be collected from withdrawn employers, or that are not assessed against withdrawn employers because of sections 4209, 4219(c)(1)(B), or 4225 of ERISA.

The regulation also sets forth the applicable filing and information requirements for a multiemployer plan that seeks PBGC approval of an alternative withdrawal liability method. While the regulation does not require actuarial and other financial information, such as projected cash flows with and without a two-pool allocation arrangement, as part of the application, PBGC has the authority to

[1] Section 4203(a) of ERISA provides that a complete withdrawal generally occurs when an employer (1) permanently ceases to have an obligation to contribute under the plan, or (2) permanently ceases all covered operations under the plan. Section 4212, in turn, defines an obligation to contribute under a plan as an obligation arising under one or more collective bargaining (or related) agreements or as an obligation arising under applicable labor-management relations law. It also provides that if a principal purpose of any transaction is to evade or avoid liability under Title IV's withdrawal liability rules, those rules will be applied (and liability determined and collected) without regard to such transaction. The statute provides different factors for determining when a complete withdrawal occurs in the building and construction and entertainment industries. The rules for partial withdrawals, which generally are not relevant for purposes of this RFI, are contained in section 4205 of ERISA.

[2] The combination of a plan's determining withdrawal liability allocation and the establishment of terms and conditions of withdrawal liability payment are generally referred to in this RFI as ''withdrawal liability arrangements.''

[3] Under ERISA sections 4211(b) and (c), the presumptive method, modified presumptive method, and rolling-five method allocate UVBs among employers based on contributions; the direct attribution method allocates UVBs based on assets and liabilities attributable to the employer and its employees as well as amounts that are uncollectable from employers that have previously withdrawn or that are insolvent. Under ERISA section 4211(c)(1), building and construction industry plans are prohibited from using any allocation method other than the single pool presumptive method set forth in ERISA section 4211(b), as applied to employers that perform work in the building and construction industry.

[4] Under section 4209 of ERISA, for example, the amount of UVBs allocable to an employer that withdraws may be reduced by $50,000 or three-quarters of one percent (.0075) of the plan's UVBs, whichever is less.

require a plan sponsor to submit any information necessary to review an alternative allocation method.[5]

PBGC's authority to review and approve an alternative withdrawal liability allocation method request is limited to the application of Title IV of ERISA, and any decision to approve or deny such as request is subject to reconsideration under Part 4003 of PBGC's regulations. Finally, in accordance with ERISA section 4214, multiemployer plan amendments and rules authorized under Title IV must operate and be applied uniformly with respect to each employer with the exception that special provisions may be made to take into account the creditworthiness of an employer.

General Legal Framework of Withdrawal Liability Payment

As soon as practicable after an employer's withdrawal, the plan sponsor must notify the employer of the amount of its withdrawal liability—determined in accordance with one of the statutory allocation methods discussed above, or if approved by PBGC, an alternative method—and provide a payment schedule.

Section 4219(c) of ERISA governs the payment of withdrawal liability. Under section 4219(c)(1)(A), an employer's withdrawal liability must be paid over the number of years necessary to amortize its withdrawal liability, but in no event more than 20 years (an exception to the 20-year cap applies in the case of a mass withdrawal). The plan calculates the annual amount of withdrawal liability payment due under a formula set forth in the statute that is intended to approximate the level of contributions the employer would have made had the employer not withdrawn.[6]

Sections 4219(c)(7) and 4224 of ERISA, which are virtually identical, provide plan sponsors with some latitude regarding the satisfaction of an employer's withdrawal liability. They provide that a plan may adopt other rules for terms and conditions for the satisfaction of an employer's withdrawal liability allocation if such rules are consistent with ERISA and PBGC regulations. The legislative history of ERISA section 4224 indicates that the purpose of providing latitude in this area is to enable trustees to weigh the costs of collection against the expected return in order to maximize net recovery consistent with their fiduciary duties.

PBGC has issued a regulation under 29 CFR part 4219 that provides rules on the notice, collection, and redetermination of withdrawal liability, but that regulation does not address a plan's adoption of alternative terms and conditions for the satisfaction of an employer's withdrawal liability. PBGC has not issued a regulation under ERISA section 4224, though PBGC has the authority to prescribe such a regulation.

Consistent with the legislative history of these provisions, PBGC has previously noted that the decision to modify and reduce an employer's withdrawal liability payment pursuant to plan rules adopted in accordance with sections 4219(c)(7) and 4224 of ERISA is subject to the fiduciary standards prescribed by Title I of ERISA.[7] Thus, in addition to compliance with ERISA, and any applicable provision in PBGC regulations, plan actions must meet fiduciary standards. The United States Department of Labor, Employee Benefit Security Administration (''EBSA''), is responsible for enforcing the fiduciary standards prescribed by Title I of ERISA. Any questions concerning the application of the fiduciary standards in a specific case should be directed to EBSA.

Mass Withdrawal Liability

In addition to the withdrawal liability rules discussed above, ERISA provides special rules for calculating withdrawal liability in the event of a mass withdrawal. In general, a mass withdrawal occurs upon the withdrawal of every contributing employer, the cessation of the obligation of all employers to contribute under the plan, or the withdrawal of substantially all of a plan's contributing employers pursuant to an agreement or arrangement to withdraw.[8]

In a mass withdrawal, employers generally lose the benefit of any applicable *de minimis* reduction under section 4209(c), and any reduction due to the 20-year payment cap limitation under section 4219(c)(1)(D)(i) of ERISA. In addition, employers are subject to ''reallocation liability,'' which is the amount required to allocate fully a plan's UVBs among the withdrawing employers, including liability for UVBs not otherwise collectible by the plan, such as amounts uncollectible due to the bankruptcy of other employers, and a recalculation of UVBs based on PBGC plan termination discount rates and other prescribed assumptions. While these factors may increase the amount of UVBs allocable to an employer, they generally do not affect the amount of the employer's withdrawal liability installment payments, merely the duration of those payments.

PBGC has promulgated a regulation, 29 CFR part 4219, which sets rules for determining reallocation liability. The regulation also permits plans to adopt alternative rules, provided that such rules allocate the plan's UVBs to substantially the same extent as the prescribed rules.

Requests for PBGC Approval of Two-Pool Alternative Withdrawal Liability

In an effort to encourage new employers who may be reluctant to participate in multiemployer plans due to withdrawal liability, as well as current contributing employers who may be reluctant to continue, some plans have been exploring plan design changes to mitigate and manage withdrawal liability.[9] One such plan design change is a ''two-pool'' alternative withdrawal liability arrangement.[10]

While there are significant variations in the form and substance of such arrangements, they all include a change to an alternative method for allocating UVBs under a plan, which requires PBGC approval under ERISA section 4211(c)(5). If approved, the change essentially results in the creation of two separate withdrawal liability pools: A ''new pool'' [11] of UVBs relating to the future liabilities of ''new employers'' and an ''old pool'' of UVBs relating to the past and future liabilities of ''existing employers.'' In general, an

[5] 29 CFR 4211.22(e).

[6] Under ERISA section 4219(c)(1), each annual payment is the product of (1) the employer's highest contribution rate in the ten plan years ending with the year of withdrawal, and (2) the average number of contribution base units (*e.g.,* hours worked) for the highest three consecutive plan years during the 10-year period preceding the year of withdrawal. Section 305(g) of ERISA, as added by the Multiemployer Reform Act of 2014 (''MPRA''), provide special rules for determining, among other things, an employer's highest contribution rate for plans in endangered and critical status under sections 305(b)(1) and (b)(2), respectively.

[7] PBGC Op. Ltr. (Aug. 19, 1991); *see also* PBGC Op. Ltr. 82–24 (Aug. 5, 1982).

[8] See ERISA section 4041A(a)(2) and 29 CFR 4001.2.

[9] In addition to large and financially strong employers, small employers are also concerned about the burden of withdrawal liability. See *e.g.,* testimony on burden of withdrawal on small employers at House Education and the Workforce Subcommittee on Health, Employment, Labor, and Pensions Hearing on ''Strengthening the Multiemployer Pension System: How Will Proposed Reforms Affect Employers, Workers, and Retirees?,'' October 29, 2013. *http://edworkforce.house.gov/uploadedfiles/duncan_testimony_written.pdf.*

[10] The two-pool method described in this RFI is also sometimes referred to as a hybrid withdrawal liability allocation method. A statutory allocation method under ERISA section 4211 involving plans in existence prior to 1980 has also been referred to as a two-pool method but this method is not the same as the two-pool methods described in this RFI.

[11] The new pool often allocates UVBs under the direct attribution method.

alternative method such as this is permissible if it satisfies the statutory and regulatory requirements under ERISA section 4211 discussed above.[12]

For existing employers that transition to the new pool, withdrawal liability is assessed at then-current UVB levels and annual payment amounts. Any future increases in UVBs in the old pool[13] and ''unassessable'' liabilities[14] are allocated solely to, and payable by, the remaining employers in the old pool. In exchange for relief from future increases in withdrawal liability under the old pool, existing employers that transition to the new pool must generally pay, or begin to pay, their frozen old-pool withdrawal. This, in turn may provide needed income to the plan and potentially extend plan solvency.

PBGC Experience

PBGC handles requests for approval of two-pool alternative withdrawal liability arrangements on a case-by-case basis. Since 2011, PBGC has received about twenty requests to approve two-pool alternative withdrawal liability arrangements. PBGC approved some early requests for two-pool alternative allocation methods, finding that they satisfied the regulatory requirements under 29 CFR 4211.23. However, those requests did not seek approval of the specific terms and conditions the plans were separately arranging with existing employers and such information was not included in the documentation submitted to PBGC under section 4211(c) of ERISA and the regulations thereunder. (In other, later cases, PBGC has been asked to approve the special plan rules on payment and settlement terms.)

PBGC has observed that some plans have offered existing employers favorable settlement terms on their withdrawal liability allocation or payments, such as discounted lump sum or accelerated payments, reduced allocation amounts, lower annual payment amounts, or modified payment schedules. In some cases, new and transitioning employers have also received relief from contribution rate increases that apply to employers remaining in the old pool. Finally, and perhaps most significantly, under some arrangements, employers have asked the plan for relief in the event of mass withdrawal liability, because reallocation and redetermination liability can substantially increase an employer's liability to the plan.[15]

With respect to the early cases PBGC approved, information regarding the terms of the settlements could have affected PBGC's analysis of whether the statutory criteria had been satisfied. Thus, PBGC's current practice is to request information on any proposed withdrawal liability settlement arrangements at the outset of PBGC's analysis of the alternative allocation method approval request.

Evaluating the impact of a two-pool method on participants and beneficiaries and the multiemployer insurance program is a highly complex matter, involving analysis of the probability of various events and comparing the actuarial present value of benefits under various scenarios to form an opinion about the merits of a proposed method. For more complex situations, PBGC may ask for certain actuarial information from the plan and inquire into the financial situations of various employers.[16] PBGC analyzes the information to see if there is reason to believe that changes in the allocation method and settlement structure create a potential risk of loss. If PBGC finds that there is a substantial risk of loss, PBGC engages with the plan trustees and their representatives to discuss possible modifications to the proposal to mitigate that risk.

While PBGC has gained considerable experience in analyzing several complicated two-pool alternative withdrawal liability requests over the last three years, the practice of adopting two-pool alternative withdrawal liability allocation methods and accompanying withdrawal liability payment arrangements is still evolving as plan sponsors become more aware of the sensitive balancing of risks and benefits among stakeholders implicated by two-pool alternative allocation methods. Plan sponsors continue to propose innovative ways to encourage long-term commitments of employers and contributions to multiemployer plans, and PBGC encourages the innovative use of existing statutory and regulatory tools to reduce risk to employers (*e.g.,* investment risk and orphan liability risk) while protecting promised benefits. PBGC also benefits from learning about such innovative practices, which in turn allows PBGC to be a resource to other plans looking for ways to stabilize and increase their contribution base.

Request for Information

PBGC is requesting information from the general public and all interested stakeholders, including multiemployer plan participants and beneficiaries, organizations serving or representing retirees and other such individuals, multiemployer plan sponsors and professional advisors, contributing employers, unions, and other interested parties about these arrangements. PBGC is particularly interested in learning about the terms and conditions that apply to new and existing contributing employers that enter into such arrangements, including:

- Alternative benefit schedules,
- special allocation and payment terms for withdrawal liability and mass withdrawal liability,
- the various forms alternative withdrawal liability arrangements may take, and
- the benefits and risks these arrangements may present to participants and the multiemployer insurance program.

In addition to those general issues, PBGC is also seeking comment and information on the specific questions listed below.

In responding to this RFI, please provide as much specificity and detail as possible, as well as any supporting documentation, including any relevant research and analyses related to two-pool alternative withdrawal liability arrangements. Respondents need not answer all of the questions below.

Plan and Employer Objectives in Establishing Two-Pool Withdrawal Liability Allocation Methods and Payment Terms

- What are the potential benefits, if any, of two-pool arrangements for plans, active participants, retirees, terminated participants and beneficiaries of existing contributing employers, potential new contributing employers, unions, and PBGC?
- What are the potential risks, if any, of two-pool arrangements for plans, active participants, retirees, terminated participants and beneficiaries of existing

[12] Building and construction industry plans may adopt an alternative allocation method only for non-construction industry employers.

[13] Underfunding may increase for a variety of reasons, including from investment losses and increases in ''orphan liability'' (*i.e.,* liabilities of the plan to pay benefits to retirees of companies that have withdrawn from the plan and that are no longer making contributions).

[14] *I.e.,* Such as liabilities relating to transitioning employers in excess of the 20-year payment cap.

[15] As an example in the case of redetermination liability, assume an employer's allocable share of unfunded vested benefits as of the end of 2016 is $60M. If the employer's annual withdrawal liability payment is $2.5M (based on its highest rate and highest average 3-year contribution base units for the preceding 10 years) and the present value of such payments capped at 20 years is $30M, then the employer's liability would potentially double if the employer became subject to mass withdrawal liability.

[16] PBGC has identified the need for certain technical requirements in all such proposals (*e.g.,* the requirement that the two pools collapse if, for example, all employers transition to the new pool, and the requirement that assets in excess of benefits in the new pool be allocated to the old pool).

contributing employers, potential new contributing employers, unions, and PBGC?

• In a two-pool withdrawal liability allocation arrangement that permits existing employers to be treated as new employers, what factors would a board of trustees consider in determining whether to allow an existing employer to be treated as a new employer?

• In a two-pool withdrawal liability allocation arrangement that permits existing employers to be treated as new employers, how should discounted withdrawal liability settlements, or the potential for such settlements, factor in PBGC's significant risk analysis under 29 CFR 4211.23(a)?

• In a two-pool withdrawal liability allocation arrangement that includes changes to a plan's mass withdrawal liability allocation rules, how should such changes factor in PBGC's significant risk analysis under 29 CFR 4211.23(a)?

• Given that the terms for participation in a new employer pool may vary among plans, are there certain terms and conditions of two-pool withdrawal liability arrangements that raise particular issues of significant risk?

• How do plans evaluate any tradeoffs between short-term benefits of adoption of two-pool alternative withdrawal liability arrangements (*e.g.,* infusion of new capital, retention of employers) and long-term risks created thereby?

• What are the public's views on other interests that may be affected by two-pool withdrawal liability allocation methods and special settlement terms that apply only to new-pool employers? Are there distinct interests among small businesses, participants, large employers, and plans? Are there distinct interests of orphan participants?

• How would widespread implementation of two-pool alternative withdrawal liability arrangements impact the larger multiemployer insurance system?

• Are there alternative arrangements for dealing with withdrawal liability concerns addressed by two-pool alternative withdrawal liability allocation methods that plans are considering that achieve the same goals (including, in particular, alternatives to providing mass withdrawal liability relief)?

Plan Experience and Expected Future Action

• Should PBGC anticipate more plans contemplating adoption of two-pool alternative withdrawal liability arrangements? If so, is this seen as a relatively temporary phenomenon or something that could be a lasting feature of plan risk management?

• Are there plans that considered adopting two-pool alternative withdrawal liability allocation arrangements but decided against it? If so, why?

• What is the role of collective bargaining in the creation and implementation of two-pool alternative withdrawal liability arrangements?

• For a plan that has adopted a two-pool alternative withdrawal liability arrangement that allows existing employers to participate in the new pool, did the arrangement affect the plan's ability to retain existing employers that otherwise would have withdrawn? Please provide examples to the extent possible.

• For a plan that has adopted a two-pool alternative withdrawal liability arrangement, did the arrangement affect the plan's ability to increase its contribution base as a result? Please provide examples to the extent possible.

• For a plan that has adopted a two-pool alternative withdrawal liability arrangement, have there been any legal challenges related to any aspect of the arrangement by employers, unions, or participants and beneficiaries. If so, please provide examples to the extent possible.

PBGC Role

• Would the public and stakeholders find it useful to learn more from PBGC about innovative means proposed by some plans to balance the interests of all stakeholders and reduce the risk of loss? For instance, some trustees require a commitment to remain in the plan in exchange for withdrawal liability relief. Also, in balancing stakeholder interests, trustees of some plans offer relief from reallocation liability but not redetermination liability, or condition mass withdrawal liability relief on remaining in the plan through plan insolvency.

• How can PBGC better identify the interests of all stakeholders impacted by two-pool alternative withdrawal liability arrangements?

• Should PBGC separately, or at least formally as part of a request for approval of an alternative withdrawal liability allocation method, approve proposed withdrawal liability payment terms and conditions?

• What are the benefits to plans and other stakeholders from PBGC approval of two-pool alternative withdrawal liability arrangements?

• Is there a need for PBGC to more widely communicate its process for considering two-pool alternative withdrawal liability arrangement approval requests?

Information Issues

• What is the quality of notices given to all employers and to all employee organizations by plans about the adoption of an amendment to the plan to implement a two-pool method of withdrawal liability allocation? What type(s) of information would participants and beneficiaries find most helpful?

• What information should PBGC require to be submitted in a request for PBGC approval of two-pool alternative withdrawal liability allocation methods? Are there ways to minimize burden on plans and participating employers in providing such information in an initial application?

• What types of actuarial and administrative information and data do multiemployer plans generally maintain that would allow PBGC to analyze the impact on the risk of loss to the plan and participants of settlement terms for mass withdrawal liability for employers jumping to a new pool? Is there some actuarial information, particularly cash flow information that is not readily available?

Although PBGC is specifically requesting comments on the issues and questions discussed above, PBGC also invites comment on any other issue relating to alternative withdrawal liability arrangements. PBGC's consideration of public comments is independent of, and without prejudice to, PBGC's ongoing review and determination of any request for approval of any alternative allocation arrangement.

Signed in Washington, DC.

W. Thomas Reeder,

Director, Pension Benefit Guaranty Corporation.

[FR Doc. 2016–31715 Filed 1–4–17; 8:45 am]

BILLING CODE 7709–02–P

RAILROAD RETIREMENT BOARD

Sunshine Act: Notice of Public Meeting

Notice is hereby given that the Railroad Retirement Board will hold a meeting on January 18, 2017, 10:00 a.m. at the Board's meeting room on the 8th floor of its headquarters building, 844 North Rush Street, Chicago, Illinois 60611. The agenda for this meeting follows:

Portion open to the public:

(1) Executive Committee Reports.

The person to contact for more information is Martha P. Rico, Secretary to the Board, Phone No. 312–751–4920.

Dated: January 3, 2017.

Martha P. Rico,

Secretary to the Board.

[FR Doc. 2017–00005 Filed 1–3–17; 11:15 am]

BILLING CODE 7905–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–79701; File No. SR–NASDAQ–2016–175]

Self-Regulatory Organizations; The NASDAQ Stock Market LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Amend Rule 7022(d)

December 29, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on December 15, 2016, The NASDAQ Stock Market LLC (''Nasdaq'' or ''Exchange'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I, II, and III, below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of the Substance of the Proposed Rule Change

The Exchange proposes to amend Rule 7022(d) to increase the monthly fee for Nasdaq's Daily List and Fundamental Data report from $1,500 to $1,750.

The text of the proposed rule change is available on the Exchange's Web site at *http://nasdaq.cchwallstreet.com,* at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of the proposed rule change is to amend Rule 7022(d) to increase the monthly fee for Nasdaq's Daily List and Fundamental Data report from $1,500 to $1,750. The Daily List provides important corporate action data—including new listings, delistings, symbol and name changes, and dividends—for the Nasdaq Stock Market and the Mutual Fund Quotation Service (''MFQS'') to the trading and market data community. Specifically, the Daily List is comprised of the following four data sets:

- *Nasdaq Equity Data:* Provides advance notification of new listings, delistings, corporate name changes, trading symbol changes, market tier changes, and Financial Status Indicator changes that occur on all tiers of the Nasdaq Stock Market.
- *Mutual Fund Data:* Provides advance notification of new listings, delistings, corporate name changes and fund identifier changes for mutual funds, money market funds and unit investment trusts that report via MFQS.
- *Dividends:* Provides advance notification of cash dividends, stock dividends, and stock splits for Nasdaq securities.
- *Next Day Ex-Date:* Summarizes the securities with dividend adjustments to be applied to the previous closing price on the next business day.

In addition, Nasdaq recently enhanced the Daily List by adding (i) a tick pilot indicator that provides information about the status of each security under the Tick Size Pilot Program [3] and (ii) a flag to identify securities that are exchange-traded funds (''ETFs'') and exchange-traded managed funds (''ETMFs'').

Daily List files are available via secured Web site or secured file transfer protocol server and are posted and updated intraday. The Daily List also includes access to historical Daily List data dating back to either 1998 or 1999 (depending on the information).

The Fundamental Data report provides a summary file of the prior day's trading activity for all Nasdaq-listed issues. Specifically, the report includes the following elements:

- *Security Master Information:* Issue Name, Issue Symbol, Issue Type, Issue Class, Listing Market Tier, Total Shares Outstanding, Public Float and Nasdaq Index Membership.
- *Consolidated Market Statistics:* Daily High Price, Daily Low Price, Daily Last Sale Price, Daily Share Volume, 52 Week High Price, 52 Week Low Price, Year-To-Date Volume
- *Nasdaq Market Center Statistics:* Nasdaq Official Closing Price and Nasdaq Closing Bid/Ask Quotation Prices.

Like the Daily List, Fundamental Data files are available via secured Web site or secured file transfer protocol server. The information is provided on a T+1 basis.

Current fees for the Daily List and Fundamental Data were established in 2013.[4] Since that time, Nasdaq has implemented the enhancements to the Daily List product described above. Additionally, in 2014 Nasdaq introduced several enhancements to the MFQS portion of the Daily List product: A new ''test Symbol Flag'' field to clearly delineate MFQS test instruments from production instruments; a new ''Symbol Reuse Flag'' to alert market data vendors that a previously used MFQS symbol is being issued to a new MFQS instrument; and a new ''Instrument Registration'' field to clearly identify the U.S. regulatory agent responsible for oversight of a given MFQS instrument. Accordingly, to the extent that the proposed price increase exceeds the rate of overall inflation during the preceding four years, Nasdaq believes that it is warranted in light of the increased value of the product to market participants. Moreover, as discussed below, Nasdaq believes that the price of the product is constrained by market forces, such that any increase in the price of the product that was not reasonable in light of the product's value would be met with a competitive response.

2. Statutory Basis

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,[5] in general, and furthers the objectives of Sections 6(b)(4) and 6(b)(5) of the Act,[6] in particular, in that it provides for the equitable allocation of reasonable dues, fees and other charges

[3] Order Approving the National Market System Plan to Implement a Tick Size Pilot Program by BATS Exchange, Inc., BATS Y-Exchange, Inc., Chicago Stock Exchange, Inc., EDGA Exchange, Inc., EDGX Exchange, Inc., Financial Industry Regulatory Authority, Inc., NASDAQ OMX BX, Inc., NASDAQ OMX PHLX LLC, The Nasdaq Stock Market LLC, New York Stock Exchange LLC, NYSE MKT LLC, and NYSE Arca, Inc., as Modified by the Commission, For a Two-Year Period, Securities Exchange Act Release No. 74892 (May 6, 2015), 80 FR 27514 (May 13, 2015) (File No. 4–657).

[4] Securities Exchange Act Release No. 68636 (January 11, 2013), 78 FR 3940 (January 17, 2013) (SR–NASDAQ–2013–009).

[5] 15 U.S.C. 78f(b).

[6] 15 U.S.C. 78f(b)(4) and (5).

among members and issuers and other persons using any facility, and is not designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Commission and the courts have repeatedly expressed their preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. In Regulation NMS, while adopting a series of steps to improve the current market model, the Commission highlighted the importance of market forces in determining prices and SRO revenues, and also recognized that current regulation of the market system ''has been remarkably successful in promoting market competition in its broader forms that are most important to investors and listed companies.'' [7]

Likewise, in *NetCoalition* v. *Securities and Exchange Commission* [8] (''NetCoalition''), the D.C. Circuit upheld the Commission's use of a market-based approach in evaluating the fairness of market data fees against a challenge claiming that Congress mandated a cost-based approach.[9] As the court emphasized, the Commission ''intended in Regulation NMS that 'market forces, rather than regulatory requirements' play a role in determining the market data . . . to be made available to investors and at what cost.'' [10]

Further, ''[n]o one disputes that competition for order flow is 'fierce.' . . . As the SEC explained, '[i]n the U.S. national market system, buyers and sellers of securities, and the broker-dealers that act as their order-routing agents, have a wide range of choices of where to route orders for execution'; [and] 'no exchange can afford to take its market share percentages for granted' because 'no exchange possesses a monopoly, regulatory or otherwise, in the execution of order flow from broker dealers'. . . .'' [11]

Nasdaq believes that periodically it must adjust prices to reflect more accurately the value of its products and the investments made to enhance them. Given that the fee for the Daily List and Fundament Data product has not been adjusted for four years, Nasdaq believes that it is an appropriate time to adjust the fee to more accurately reflect its value, as well as the investments made to enhance it through the addition of additional data to the product.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. In terms of inter-market competition, the Exchange notes that it operates in a highly competitive market in which market participants can readily favor competing venues if they deem overall fee levels associated with interacting with a particular venue to be excessive. In such an environment, the Exchange must continually adjust its fees to remain competitive. Because competitors are free to modify their own fees in response, and because market participants may readily adjust their order routing and data consumption practices, the Exchange believes that the degree to which fee changes in this market may impose any burden on competition is extremely limited.

In this instance, the proposed change to the fee for the Daily List and Fundamental Data product does not impose a burden on competition because the product is completely voluntary and is not necessary in order to interact with the Exchange. Thus, if the fee proposed herein is disproportionate to the value provided by this product, it is likely that the Exchange will lose sales. Moreover, to the extent that market participants use the product in order to enhance their participation with the Exchange, an excessive fee may encourage them to route orders to other venues. Accordingly, the Exchange does not believe that the proposed changes will impair the ability of members or competing order execution venues to maintain their competitive standing in the financial markets.

Specifically, market forces constrain fees for the Daily List and Fundamental Data product in three respects. First, fees related to data products that support interaction with an exchange are constrained by competition among exchanges and other entities attracting order flow. Nasdaq believes that firms make decisions regarding order routing and consumption of proprietary data based on the total cost of interacting with the Exchange, and order flow could be harmed by the supracompetitive pricing of any proprietary data product. Second, prices for the data are constrained by the potential for other exchanges and non-exchange data distributors to create products that replicate the Daily List and Fundamental Data product. Third, competition among Distributors constrains the cost of the data.

Competition for Order Flow

Fees related to this product are constrained by competition among exchanges and other entities seeking to attract order flow. Order flow is the ''life blood'' of exchanges. Broker-dealers currently have numerous alternative venues for their order flow, including self-regulatory organization (''SRO'') markets, internalizing broker-dealers (''BDs''), and various forms of alternative trading systems (''ATSs''), including dark pools and electronic communication networks (''ECNs''). Each SRO market competes to produce quotation information and transaction reports, and two FINRA-regulated Trade Reporting Facilities (''TRFs'') compete to attract internalized transaction reports. The existence of fierce competition for order flow implies a high degree of price sensitivity on the part of BDs, which may readily reduce costs by directing orders toward the lowest-cost trading venues.

The level of competition and contestability in the market for order flow is demonstrated by the numerous examples of entrants that swiftly grew into some of the largest electronic trading platforms and proprietary data producers: Archipelago, Bloomberg Tradebook, Island, RediBook, Attain, TracECN, BATS Trading and BATS/Direct Edge. A proliferation of dark pools and other ATSs operate profitably with fragmentary shares of consolidated market volume. For a variety of reasons, competition from new entrants, especially for order execution, has increased dramatically over the last decade.

Each SRO, TRF, ATS, and BD that competes for order flow is permitted to produce proprietary data products. Many currently do or have announced plans to do so, including NYSE, NYSE Amex, NYSE Arca, BATS, and IEX. This is because Regulation NMS deregulated the market for proprietary data. While BDs had previously published their proprietary data individually, Regulation NMS encourages market data vendors and BDs to produce proprietary products cooperatively in a manner never before possible. Order routers and market data vendors can facilitate production of proprietary data products for single or multiple BDs. The potential sources of proprietary products are virtually limitless.

The markets for order flow and proprietary data are inextricably linked:

[7] Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) (''Regulation NMS Adopting Release'').

[8] *NetCoalition* v. *SEC,* 615 F.3d 525 (D.C. Cir. 2010).

[9] *See NetCoalition,* at 534–535.

[10] *Id.* at 537.

[11] *Id.* at 539 (quoting Securities Exchange Act Release No. 59039 (December 2, 2008), 73 FR 74770, 74782–83 (December 9, 2008) (SR–NYSEArca–2006–21)).

A trading platform cannot generate market information unless it receives trade orders. As a result, the competition for order flow constrains the prices that platforms can charge for proprietary data products. Firms make decisions on how much and what types of data to consume based on the total cost of interacting with Nasdaq and other exchanges. Data fees are but one factor in a total platform analysis. If the cost of the product exceeds its expected value, the broker-dealer will choose not to buy it. A supracompetitive increase in the fees charged for either transactions or proprietary data has the potential to impair revenues from both products. In this manner, the competition for order flow constrains prices for proprietary data products.

Substitute Products

The price of the data contained in the Daily List and Fundamental Data product is constrained by the ability of a data vendor to obtain the information necessary to create and sell competing products. Nasdaq does not have unique access to the information that is provided through the product, and market participants do not have an unqualified need for the information provided. Therefore, the price that Nasdaq can charge for the product is constrained by the ability of market participants to reduce their demand for the product and the ability of competitors to enter the market and profitably undercut any supracompetitive price increase.

Competition Among Distributors

Distributors provide another form of price discipline for proprietary data products. Distributors are in competition for users, and can simply refuse to purchase any proprietary data product that fails to provide sufficient value for the price. If the price of this product were set above competitive levels, Distributors could determine whether the product was sufficiently attractive to their own customers to warrant incurring the costs associated with purchasing it for distribution. Since distributors are in competition with one another to attract customers, they must continually evaluate their cost base and the value of their product offering to customers to determine whether they allow them to maximize profitability. This competition for customers provides another check on the price for proprietary data products such as the Daily List and Fundamental Data.

In summary, market forces constrain the price of the product through competition for order flow, competition from substitute products, and in the competition among distributors for customers. For these reasons, the Exchange has provided a substantial basis demonstrating that the fee is equitable, fair, reasonable, and not unreasonably discriminatory, and therefore consistent with and in furtherance of the purposes of the Exchange Act.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing proposed rule change has become effective pursuant to Section 19(b)(3)(A)(ii) of the Act.[12]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is: (i) Necessary or appropriate in the public interest; (ii) for the protection of investors; or (iii) otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–NASDAQ–2016–175 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–NASDAQ–2016–175. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–NASDAQ–2016–175, and should be submitted on or before January 26, 2017.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[13]

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31936 Filed 1–4–17; 8:45 am]

BILLING CODE 8011–01–P

[12] 15 U.S.C. 78s(b)(3)(A)(ii).

[13] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–79712; File No. SR–CBOE–2016–091]

Self-Regulatory Organizations; Chicago Board Options Exchange, Incorporated; Notice of Filing of a Proposed Rule Change Related to a Change to the Trading Symbol for P.M.-Settled Options on the Standard & Poor's 500 Index

December 29, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on December 16, 2016, Chicago Board Options Exchange, Incorporated (the ''Exchange'' or ''CBOE'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I, II, and

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange seeks to amend Exchange rules related to P.M.-settled options on the Standard & Poor's 500 Index.

The text of the proposed rule change is available on the Exchange's Web site (*http://www.cboe.com/AboutCBOE/CBOELegalRegulatoryHome.aspx*), at the Exchange's Office of the Secretary, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange seeks to amend Exchange rules related to P.M.-settled options on the Standard & Poor's 500 Index (''S&P 500 Index''). Specifically, the Exchange seeks to move third-Friday P.M.-settled options into the Hybrid 3.0 S&P 500 Index options class. This proposed rule change will facilitate a change to the trading symbol for P.M.-settled S&P 500 Index options that have standard third Friday-of-the-month (''third-Friday'') expirations from ''SPXPM'' to ''SPXW.''

The Exchange lists A.M.-settled S&P 500 Index options that have standard third-Friday expirations.[3] The Exchange also lists P.M.-settled S&P 500 Index options that have standard third-Friday expirations.[4] Currently, third-Friday A.M.-settled S&P 500 Index options trading under the symbol ''SPX'' are included in the Hybrid 3.0 options class.[5] Also included in the Hybrid 3.0 options class are nonstandard P.M.-settled S&P 500 Index options trading under the symbol ''SPXW,'' which may expire on Mondays, Wednesdays, Fridays (other than third-Friday-of-the-month), and the last trading day of the month.[6] While included in the Hybrid 3.0 class, the group of options trading under the symbol ''SPXW'' trade on the Hybrid Trading System.[7] Currently, third-Friday P.M.-settled S&P 500 Index options form a separate options class and trade under the symbol ''SPXPM'' on the Hybrid Trading System.[8]

The Exchange believes moving SPXPM into the SPX options class to trade under the SPXW symbol will have no adverse impact on the marketplace. In fact, the Exchange believes moving SPXPM into the SPX options class to trade under the SPXW symbol will have a positive impact on the marketplace and retail customers in particular. As previously noted, in addition to end-of-the-month expirations, SPXW options are P.M.-settled S&P 500 Index options that may expire on Mondays, Wednesdays, and Fridays (other than third-Friday-of-the-month) (*i.e.,* nonstandard weekly expirations pursuant to Rule 24.9(e)). Trading P.M.-settled third-Friday expirations under the SPXW symbol will ensure market participants, particularly retail customers, have seamless access to P.M.-settled S&P 500 Index options expiring every Friday of the month. Currently, a user of SPXW options cannot roll an existing SPXW position that expires on a first or second Friday of a month into a SPXW position that expires on a third-Friday. Thus, for SPXW users, there is a gap in Friday expirations. Changing the SPXPM symbol to SPXW will remove the gap in Friday SPXW expirations and allow market participants, especially retail customers that are less likely to utilize both SPXPM and SPXW options to maintain exposure to Friday expirations, to have seamless access to P.M.-settled S&P 500 Index options expiring every Friday of the month.

In addition, offering seamless access to P.M.-settled S&P 500 Index options that expire every Friday of the month will allow market participants to submit complex orders with options series that expire on third-Fridays and other Friday expirations. Market participants may not submit complex orders that consist of SPXPM options series and SPXW options series because they are currently in separate classes.[9] Although market participants have the ability to submit separate orders to leg into a position with third-Friday and other Friday exposure, retail customers are less likely to leg into a position. Thus, changing the SPXPM symbol to SPXW will allow market participants, especially retail customers, to submit complex orders with options series that expire on third-Fridays and other Fridays.

As previously noted, the Exchange does not believe moving SPXPM into the SPX options class and changing the SPXPM symbol to SPXW will have any adverse impact on market participants. Because SPXPM and SPXW options both trade on the Hybrid Trading System,[10] and Exchange Rules and systems treat SPXPM and SPXW the same in most respects, the Exchange expects a smooth transition of SPXPM series to the SPXW symbol. For example, the minimum increment applicable to both SPXPM and SPXW orders is the same.[11] Additionally, the allocation algorithm for both SPXPM and SPXW is currently price-time during Regular Trading Hours (''RTH''),[12] there is no Lead Market-Maker (''LMM'') [13] appointed in SPXPM or SPXW during RTH, and the only firm appointed as the LMM in SPXPM during Extended Trading Hours (''ETH'') is also an appointed LMM in SPXW (via the SPX options class appointment) during ETH.[14] The few differences between SPXPM and SPXW trading parameters are as follows:

- The allocation algorithm for opening rotations is pro-rata in SPXW and price-time in SPXPM; [15]

[3] *See* Rule 24.9(a)(4)(i) (identifying A.M.-settled S&P 500 Index options as being approved for trading on the Exchange).

[4] *See* Rule 24.9.14 (authorizing the Exchange to list P.M.-settled S&P 500 options).

[5] *See* Rule 8.3(c)(iii).

[6] *See* Rule 24.9(e).

[7] *See* Rule 8.14.01.

[8] *See* Rule 8.3(c)(i) (identifying P.M.-settled third-Friday S&P options as a Tier AA Hybrid Options Class).

[9] The Exchange notes that Rule 24.19 provides a limited exception for the trading of Multi-Class Broad-Based Index Option Spread Orders in open outcry. *See also* Regulatory Circular RG15–152.

[10] *See* Rules 8.3(c)(i) (identifying P.M.-settled third-Friday S&P Index options as a Tier AA Hybrid Options Class) and 8.14.01 (allowing the Exchange to authorize a group of series of a class for trading on the Hybrid Trading System).

[11] *See* Rule 6.42(1)–(4).

[12] *See* Rule 6.45B(a)(i).

[13] *See* Rule 8.15 (giving the Exchange the ability to appoint LMMs).

[14] *See* CBOE Regulatory Circulars RG 14–134 and RG15–131.

[15] *See* Rule 6.2B.04 (allowing the Exchange to determine the allocation algorithm for opening rotations on a class-by-class basis); *see also* Regulatory Circulars RG14–016 (setting forth the allocation method for SPXW, which, at the time, only applied to Regular Trading Hours as the Exchange did not yet offer Extended Trading Hours); RG13–012 (setting forth the allocation method for SPXPM, which, at the time, only applied to Regular Trading Hours as the Exchange did not yet offer Extended Trading Hours); RG15–

• The Exchange has activated the Automated Improvement Mechanism (''AIM'') for SPXPM during RTH but not SPXW.[16] AIM is available for SPXPM and SPXW during ETH;[17]

• During RTH the appointment cost for the SPXPM options class is .50, and the appointment cost for the SPX class is 1.0. However, all Market-Makers currently appointed in SPXPM during RTH are also appointed in SPX during RTH, which SPX appointment confers the right to trade A.M.-settled SPX options as well as P.M.-settled SPXW options.[18]

• During ETH the appointment cost for the SPXPM options class is .1, and the appointment cost for the SPX class is .4. However, all Market-Makers currently appointed in SPXPM during ETH are also appointed in SPX during ETH.

• Market-Makers are not allowed to enter orders to rest in the complex order book (''COB'') for SPXW during RTH but are allowed during ETH whereas Market-Makers are allowed to enter orders to rest in the COB for SPXPM in both Regular and Extended Trading Hours.[19]

Position Limits/Reporting Requirements

In addition, since third-Friday P.M.-settled options trading under the SPXW symbol will be a new type of series under the SPX options class and not a new options class, all third-Friday P.M.-settled SPXW options will be aggregated together with all other standard expirations for applicable reporting and other requirements.[20]

Pilot Reports

Third-Friday P.M.-Settled S&P 500 Index options are listed on a pilot basis.[21] The pilot will continue under the same terms that established the pilot. As part of the pilot, the Exchange submits quarterly reports and annual reports that analyze the market impact and trading patterns of third-Friday P.M.-settled S&P 500 options. The reports will be modified to provide the same data and analysis for third-Friday P.M.-settled S&P 500 Index options trading under symbol SPXW that is currently submitted for third-Friday P.M.-settled S&P 500 Index options trading under symbol SPXPM.

2013 SPXPM Approval Order

The Exchange also proposes to correct the record with respect to the original approval to list SPXPM options on CBOE.[22] The Exchange's initial filing to list SPXPM on CBOE proposed ''to move all P.M.-settled S&P 500 Index options series that are part of the SPXPM [*sic*] options class and that have an expiration on any day other than the third Friday of every month (*e.g.,* Quarterly Index Options (''QIX''), End-of-Week (''EOW'') series, etc.) to the SPXPM class.''[23] First, noted in the previous sentence, the initial filing mistakenly proposed to move options series that were part of the SPXPM options class to the SPXPM options class, which has no meaning because if series are part of an options class they can't be moved to the same options class. Second, the Exchange's Amendment No. 3 to the rule filing sought to replace the above-quoted sentence with the following sentence:

The Exchange does *not* propose to move any P.M.-settled S&P 500 Index options series that are part of the SPX options class and that have an expiration on any day other than the third Friday of every month (*e.g.,* Quarterly Index Options (''QIX''), End-of-Week (''EOW'') series, etc.) to the SPXPM class.

However, Footnote 5 of the Approval Order mistakenly indicated that pursuant to the Exchange's Amendment No. 3, any P.M.-settled S&P 500 Index options series that are part of the SPX options class and that have an expiration on any day other than the third Friday of every month will remain under the SPXPM class to avoid investor confusion. The Approval Order should have indicated that P.M.-settled S&P 500 Index options series that are part of the SPX options class and that have an expiration on any day other than the third Friday of every month will remain under the *SPX* class, not the SPXPM class. Notwithstanding the mistake in the Approval Order P.M.-settled S&P 500 Index options series that have an expiration on any day other than the third Friday of every month have been included in the SPX class; thus, this proposal simply corrects the record.

Conforming Changes

In order to move the SPXPM class into the SPX class the Exchange is making conforming changes to CBOE Rules 6.1A, 6.42, 8.3, 24.4, 24.5, 24.6, 24.9, 24A.7, 24A.8, 24B.7, and 24B.8.

Implementation Date

The Exchange intends to change the SPXPM symbol to SPXW at some point in February 2017.[24] However, in the event that the Exchange determines to implement the change at a later date, the proposed rule text provides that current rule text provisions will remain in effect until a date specified by the Exchange in a Regulatory Circular, which date shall be no later than July 31, 2017, and on the date specified by the Exchange in a Regulatory Circular, the rule text provisions amended by this filing will be in effect.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the ''Act'') and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[25] Specifically, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5)[26] requirements that the rules of an exchange be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market

029 (setting forth the allocation method for SPXW during Extended Trading Hours); and RG15–131 (setting forth the allocation method for SPXPM during Extended Trading Hours).

[16] *See* Rule 6.74A(a)(1) (providing that the Exchange determines the options classes that are eligible for AIM); *see also* Regulatory Circular sRG16–024 (providing that AIM will not be available in SPXW options during Regular Trading Hours) and RG13–012 (providing that AIM will be available for SPXPM, which, at the time, only applied to Regular Trading Hours as the Exchange did not yet offer Extended Trading Hours).

[17] *See* Regulatory Circular RG16–049 (providing that AIM will be available in Extended Trading Hours for SPXW and SPXPM).

[18] *See* Rule 8.3(c)(iii).

[19] *See* Rule 6.53C(c)(i) (providing the Exchange with authority to determine which origin codes are eligible to be entered into the COB); *see also* Regulatory Circulars RG15–195 (identifying origin codes that are not allowed to rest in the SPXW COB during Regular and Extended Trading Hours); RG13–012 (identifying origin codes that are allowed for SPXPM, which, at the time, only applied to Regular Trading Hours as the Exchange did not yet offer Extended Trading Hours); and RG15–131 (identifying origin codes that are allowed to rest in the SPXPM COB during Extended Trading Hours).

[20] *See e.g.,* Rule 4.13, *Reports Related to Position Limits,* and Interpretation and Policy .03 to Rule 24.4, which sets forth the reporting requirements for certain broad-based indexes that do not have position limits.

[21] *See* Rule 24.9.14 and Securities Exchange Act Release No. 68457 (December 18, 2012), 77 FR 76135 (December 26, 2012) (SR–CBOE–2012–120).

[22] *See* Securities Exchange Act Release No. 68888 (February 8, 2013), 78 FR 10668 (February 14, 2013) (SR–CBOE–2012–120) (Order approving SPXPM for trading on CBOE) (''Approval Order'').

[23] *See* Securities Exchange Act Release No. 68457 (December 18, 2012), 77 FR 76135 (December 26, 2012) (SR–CBOE–2012–120).

[24] *See* RG16–132.

[25] 15 U.S.C. 78f(b).

[26] 15 U.S.C. 78f(b)(5).

system, and, in general, to protect investors and the public interest. Additionally, the Exchange believes the proposed rule change is consistent with the Section 6(b)(5) [27] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

In particular, the Exchange believes trading P.M.-settled third-Friday expirations under the SPXW symbol rather than the separate SPXPM symbol will ensure market participants, particularly retail customers, have seamless access to P.M.-settled S&P 500 Index options expiring every Friday of the month, which helps to remove impediments to and perfect the mechanism of a free and open market. The Exchange believes the proposed rule change will help to protect investors and the public interest by allowing market participants to enter options positions with the same underlying in one symbol that spans every Friday expiration in a month, thus providing a more efficient way to gain exposure and hedge risk.

B. Self-Regulatory Organization's Statement on Burden on Competition

CBOE does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The Exchange does not believe the rule change will impose a burden on intramarket competition because all market participants will continue to have access to P.M.-settled S&P 500 Index options expiring every Friday of the month and will be able to trade them under the SPXW symbol. The proposal will not impose a burden on intermarket competition because the options effected by this proposal are exclusive to CBOE. Additionally, the Exchange does not believe the proposal will impose any burden on intermarket competition as market participants on other exchanges are welcome to become Trading Permit Holders and trade at CBOE if they determine that this proposed rule change has made CBOE more attractive or favorable.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange neither solicited nor received comments on the proposed rule change.

[27] *Id.*

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Within 45 days of the date of publication of this notice in the **Federal Register** or within such longer period up to 90 days (i) as the Commission may designate if it finds such longer period to be appropriate and publishes its reasons for so finding or (ii) as to which the Exchange consents, the Commission will:

A. By order approve or disapprove such proposed rule change, or

B. institute proceedings to determine whether the proposed rule change should be disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml);* or
- Send an email to *rule-comments@sec.gov. Please include File Number SR–CBOE–2016–091 on the subject line.*

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–CBOE–2016–091. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml).* Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–CBOE–2016–091 and should be submitted on or before January 26, 2017.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[28]

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31943 Filed 1–4–17; 8:45 am]

BILLING CODE 8011–01–P

[28] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

Sunshine Act Meeting

Notice is hereby given, pursuant to the provisions of the Government in the Sunshine Act, Public Law 94–409, that the Securities and Exchange Commission will hold a closed meeting on Friday, January 6, 2017 at 2:30 p.m.

Commissioners, Counsel to the Commissioners, the Secretary to the Commission, and recording secretaries will attend the closed meeting. Certain staff members who have an interest in the matters also may be present.

The General Counsel of the Commission, or her designee, has certified that, in her opinion, one or more of the exemptions set forth in 5 U.S.C. 552b(c)(3), (5), (7), 9(B) and (10) and 17 CFR 200.402(a)(3), (a)(5), (a)(7), (a)(9)(ii) and (a)(10), permit consideration of the scheduled matter at the closed meeting.

Chair White, as duty officer, voted to consider the items listed for the closed meeting in closed session.

The subject matter of the closed meeting will be:

Institution of injunctive actions;

Institution and settlement of administrative proceedings;

Adjudicatory matters; and

Other matters relating to enforcement proceedings.

At times, changes in Commission priorities require alterations in the scheduling of meeting items.

For further information and to ascertain what, if any, matters have been added, deleted or postponed; please contact Brent J. Fields from the Office of the Secretary at (202) 551–5400.

Dated: December 30, 2016.

Brent J. Fields,

Secretary.

[FR Doc. 2016–32047 Filed 1–3–17; 11:15 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–79709; File No. SR–CBOE–2016–092]

Self-Regulatory Organizations; Chicago Board Options Exchange, Incorporated; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to Fees for the Complex Order Book Data Feed

December 29, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on December 19, 2016, Chicago Board Options Exchange, Incorporated (the ''Exchange'' or ''CBOE'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of the Substance of the Proposed Rule Change

Chicago Board Options Exchange, Incorporated (the ''Exchange'' or ''CBOE'') proposes to amend user fees for the Complex Order Book (''COB'') Data Feed. The text of the proposed rule change is available on the Exchange's Web site (*http://www.cboe.com/AboutCBOE/CBOELegalRegulatoryHome.aspx*), at the Exchange's Office of the Secretary, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of the proposed rule change is to amend user fees for the COB Data Feed. This data feed is made available by CBOE's affiliate Market Data Express, LLC (''MDX''). The Exchange proposes to make the following fee changes effective January 1, 2017.

COB Data Feed: The COB Data Feed is a real-time data feed that includes data regarding the Exchange's Complex Order Book and related complex order information. The COB Data Feed contains the following information for all CBOE-traded complex order strategies (multi-leg strategies such as spreads, straddles and buy-writes): (i) Outstanding quotes and standing orders on each side of the market with aggregate size, (ii) data with respect to executed trades (''last sale data''), and (iii) totals of customer versus non-customer contracts.[3]

Fees

MDX currently charges Customers[4] of the COB Data Feed a Data Fee of $100 per month plus applicable User Fees (as described below). The Data Fee for the COB Data Feed is waived for Customers of the CBOE BBO and Book Depth Data Feeds.[5]

MDX charges a Customer User Fees of $25 per month per Device[6] or user ID for receipt of the data by ''Professional Users''[7]. There is no charge for receipt of the data by ''Non-Professional Users''[8]. User Fees are subject to a cap of $2,000 per month (*i.e.,* a Customer pays no more than $2,000 in User Fees for a given month). The Exchange proposes to delete this fee cap from the MDX fee schedule for CBOE data.

The Exchange also proposes to make a few clean-up changes to the MDX fee schedule for CBOE data, including removing a couple references to a January 1, 2016 effective date for prior fee changes and removing the $1 per month User Fee for COB Data Feed Non-Professional Users, which was eliminated effective January 1, 2015.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the ''Act'') and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[9] Specifically, the Exchange believes the proposed rule change is consistent with Section 6(b)(4) of the Act,[10] which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges among its Trading Permit Holders and other persons using its facilities. The Exchange also believes the proposed rule change is consistent with the Section 6(b)(5)[11] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The Exchange believes the proposal to delete the monthly cap on User Fees for receipt of the COB Data Feed is equitable and not unfairly discriminatory because it would apply

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] The data is made available during ''Regular Trading Hours'' as defined in CBOE Rule 1.1(qqq) and ''Extended Trading Hours'' as defined in CBOE Rule 1.1(rrr).

[4] A Customer is any person, company or other entity that, pursuant to a market data agreement with MDX, is entitled to receive data, either directly from MDX or through an authorized redistributor (*i.e.,* a Customer or an extranet service provider), whether that data is distributed externally or used internally. The MDX fee schedule for CBOE data is located at *https://www.cboe.org/MDX/CSM/OBOOKMain.aspx.*

[5] Such COB Data Feed Customers are still subject to User Fees.

[6] A ''Device'' means any computer, workstation or other item of equipment, fixed or portable, that receives, accesses and/or displays data in visual, audible or other form.

[7] A ''Professional User'' is any natural person recipient of Data who is not a Non-Professional User (as defined below). User Fees for Professional Users are payable for both ''internal'' Professional Users (Devices or user IDs of employees of a Customer) and ''external'' Professional Users (Devices or user IDs of Professional Users who receive the Data from a Customer and are not employed by the Customer). (Non-Professional Users must be external since a person who uses the COB Data Feed for a commercial purpose cannot be a Non-Professional User.)

[8] A ''Non-Professional User'' is a natural person or qualifying trust that uses Data only for personal purposes and not for any commercial purpose and, for a natural person who works in the United States, is not: (i) Registered or qualified in any capacity with the Securities and Exchange Commission, the Commodities Futures Trading Commission, any state securities agency, any securities exchange or association, or any commodities or futures contract market or association; (ii) engaged as an ''investment adviser'' as that term is defined in Section 201(11) of the Investment Advisors Act of 1940 (whether or not registered or qualified under that Act); or (iii) employed by a bank or other organization exempt from registration under federal or state securities laws to perform functions that would require registration or qualification if such functions were performed for an organization not so exempt; or, for a natural person who works outside of the United States, does not perform the same functions as would disqualify such person as a Non-Professional User if he or she worked in the United States.

[9] 15 U.S.C. 78f(b).

[10] 15 U.S.C. 78f(b)(4).

[11] 15 U.S.C. 78f(b)(5).

equally to all Customers. The Exchange believes the User Fees, without a fee cap, are reasonable because they are similar to fees that other markets charge for similar products. For example, NYSE Arca charges $20 per month to each Professional User and $1 per month to each Non-Professional User for receipt of the Arcabook for Arca Options—Complex data feed. The Exchange believes NYSE Arca does not cap its user fees.[12] Similarly, NYSE MKT charges $20 per month to each Professional User and $1 per month to each Non-Professional User for receipt of the Arcabook for Amex Options Options—Complex data feed. The Exchange believes NYSE MKT does not cap its user fees. The Exchange also believes removing the fee cap is reasonable in that it is not anticipated to materially affect the amount of User Fees any Customer pays.

The decision of the United States Court of Appeals for the District of Columbia Circuit in *NetCoalition* v. *SEC,* 615 F.3d 525 (D.C. Cir. 2010), upheld reliance by the Securities and Exchange Commission (''Commission'') upon the existence of competitive market mechanisms to set reasonable and equitably allocated fees for proprietary market data:

In fact, the legislative history indicates that the Congress intended that the market system 'evolve through the interplay of competitive forces as unnecessary regulatory restrictions are removed' and that the SEC wield its regulatory power 'in those situations where competition may not be sufficient,' such as in the creation of a 'consolidated transactional reporting system.'

Id. at 535 (quoting H.R. Rep. No. 94–229 at 92 (1975), *as reprinted in* 1975 U.S.C.C.A.N. 323). The court agreed with the Commission's conclusion that ''Congress intended that 'competitive forces should dictate the services and practices that constitute the U.S. national market system for trading equity securities.' '' [13]

As explained below in the Exchange's Statement on Burden on Competition, the Exchange believes that the need to attract order flow from market participants provides an effective constraint on the market data fees that the Exchange, through MDX, has the ability and the incentive to charge. In addition, the existence of alternatives to this data product, such as proprietary data from other sources, as described below, further ensures that the Exchange cannot set unreasonable fees, or fees that are unreasonably discriminatory, when vendors and subscribers can select such alternatives.

For the reasons cited above, the Exchange believes the proposed User Fees for receipt of the COB Data Feed are equitable, reasonable and not unfairly discriminatory. In addition, the Exchange believes that no substantial countervailing basis exists to support a finding that the proposed fees for the COB Data Feed fail to meet the requirements of the Act.

B. Self-Regulatory Organization's Statement on Burden on Competition

CBOE does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

An exchange's ability to price its proprietary market data feed products is constrained by (1) the existence of actual competition for the sale of such data, (2) the joint product nature of exchange platforms, and (3) the existence of alternatives to the Exchange's proprietary data.

The Existence of Actual Competition. The Exchange believes competition provides an effective constraint on the market data fees that the Exchange, through MDX, has the ability and the incentive to charge. CBOE has a compelling need to attract order flow from market participants in order to maintain its share of trading volume. This compelling need to attract order flow imposes significant pressure on CBOE to act reasonably in setting its fees for market data, particularly given that the market participants that will pay such fees often will be the same market participants from whom CBOE must attract order flow. These market participants include broker-dealers that control the handling of a large volume of customer and proprietary order flow. Given the portability of order flow from one exchange to another, any exchange that sought to charge unreasonably high data fees would risk alienating many of the same customers on whose orders it depends for competitive survival. CBOE currently competes with thirteen options exchanges (including CBOE's affiliate, C2 Options Exchange) for order flow.[14]

In addition, in the case of products that are distributed through market data vendors, the vendors themselves provide additional price discipline for proprietary data products because they control the primary means of access to certain end users. These vendors impose price discipline based upon their business models. For example, vendors that assess a surcharge on data they sell are able to refuse to offer proprietary products that their end users do not or will not purchase in sufficient numbers. Similarly, Customers will not offer the COB Data Feed unless this product will help them maintain current users or attract new ones. For example, a broker-dealer will not choose to offer the COB Data Feed to its retail customers unless the broker-dealer believes that the retail customers will use and value the data and the provision of such data will help the broker-dealer maintain the customer relationship, which allows the broker-dealer to increase its revenues. Professional users will not request this feed from Customers unless they can use the data for profit-generating purposes in their businesses. All of these factors operate as constraints on pricing proprietary data products.

Joint Product Nature of Exchange Platform. Transaction execution and proprietary data products are complementary in that market data is both an input and a byproduct of the execution service. In fact, proprietary market data and trade executions are a paradigmatic example of joint products with joint costs. The decision whether and on which platform to post an order will depend on the attributes of the platforms where the order can be posted, including the execution fees, data quality, and price and distribution of data products. Without a platform to post quotations, receive orders and execute trades, exchange data products would not exist.

The costs of producing market data include not only the costs of the data distribution infrastructure, but also the costs of designing, maintaining, and operating the exchange's platform for posting quotes, receiving orders and executing trades, and the cost of regulating the exchange to ensure its fair operation and maintain investor confidence. The total return that a trading platform earns reflects the revenues it receives from both products and the joint costs it incurs.

Moreover, an exchange's broker-dealer customers view the costs of transaction executions and market data as a unified cost of doing business with

[12] *See* NYSE Market Data Pricing Guide available at *www.nyxdata.com/doc/241907.*

[13] *NetCoalition,* 615 F.3d at 535 (Quoting Securities Exchange Act Release No. 59039 (December 9, 2008), 73 FR 74770 (December 9, 2008) at 74771).

[14] The Commission has previously made a finding that the options industry is subject to significant competitive forces. *See e.g.,* Securities Exchange Act Release No. 59949 (May 20, 2009), 74 FR 25593 (May 28, 2009) (SR–ISE–2009–97) (order approving ISE's proposal to establish fees for a real-time depth of market data offering).

the exchange. A broker-dealer will only choose to direct orders to an exchange if the revenue from the transaction exceeds its cost, including the cost of any market data that the broker-dealer chooses to buy in support of its order routing and trading decisions. If the costs of the transaction are not offset by its value, then the broker-dealer may choose instead not to purchase the product and trade away from that exchange.

Analyzing the cost of market data product production and distribution in isolation from the cost of all of the inputs supporting the creation of market data and market data products will inevitably underestimate the cost of the data and data products because it is impossible to obtain the data inputs to create market data products without a fast, technologically robust, and well-regulated execution system, and system and regulatory costs affect the price of both obtaining the market data itself and creating and distributing market data products. It would be equally misleading, however, to attribute all of an exchange's costs to the market data portion of an exchange's joint products. Rather, all of an exchange's costs are incurred for the unified purposes of attracting order flow, executing and/or routing orders, and generating and selling data about market activity. The total return that an exchange earns reflects the revenues it receives from the joint products and the total costs of the joint products.

The level of competition and contestability in the market is evident in the numerous alternative venues that compete for order flow, including 14 options self-regulatory organization (''SRO'') markets, as well as various forms of alternative trading systems (''ATSs''), including dark pools and electronic communication networks (''ECNs'') and internalizing broker-dealers. Competition among trading platforms can be expected to constrain the aggregate return that each platform earns from the sale of its joint products, but different platforms may choose from a range of possible, and equally reasonable, pricing strategies as the means of recovering total costs. For example, some platforms may choose to pay rebates to attract orders, charge relatively low prices for market data products (or provide market data products free of charge), and charge relatively high prices for accessing posted liquidity. Other platforms may choose a strategy of paying lower rebates (or no rebates) to attract orders, setting relatively high prices for market data products, and setting relatively low prices for accessing posted liquidity. In this environment, there is no economic basis for regulating maximum prices for one of the joint products in an industry in which suppliers face competitive constraints with regard to the joint offering.

The Existence of Alternatives. CBOE is constrained in pricing the COB Data Feed by the availability to market participants of alternatives to purchasing this product. CBOE must consider the extent to which market participants would choose one or more alternatives instead of purchasing the exchange's data. Other options exchanges can and have produced their own complex order book market data products, and thus are sources of potential competition for MDX. For example, as noted above, NYSE Arca and NYSE MKT offer market data products that compete with the COB Data Feed.

The large number of SROs, ATSs and internalizing broker-dealers that currently produce proprietary data or are currently capable of producing it provides further pricing discipline for proprietary data products. Each SRO, ATS, and broker-dealer is currently permitted to produce and sell proprietary data products, and many currently do.

Further, data products are valuable to professional users only if they can be used for profit-generating purposes in their businesses and valuable to non-professional users only insofar as they provide information that such users expect will assist them in tracking prices and market trends and making trading decisions.

The existence of numerous alternatives to the Exchange's products, including proprietary data from other sources, ensures that the Exchange cannot set unreasonable fees, or fees that are unreasonably discriminatory, when vendors and subscribers can elect these alternatives or choose not to purchase a specific proprietary data product if its cost to purchase is not justified by the returns any particular vendor or subscriber would achieve through the purchase.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange neither solicited nor received comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A) of the Act [15] and paragraph (f) of Rule 19b–4 [16] thereunder. At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission will institute proceedings to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–CBOE–2016–092 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–CBOE–2016–092. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing also will be available for

[15] 15 U.S.C. 78s(b)(3)(A).

[16] 17 CFR 240.19b–4(f).

inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–CBOE–2016–092, and should be submitted on or before January 26, 2017.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[17]

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31941 Filed 1–4–17; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–79706; File No. SR–NASDAQ–2016–180]

Self-Regulatory Organizations; The NASDAQ Stock Market LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change Relating to the Listing and Trading of the Shares of the First Trust Strategic Income ETF of First Trust Exchange-Traded Fund IV

December 29, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on December 16, 2016, The NASDAQ Stock Market LLC (''Nasdaq'' or ''Exchange'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by Nasdaq. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

Nasdaq proposes a proposed rule change relating to the First Trust Strategic Income ETF (the ''Fund'') of First Trust Exchange-Traded Fund IV (the ''Trust''), the shares of which have been approved by the Commission for listing and trading under Nasdaq Rule 5735 (''Managed Fund Shares''). The shares of the Fund are collectively referred to herein as the ''Shares.''

The text of the proposed rule change is available at *http://nasdaq.cchwallstreet.com,* at Nasdaq's principal office, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, Nasdaq included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. Nasdaq has prepared summaries, set forth in Sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to reflect changes to the means of achieving the Fund's investment objectives. The Commission has approved the listing and trading of Shares under Nasdaq Rule 5735, which governs the listing and trading of Managed Fund Shares on the Exchange.[3] The Exchange believes the proposed rule change reflects no significant issues not previously addressed in the Prior Release. The Fund is an actively-managed exchange-traded fund (''ETF''). The Shares are offered by the Trust, which was established as a Massachusetts business trust on September 15, 2010. The Trust, which is registered with the Commission as an investment company under the Investment Company Act of 1940 (the ''1940 Act''), has filed a registration statement on Form N–1A (''Registration Statement'') relating to the Fund with the Commission.[4] The Fund is a series of the Trust.

First Trust Advisors L.P. is the investment adviser (''Adviser'') to the Fund. The following serve as investment sub-advisers (each a ''Sub-Adviser'') to the Fund: First Trust Global Portfolios Ltd.; Energy Income Partners, LLC; Stonebridge Advisors LLC; and Richard Bernstein Advisors LLC. First Trust Portfolios L.P. is the principal underwriter and distributor of the Fund's Shares. The Bank of New York Mellon Corporation acts as the administrator, accounting agent, custodian and transfer agent to the Fund.

The Prior Release provided that the primary investment objective of the Fund would be to seek risk-adjusted income and that its secondary objective would be capital appreciation. Additionally, the Prior Release stated that under normal market conditions, the Fund would seek to achieve its investment objectives by following a strategic and tactical asset allocation process that would provide diversified exposure to income-producing asset classes. Further, the Prior Release stated that the Adviser would determine the Fund's strategic allocation among the following investment categories (the following currently existing investment categories, as well as the proposed new investment category described below, are each referred to as an ''Investment Category'') and allocate the Fund's assets to portfolio management teams comprised of personnel of the Adviser and/or a Sub-Adviser (each such team, with respect to the currently existing Investment Categories as well as the proposed new Investment Category described below, is referred to as a ''Management Team'') which would employ their respective investment strategies: (i) High yield corporate bonds and first lien senior secured floating rate bank loans (referred to as ''senior loans''); (ii) mortgage-related investments; (iii) preferred securities (''Investment Category (iii)''); (iv) international sovereign bonds; (v) equity securities of Energy Infrastructure Companies (as defined in the Prior Release) (''Investment Category (v)''); and (vi) dividend paying domestic equity securities and Depositary Receipts (as defined in the Prior Release), together with a related Option Overlay Strategy (as defined in the Prior Release) (''Investment Category (vi)'').

The Exchange now proposes to modify the description of the measures utilized to achieve the Fund's investment objectives. As described in further detail below, these changes would: (1) Remove a current limitation on the Fund's ability to invest in Other ETFs (as defined below) and clarify, modify or delete certain representations to facilitate the Fund's ability to do so; (2) in conjunction with Investment Category (vi), (a) expand the Fund's

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[17] 17 CFR 200.30–3(a)(12).

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] The Commission approved Nasdaq Rule 5735 in Securities Exchange Act Release No. 57962 (June 13, 2008), 73 FR 35175 (June 20, 2008) (SR–NASDAQ–2008–039). The Commission previously approved the listing and trading of the Shares of the Fund. *See* Securities Exchange Act Release No. 72506 (July 1, 2014), 79 FR 38631 (July 8, 2014) (SR–NASDAQ–2014–050) (''Prior Order''). *See also* Securities Exchange Act Release No. 72169 (May 15, 2014), 79 FR 29247 (May 21, 2014) (SR–NASDAQ–2014–050) (''Prior Notice,'' and together with the Prior Order, the ''Prior Release'').

[4] *See* Post-Effective Amendment No. 140 to Registration Statement on Form N–1A for the Trust, dated February 26, 2016 (File Nos. 333–174332 and 811–22559). The descriptions of the Fund and the Shares contained herein are based, in part, on information in the Registration Statement. *See also* note 5.

permissible investments in equity securities to include, in addition to the equity securities specified in the Prior Release, dividend paying U.S. exchange-traded equity securities (including common stock) of companies domiciled outside of the United States and U.S. exchange-traded closed-end funds and (b) modify the description of the Option Overlay Strategy (as defined in the Prior Release) so that it provides (*x*) that the Option Overlay Strategy may be used in connection with any of the Fund's other investments (as expanded) included in Investment Category (vi) and (*y*) that options utilized in connection with the Option Overlay Strategy will have one year or less to expiration; and (3) add a new Investment Category (the ''New Investment Category'') relating to investments in equity securities of U.S. exchange-traded mortgage real estate investment trusts (''Mortgage REITs'').[5]

These modifications are being proposed to enhance the flexibility of the Adviser and the Management Teams in pursuing the Fund's investment objectives. The Adviser represents that there would be no change to the Fund's investment objectives. Except as provided herein, all other facts presented and representations made in the Prior Release would remain unchanged. The Fund and the Shares would continue to comply with all initial and continued listing requirements under Nasdaq Rule 5735.

The Fund's Investments in Other ETFs

1. General: Proposal To Remove 50% Limitation

The Prior Release stated that the Fund would seek to provide income and total return by having each Management Team focus on those securities within its respective Investment Category. The Prior Release also stated that the Fund may directly invest in securities covered by the applicable Investment Category or, alternatively, may invest in other ETFs that generally provide exposure to such Investment Category (referred to for purposes of this filing as ''Other ETFs'').[6] Further, the Prior Release included the following statement (the ''Other ETFs Statement''): ''The Adviser expects that the Fund may at times invest significantly (and, potentially, may invest up to 50% of its net assets) in other ETFs, including but not limited to, other ETFs that are advised by the Adviser; however, the Fund does not intend to operate principally as a 'fund of funds'.'' As a related matter, the Prior Release included an acknowledgment that any other ETFs in which the Fund invests to gain exposure to an Investment Category may be subject to investment parameters that differ in certain respects from those that have been established for such Investment Category.

Going forward, the Exchange proposes to amend the Other ETFs Statement by replacing it with the following: ''The Adviser expects that the Fund may at times invest significantly in other ETFs, including but not limited to, other ETFs that are advised by the Adviser; accordingly, the Fund may operate as a 'fund of funds,' but will not necessarily operate as such at all times.'' Therefore, going forward, in pursuing its investment objectives, the Fund's investments in Other ETFs would not be limited to 50% of its net assets. The Adviser believes that the proposed modification to the Other ETFs Statement would provide the Management Teams with additional flexibility in managing the assets allocated to their respective Investment Categories and, accordingly, would enhance the ability of the Fund to achieve its investment objectives.[7]

2. Certain Representations

The Adviser has considered the impact of the proposed change to the Other ETFs Statement on various other representations that are set forth in the Prior Release. In this regard, the Adviser notes that although the Prior Release included certain representations that apply to Other ETFs, a number of other representations were designed to apply to direct investments in securities and other instruments rather than to investments in Other ETFs made for the purposes of gaining exposure to Investment Categories. To facilitate the ability of the Fund to pursue its investment objectives by investing in Other ETFs and to clarify the applicability of certain representations, the Exchange is proposing the following:

a. Non-Affiliated Issuers

The Prior Release included the following representation: ''The Fund represents that its portfolio will include a minimum of 13 non-affiliated issuers of fixed income securities'' (the ''13 Issuer Representation''). Consistent with the proposal above to amend the Other ETFs Statement to enhance the Fund's ability to gain investment exposure through investing in Other ETFs, the Exchange is proposing that going forward, the 13 Issuer Representation be replaced with the following: ''The Fund represents that if its portfolio (excluding exempted securities as defined in Section 3(a)(12) of the Act) includes fixed income securities, such portfolio will include a minimum of 13 non-affiliated issuers of fixed income securities; provided, however, that there shall be no minimum number of non-affiliated issuers required for fixed income securities if at least 70% of the Fund's net assets consist of equity securities (including without limitation other ETFs). If at least 70% of the Fund's net assets consist of equity securities (including without limitation other ETFs), no single issuer of fixed income securities (excluding issuers of U.S. Department of Treasury securities and government-sponsored entity securities) will represent more than 5% of the Fund's net assets.''

b. Exposure to Single Countries

The Prior Release included the following representation with respect to the Fund's exposure to single countries (the ''Single Country Representation''): ''The Fund's exposure to any single country (outside of the U.S.) will generally be limited to 20% of the Fund's net assets.'' To facilitate the Fund's ability to gain investment exposure through investing in Other ETFs (which may provide exposure of varying degrees to one or more countries), as well as to provide the Adviser and the applicable Management Teams with additional flexibility, the Exchange is proposing that going forward, the Single Country Representation be deleted.

[5] These changes will be effected contingent upon the effectiveness of a post-effective amendment (which has not yet been filed as of the date of this filing) to the Trust's Registration Statement reflecting such changes. The Adviser represents that the Adviser and the Management Teams will not implement these changes until the instant proposed rule change is operative.

[6] Other ETFs will be limited to ETFs described in this footnote, consistent with the Prior Release. The Prior Release stated that an ETF is an investment company registered under the 1940 Act that holds a portfolio of securities. In addition, the Prior Release required that any ETFs included in the Fund would be listed and traded in the U.S. on one or more registered exchanges. Further, the Prior Release noted that the ETFs in which the Fund may invest included Index Fund Shares (as described in Nasdaq Rule 5705), Portfolio Depositary Receipts (as described in Nasdaq Rule 5705), and Managed Fund Shares (as described in Nasdaq Rule 5735). Further, the Prior Release stated that the Fund may invest in inverse ETFs, but would not invest in leveraged or inverse leveraged (*e.g.,* 2X or –3X) ETFs.

[7] Specific representations, including representations regarding the portion of the Fund's net assets to be allocated to an Investment Category (the ''Allocation Representations''), are set forth in the Prior Release (with respect to the currently existing Investment Categories) and below (with respect to Investment Category (vi), as modified, and the New Investment Category). Investments in Other ETFs intended to gain exposure to an Investment Category will be treated as investments in the securities and other instruments comprising such Investment Category for purposes of the Allocation Representations.

c. Representations Applicable to Investment Categories

With respect to each currently existing Investment Category, the Prior Release included statements and representations describing the nature of the securities and other instruments comprising such Investment Category. Statements and representations pertaining to Investment Category (vi), as modified, as well as to the New Investment Category, are set forth below. For the avoidance of doubt, with respect to the currently existing Investment Categories (including Investment Category (vi), as modified) as well as the New Investment Category, such statements and representations shall apply only to the Fund's direct investments in securities and other instruments comprising the applicable Investment Categories and not to holdings by Other ETFs.

As a related matter, with respect to the Fund's investments in particular Investment Categories emphasizing fixed income securities, the Prior Release included certain statements and representations pertaining to, in general terms, issuance amounts and amounts outstanding, as well as credit quality, that were based on percentages of the Fund's investments in specific types of assets (the ''Percentage Representations'').[8] For the avoidance of doubt, the Percentage Representations shall be based only on the Fund's direct investments in securities and other instruments without regard to holdings by Other ETFs.

Investment Category (vi)

In connection with Investment Category (vi), the Prior Release stated that the Fund intended to invest between 0% and 30%, but could invest up to 50%, of its net assets in dividend paying U.S. exchange-traded equity securities (including common stock) of companies domiciled in the United States and Depositary Receipts (as defined in the Prior Release). Going forward, the Exchange proposes that the foregoing be revised to provide that the Fund intends to invest between 0% and 30%, but may invest up to 50%, of its net assets in (a) dividend paying U.S. exchange-traded equity securities (including common stock) of companies (that may be domiciled in or outside of the United States) and Depositary Receipts and/or (b) U.S. exchange traded closed end funds.[9]

In addition, the Prior Release provided that the Fund may use an Option Overlay Strategy in connection with certain of its other investments included in Investment Category (vi), whereby it would write (sell) covered U.S. exchange-traded call options in order to seek additional cash flow in the form of premiums on the options, and that the maturity of the options utilized would generally be between one week and three months. Going forward, the Exchange proposes that (a) the Fund may use its Option Overlay Strategy in connection with any of its other investments (as expanded) included in Investment Category (vi) and (b) the foregoing provision regarding maturity of options be replaced to provide that options utilized in connection with the Option Overlay Strategy will have one year or less to expiration.

New Investment Category Relating to the Fund's Investments in Mortgage REITs

The Exchange proposes to add the New Investment Category. Accordingly, going forward, the Fund intends to invest between 0% and 30%, but may invest up to 50%, of its net assets in the exchange-traded common shares of U.S. exchange-traded Mortgage REITs. In general terms, a Mortgage REIT makes loans to developers and owners of property and invests primarily in mortgages and similar real estate interests, and includes companies or trusts that are primarily engaged in the purchasing or servicing of commercial or residential mortgage loans or mortgage-related securities, which may include mortgage-backed securities issued by private issuers and those issued or guaranteed by U.S. Government agencies, instrumentalities or sponsored entities.

Addition of Mortgage REITs, Closed-End Funds and Dividend Paying U.S. Exchange Traded Equity Securities of Companies Domiciled Outside of the United States as Fund Investments

For purposes of calculating net asset value (''NAV''), exchange-traded common shares of U.S. exchange-traded Mortgage REITs, dividend paying U.S. exchange-traded equity securities of companies domiciled outside of the United States (''Foreign Company Equities''), and shares of Closed-End Funds listed on any exchange other than the Exchange will typically be valued at the last sale price on the exchange on which they are principally traded on the business day as of which such value is being determined. Such equity securities listed on the Exchange will typically be valued at the official closing price on the business day as of which such value is being determined. If there has been no sale on such day, or no official closing price in the case of such equity securities traded on the Exchange, such equity securities will typically be valued using fair value pricing. Such equity securities traded on more than one securities exchange will typically be valued at the last sale price or official closing price, as applicable, on the business day as of which such value is being determined at the close of the exchange representing the principal market for such securities.

Quotation and last sale information for Mortgage REITs, Foreign Company Equities and Closed-End Funds (in addition to the U.S. exchange-traded equity securities referenced in the Prior Release) will be available via the Consolidated Tape Association (''CTA'') high-speed line, and will be available from the national securities exchanges on which they are listed. Pricing information for Closed-End Funds, Foreign Company Equities and Mortgage REITs (in addition to the exchange-traded equity securities referenced in the Prior Release) will be available from the exchanges on which they trade and from major market data vendors.

[8] In this regard, the Prior Release provided that, under normal market conditions, the Fund would seek to invest at least 75% of its net assets that are invested in high yield corporate bonds and senior loans (in the aggregate) in bonds and loans that, at the time of original issuance, have at least $100 million par amount outstanding. Similarly, the Prior Release provided that, under normal market conditions, the Fund would seek to invest at least 75% of its net assets that are invested in preferred securities in preferred securities that have a minimum initial issuance amount of at least $100 million. Additionally, the Prior Release included a statement that the Fund expected that, under normal market conditions, at least 80% of the Sovereign Debt (as defined in the Prior Release) in which it invested would be issued by issuers with outstanding debt of at least $200 million (or the foreign currency equivalent thereof). With respect to credit quality, the Prior Release provided that at least 50% of the Fund's net assets that are invested in Sovereign Debt would be invested in securities of issuers rated investment grade at the time of purchase by at least one nationally recognized statistical rating organization and unrated securities judged to be of comparable quality by the Adviser and/or the applicable Management Team.

[9] The closed-end funds in which the Fund invests (''Closed-End Funds'') will be registered under the 1940 Act and listed and traded in the U.S. on one or more registered exchanges. Closed-End Funds may invest in securities and instruments of any type. As indicated in the Prior Release, this Investment Category and these percentages do not include investments in preferred securities that are included in Investment Category (iii), investments in those equity securities that are included in Investment Category (v), or investments in Other ETFs that are intended to provide exposure to any of the other Investment Categories. In addition, going forward, this Investment Category and the foregoing percentages shall not include investments in exchange-traded common shares issued by Mortgage REITs, which are included in the New Investment Category described below. Further, going forward, investments in preferred securities issued by Closed-End Funds will be included in this Investment Category and not in Investment Category (iii).

The Exchange represents that trading in the Shares will continue to be subject to the existing trading surveillances, administered by both Nasdaq and also the Financial Industry Regulatory Authority (''FINRA''), on behalf of the Exchange, which are designed to detect violations of Exchange rules and applicable federal securities laws.[10] The Exchange represents that these procedures are adequate to properly monitor Exchange trading of the Shares in all trading sessions and to deter and detect violations of Exchange rules and applicable federal securities laws.

FINRA, on behalf of the Exchange, will communicate as needed regarding trading in the Mortgage REITs, Foreign Company Equities and Closed-End Funds held by the Fund (in addition to the Shares and the other exchange-traded securities and instruments referenced in the Prior Release) with other markets and other entities that are members of the Intermarket Surveillance Group (''ISG'')[11] and FINRA may obtain trading information regarding trading in the Mortgage REITs, Foreign Company Equities and Closed-End Funds held by the Fund (in addition to the Shares and the other exchange-traded securities and instruments referenced in the Prior Release) from such markets and other entities. In addition, the Exchange may obtain information regarding trading in the Mortgage REITs, Foreign Company Equities and Closed-End Funds held by the Fund (in addition to the Shares and the other exchange-traded securities and instruments referenced in the Prior Release) from markets and other entities that are members of ISG, which includes securities and futures exchanges, or with which the Exchange has in place a comprehensive surveillance sharing agreement.

At least 90% of the Fund's net assets that are invested in exchange-traded equity securities of both domestic and foreign issuers (including Mortgage REITs, Foreign Company Equities and Closed-End Funds in addition to the other exchange-traded equity securities referenced in the Prior Release), exchange-traded products and exchange-traded derivatives (in the aggregate) will be invested in investments that trade in markets that are members of ISG or are parties to a comprehensive surveillance sharing agreement with the Exchange.

2. Statutory Basis

Nasdaq believes that the proposal is consistent with Section 6(b) of the Act in general and Section 6(b)(5) of the Act in particular in that it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, and to remove impediments to and perfect the mechanism of a free and open market and, in general, to protect investors and the public interest. Except as provided herein, all other facts presented and representations made in the Prior Release will remain unchanged. The Fund will continue to comply with all the initial and continued listing requirements under Nasdaq Rule 5735.

The Exchange believes that the proposed rule change is designed to prevent fraudulent and manipulative acts and practices in that the Shares would continue to be listed and traded on the Exchange pursuant to the initial and continued listing criteria in Nasdaq Rule 5735 and, except as provided herein, all other facts presented and representations made in the Prior Release would remain unchanged. The Exchange represents that trading in the Shares would be subject to the existing trading surveillances, administered by both Nasdaq and also FINRA, on behalf of the Exchange, which are designed to detect violations of Exchange rules and applicable federal securities laws. FINRA, on behalf of the Exchange, would communicate as needed regarding trading in the Mortgage REITs, Foreign Company Equities and Closed-End Funds held by the Fund (in addition to the Shares and the other exchange-traded securities and instruments referenced in the Prior Release) with other markets and other entities that are members of ISG, and FINRA may obtain trading information regarding trading in the Mortgage REITs, Foreign Company Equities and Closed-End Funds held by the Fund (in addition to the Shares and the other exchange-traded securities and instruments referenced in the Prior Release) from such markets and other entities. In addition, the Exchange may obtain information regarding trading in the Mortgage REITs, Foreign Company Equities and Closed-End Funds held by the Fund (in addition to the Shares and the other exchange-traded securities and instruments referenced in the Prior Release) from markets and other entities that are members of ISG, which includes securities and futures exchanges, or with which the Exchange has in place a comprehensive surveillance sharing agreement. At least 90% of the Fund's net assets that are invested in exchange-traded equity securities of both domestic and foreign issuers (including Mortgage REITs, Foreign Company Equities and Closed-End Funds in addition to the other exchange-traded equity securities referenced in the Prior Release), exchange-traded products and exchange-traded derivatives (in the aggregate) would be invested in investments that trade in markets that are members of ISG or are parties to a comprehensive surveillance sharing agreement with the Exchange.

The proposed rule change is designed to promote just and equitable principles of trade and to protect investors and the public interest in that the Adviser represents that the purpose of the proposed changes is to provide it and the Management Teams with greater flexibility in meeting the Fund's investment objectives. These changes, which would: (1) Remove a current limitation on the Fund's ability to invest in Other ETFs and clarify, modify or delete certain representations to facilitate the Fund's ability to do so; (2) in conjunction with Investment Category (vi), (a) expand the Fund's permissible investments in equity securities to include, in addition to the equity securities specified in the Prior Release, dividend paying U.S. exchange-traded equity securities (including common stock) of companies domiciled outside of the United States and U.S. exchange-traded closed-end funds and (b) modify the description of the Option Overlay Strategy (as defined in the Prior Release) so that it provides (*x*) that the Option Overlay Strategy may be used in connection with any of the Fund's other investments (as expanded) included in Investment Category (vi) and (*y*) that options utilized in connection with the Option Overlay Strategy will have one year or less to expiration; and (3) add the New Investment Category (relating to investments in equity securities of U.S. exchange-traded Mortgage REITs), would be effected contingent upon the effectiveness of a post-effective amendment to the Trust's Registration Statement reflecting such changes and would not be implemented by the Adviser or the Management Teams until the instant proposed rule change is operative. In addition, consistent with the Prior Release, the NAV per Share would continue to be calculated daily and the NAV and the Disclosed Portfolio (as defined in the Prior

[10] FINRA surveils trading on the Exchange pursuant to a regulatory services agreement. The Exchange is responsible for FINRA's performance under this regulatory services agreement.

[11] For a list of the current members of ISG, *see www.isgportal.org.* The Exchange notes that not all components of the Disclosed Portfolio (as defined in the Prior Release) may trade on markets that are members of ISG or with which the Exchange has in place a comprehensive surveillance sharing agreement.

Release) would continue to be made available to all market participants at the same time.

In addition, a large amount of information would continue to be publicly available regarding the Fund and the Shares, thereby promoting market transparency. Pricing information for Closed-End Funds, Foreign Company Equities and Mortgage REITs (in addition to the exchange-traded equity securities referenced in the Prior Release) would be available from the exchanges on which they trade and from major market data vendors. Moreover, the Intraday Indicative Value (as described in the Prior Release), available on the NASDAQ OMX Information LLC proprietary index data service, would continue to be widely disseminated by one or more major market data vendors and broadly displayed at least every 15 seconds during the Regular Market Session. On each business day, before commencement of trading in Shares in the Regular Market Session on the Exchange, the Fund would continue to disclose on its Web site the Disclosed Portfolio that will form the basis for the Fund's calculation of NAV at the end of the business day.

The proposed rule change is designed to perfect the mechanism of a free and open market and, in general, to protect investors and the public interest. As noted above, the additional flexibility to be afforded to the Adviser and the Management Teams under the proposed rule change is intended to enhance their ability to meet the Fund's investment objectives. In addition, the Exchange may obtain information regarding trading in the Mortgage REITs, Foreign Company Equities and Closed-End Funds held by the Fund (in addition to the Shares and the other exchange-traded securities and instruments referenced in the Prior Release) from markets and other entities that are members of ISG, which includes securities and futures exchanges, or with which the Exchange has in place a comprehensive surveillance sharing agreement.

For the above reasons, Nasdaq believes the proposed rule change is consistent with the requirements of Section 6(b)(5) of the Act.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The Exchange believes that the proposed rule change will permit the Adviser and the Management Teams to have additional flexibility, thereby helping the Fund to achieve its investment objectives and enhancing competition among market participants, to the benefit of investors and the marketplace.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants or Others

Written comments were neither solicited nor received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the foregoing proposed rule change does not: (i) Significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act [12] and Rule 19b–4(f)(6) thereunder.[13]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is: (i) Necessary or appropriate in the public interest; (ii) for the protection of investors; or (iii) otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–NASDAQ–2016–180 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–NASDAQ–2016–180. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–NASDAQ–2016–180 and should be submitted on or before January 26, 2017.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[14]

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31939 Filed 1–4–17; 8:45 am]

BILL6ING CODE 8011–01–P

[12] 15 U.S.C. 78s(b)(3)(A).

[13] 17 CFR 240.19b–4(f)(6). As required under Rule 19b–4(f)(6)(iii), the Exchange provided the Commission with written notice of its intent to file the proposed rule change, along with a brief description and the text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission.

[14] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–79710; File No. SR–NYSE–2016–89]

Self-Regulatory Organizations; New York Stock Exchange LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Amend Its Price List

December 29, 2016.

Pursuant to Section 19(b)(1) [1] of the Securities Exchange Act of 1934 (the ''Act'') [2] and Rule 19b–4 thereunder,[3] notice is hereby given that, on December 16, 2016, New York Stock Exchange LLC (''NYSE'' or the ''Exchange'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend its Price List, effective January 3, 2017, to (i) waive new firm application fees for applicants seeking only to obtain a bond trading license (''BTL'') for 2017; and (ii) waive the BTL fee for 2017. The proposed rule change is available on the Exchange's Web site at *www.nyse.com,* at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of those statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant parts of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend its Price List, effective January 3, 2017, to (i) waive new firm application fees for applicants seeking only to obtain a BTL for 2017; and (iii) waive the BTL fee for 2017. The Exchange proposes to implement the fee changes effective January 3, 2017.

The Exchange proposes to waive the New Firm Fee for 2017 for new member organization applicants that are seeking only to obtain a BTL and not trade equities at the Exchange. The Exchange currently charges a New Firm Fee ranging from $2,500 to $20,000, depending on the type of firm, that is charged per application for any broker-dealer that applies to be approved as an Exchange member organization. The proposed waiver of the New Firm Fee would be available only to applicants seeking approval as a new member organization, including carrying firms, introducing firms, or non-public organizations, that would be seeking to obtain a BTL at the Exchange and not trade equities. Further, if a new firm that is approved as a member organization and has had the New Firm Fee waived converts a BTL to a full trading license within one year of approval, the New Firm Fee would be charged retroactively. The Exchange believes that charging the New Firm Fee retroactively within a year of approval is appropriate because it would discourage applicants to claim that they are applying for a BTL solely to avoid New Firm Fees.

Additionally, the Exchange currently charges a BTL fee of $1,000 per year. The Exchange proposes to amend the Price List to waive the BTL fee for 2017.

The Exchange believes that the proposed fee changes would provide increased incentives for bond trading firms that are not currently Exchange member organizations to apply for Exchange membership and a BTL. The Exchange believes that having more member organizations trading on the Exchange's bond platform would benefit investors through the additional display of liquidity and increased execution opportunities in Exchange-traded bonds at the Exchange.

The proposed change is not otherwise intended to address any other issues, and the Exchange is not aware of any problems that members and member organizations would have in complying with the proposed change.

2. Statutory Basis

The Exchange believes that the proposed rule change is consistent with Section 6(b) of the Act,[4] in general, and furthers the objectives of Sections 6(b)(4) and 6(b)(5) of the Act,[5] in particular, because it provides for the equitable allocation of reasonable dues, fees, and other charges among its members, issuers and other persons using its facilities and does not unfairly discriminate between customers, issuers, brokers or dealers.

The Exchange believes that it is reasonable to waive the New Firm Fee and the annual BTL fee for 2017 to provide an incentive for bond trading firms to apply for Exchange membership and a BTL. The Exchange believes that providing an incentive for bond trading firms that are not currently Exchange member organizations to apply for membership and a BTL would encourage market participants to become members of the Exchange and bring additional liquidity to the only transparent bond market. To the extent the existing New Firm Fees or the BTL fee serves as a disincentive for bond trading firms to become Exchange member organizations, the Exchange believes that the proposed fee change could expand the number of firms eligible to trade bonds on the Exchange. The Exchange believes creating incentives for bond trading firms to trade bonds on the Exchange protects investors and the public interest by increasing the competition and liquidity on the only transparent market for bond trading. The proposed waiver of the New Firm Fee and BTL fee is equitable and not unfairly discriminatory because it would be offered to all market participants that wish to trade at the Exchange the narrower class of debt securities only.

Finally, recognizing the statements of Commissioners who have expressed concern about the state of the U.S. corporate and municipal bond markets as well as recommendations outlined in the Commission's release of its Report on the Municipal Securities Market (Report), the Exchange believes that expanding the number of member organizations eligible to trade bonds at the Exchange would be an important element in the democratization of the fixed income market.[6] As highlighted in

[1] 15 U.S.C.78s(b)(1).

[2] 15 U.S.C. 78a.

[3] 17 CFR 240.19b–4.

[4] 15 U.S.C. 78f(b).

[5] 15 U.S.C. 78f(b)(4), (5).

[6] *See* SEC Report on the Municipal Securities Market, *July 2012. http://www.sec.gov/news/studies/2012/munireport073112.pdf;* ''SEC's Gallagher Says Retail Bond Investors Fighting 'Headwinds' '', Jesse Hamilton, Bloomberg News. Sep 20, 2012. *See http://www.bloomberg.com/news/*

Continued

SEC Chair White's statement during the SEC's 2013 Roundtable on Fixed Income Markets, the Report makes recommendations that include (1) improving pre- and post-trade transparency; (2) promoting the use of transparent and open trading venues, and (3) requiring dealers to seek ''best execution'' for customers and to provide customers with relevant pricing information in connection with their transactions.[7] Achieving these recommendations and applying them to both the municipal and corporate bond markets would, in the Exchange's view, assist in lowering the systemic risk that is anticipated to increase as interest rates rise and the closed network of bond trading comes under pressure as retirement and pension managers seek to adjust their positions.

B. Self-Regulatory Organization's Statement on Burden on Competition

In accordance with Section 6(b)(8) of the Act,[8] the Exchange believes that the proposed rule change would not impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. Debt securities typically trade in a decentralized over-the-counter (''OTC'') dealer market that is less liquid and transparent than the equities markets. The Exchange believes that the proposed change would increase competition with these OTC venues by reducing the cost of being approved as and operating as an Exchange member organization that solely trades bonds at the Exchange, which the Exchange believes will enhance market quality through the additional display of liquidity and increased execution opportunities in Exchange-traded bonds at the Exchange.

The Exchange notes that it operates in a highly competitive market in which market participants can readily favor competing venues that are not transparent. In such an environment, the Exchange must continually review, and consider adjusting its fees and rebates to remain competitive with other exchanges as well as with alternative trading systems and other venues that are not required to comply with the statutory standards applicable to exchanges. Because competitors are free to modify their own fees and credits in response, and because market participants may readily adjust their order routing practices, the Exchange believes that the degree to which fee changes in this market may impose any burden on competition is extremely limited. As a result of all of these considerations, the Exchange does not believe that the proposed change will impair the ability of member organizations or competing order execution venues to maintain their competitive standing in the financial markets.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were solicited or received with respect to the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change is effective upon filing pursuant to Section 19(b)(3)(A)[9] of the Act and subparagraph (f)(2) of Rule 19b–4[10] thereunder, because it establishes a due, fee, or other charge imposed by the Exchange.

At any time within 60 days of the filing of such proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings under Section 19(b)(2)(B)[11] of the Act to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–NYSE–2016–89 on the subject line.

Paper Comments

- Send paper comments in triplicate to Brent J. Fields, Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–NYSE–2016–89. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly.

All submissions should refer to File Number SR–NYSE–2016–89, and should be submitted on or before January 26, 2017.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[12]

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31945 Filed 1–4–17; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

Sunshine Act Meeting; Additional Item

FEDERAL REGISTER CITATION OF PREVIOUS ANNOUNCEMENT: To Be Published.

PREVIOUSLY ANNOUNCED TIME AND DATE OF THE MEETING: Friday, January 6, 2017.

CHANGES IN THE MEETING: The following matters will also be considered during the 2:30 p.m. Closed Meeting scheduled

2012-09-19/sec-s-gallagher-says-retail-bond-investors-fighting-headwinds-.html.

[7] *See* Opening remarks of Chairman Mary Jo White at SEC Roundtable on Fixed Income Markets. *http://www.sec.gov/News/Speech/Detail/Speech/1365171515300.*

[8] 15 U.S.C. 78f(b)(8).

[9] 15 U.S.C. 78s(b)(3)(A).

[10] 17 CFR 240.19b–4(f)(2).

[11] 15 U.S.C. 78s(b)(2)(B).

[12] 17 CFR 200.30–3(a)(12).

for Friday, January 6, 2017: Settlement of injunctive actions.

CONTACT PERSON FOR MORE INFORMATION: For further information and to ascertain what, if any, matters have been added, deleted or postponed, please contact the Office of the Secretary at (202) 551–5400.

Dated: December 30, 2016.

Brent J. Fields,

Secretary.

[FR Doc. 2016–32048 Filed 1–3–17; 11:15 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Investment Company Act Release No IC–32406; 812–14622]

DFA Investment Dimensions Group Inc., et al.; Notice of Application

December 29, 2016.

AGENCY: Securities and Exchange Commission (''Commission'').

ACTION: Notice of an application under section 6(c) of the Investment Company Act of 1940 (''Act'') for an exemption from section 15(a) of the Act and rule 18f–2 under the Act, as well as from certain disclosure requirements in rule 20a–1 under the Act, Items 22(c)(1)(ii), 22(c)(1)(iii), 22(c)(8) and 22(c)(9) of Schedule 14A under the Securities Exchange Act of 1934, and Sections 6–07(2)(a), (b), and (c) of Regulation S–X (''Disclosure Requirements''). The requested exemption would permit an investment adviser to hire and replace certain wholly-owned sub-advisers without shareholder approval and grant relief from the Disclosure Requirements as they relate to fees paid to the wholly-owned sub-advisers.

APPLICANTS: DFA Investment Dimensions Group Inc. (''DFAIDG''), Dimensional Investment Group Inc. (''DIG'') (each of DFAIDG and DIG is organized as a Maryland corporation and registered under the Act as an open-end management investment company), Dimensional Emerging Markets Value Fund (''DEM''), The DFA Investment Trust Company (''DFAITC'') (each of DEM and DFAITC is organized as a Delaware statutory trust and registered under the Act as an open-end management investment company) (DFAITC, DFAIDG, DEM, and DIG, each a ''Trust, '' and together, the ''Trusts'') and Dimensional Fund Advisors LP (the ''Initial Adviser'' collectively with the Trusts, the ''Applicants'').

FILING DATES: The application was filed March 4, 2016, and amended on August 11, 2016.

HEARING OR NOTIFICATION OF HEARING: An order granting the application will be issued unless the Commission orders a hearing. Interested persons may request a hearing by writing to the Commission's Secretary and serving applicants with a copy of the request, personally or by mail. Hearing requests should be received by the Commission by 5:30 p.m. on January 23, 2017, and should be accompanied by proof of service on the applicants, in the form of an affidavit or, for lawyers, a certificate of service. Pursuant to rule 0–5 under the Act, hearing requests should state the nature of the writer's interest, any facts bearing upon the desirability of a hearing on the matter, the reason for the request, and the issues contested. Persons who wish to be notified of a hearing may request notification by writing to the Commission's Secretary.

ADDRESSES: Secretary, U.S. Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090. Applicants: 6300 Bee Cave Road, Building One, Austin, TX 78746.

FOR FURTHER INFORMATION CONTACT: Rachel Loko, Senior Counsel, at (202) 551–6883, or Holly Hunter-Ceci, Branch Chief, at (202) 551–6825 (Division of Investment Management, Chief Counsel's Office).

SUPPLEMENTARY INFORMATION: The following is a summary of the application. The complete application may be obtained via the Commission's Web site by searching for the file number, or an applicant using the Company name box, at *http://www.sec.gov/search/search.htm* or by calling (202) 551–8090.

Summary of the Application

1. The Adviser will serve as the investment adviser to the Subadvised Series pursuant to an investment management agreement with the relevant Trust (each an ''Investment Management Agreement'' and collectively, the ''Investment Management Agreements'').[1] The Adviser will provide the Subadvised Series with continuous investment management of the assets of each Subadvised Series subject to the supervision of each Trust's board of trustees (''Board''). The Investment Management Agreements permit the Adviser, subject to the approval of the Board, to delegate to one or more wholly-owned sub-advisers (each, a ''Wholly-Owned Sub-Adviser'' and collectively, the ''Wholly-Owned Sub-Advisers'') the responsibility to provide the day-to-day portfolio investment management of each Subadvised Series, subject to the supervision and direction of the Adviser. The primary responsibility for managing the Subadvised Series will remain vested in the Adviser. The Adviser will hire, evaluate, allocate assets to and oversee the Wholly-Owned Sub-Advisers, including determining whether a Wholly-Owned Sub-Adviser should be terminated, at all times subject to the authority of the Board.

2. Applicants request an exemption to permit the Adviser, subject to Board approval, to hire certain Wholly-Owned Sub-Advisers pursuant to Sub-Advisory Agreements and materially amend existing Sub-Advisory Agreements without obtaining the shareholder approval required under section 15(a) of the Act and rule 18f–2 under the Act.[2] Applicants also seek an exemption from the Disclosure Requirements to permit a Subadvised Series to disclose (as both a dollar amount and a percentage of the Subadvised Series' net assets) the aggregate fees paid to the Adviser and any Wholly-Owned Sub-Adviser (collectively, ''Aggregate Fee Disclosure'').

3. Applicants agree that any order granting the requested relief will be subject to the terms and conditions stated in the Application. Such terms and conditions provide for, among other safeguards, appropriate disclosure to Subadvised Series shareholders and notification about sub-advisory changes and enhanced Board oversight to protect the interests of the Subadvised Series' shareholders.

4. Section 6(c) of the Act provides that the Commission may exempt any person, security, or transaction or any class or classes of persons, securities, or transactions from any provisions of the Act, or any rule thereunder, if such relief is necessary or appropriate in the public interest and consistent with the protection of investors and purposes fairly intended by the policy and provisions of the Act. Applicants

[1] Applicants request relief with respect to any existing and any future series of the Trusts and any other future registered open-end management company or series thereof that: (a) Is advised by the Initial Adviser or its successor or by a person controlling, controlled by, or under common control with the Initial Adviser or its successor (each, also an ''Adviser''); (b) uses the multi-managers structure described in the application; and (c) complies with the terms and conditions of the application (each a ''Subadvised Series''). For purposes of the requested order, ''successor'' is limited to an entity that results from a reorganization into another jurisdiction or a change in the type of business organization.

[2] The requested relief will not extend to any Sub-Adviser that is an affiliated person, as defined in section 2(a)(3) of the Act, of a Fund or the Adviser, other than by reason of serving as a sub-adviser to one or more of the Funds (''Affiliated Sub-Adviser'').

believe that the requested relief meets this standard because, as further explained in the Application, the Advisory Agreements will remain subject to shareholder approval, while the role of the Wholly-Owned Sub-Advisers is substantially similar to that of individual portfolio managers, so that requiring shareholder approval of Sub-Advisory Agreements would impose unnecessary delays and expenses on the Subadvised Series. Applicants believe that the requested relief from the Disclosure Requirements meets this standard because it will improve the Adviser's ability to negotiate fees paid to the Wholly-Owned Sub-Advisers that are more advantageous for the Subadvised Series.

For the Commission, by the Division of Investment Management, under delegated authority.

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31938 Filed 1–4–17; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–79707; File No. 600–36]

Self-Regulatory Organizations; LCH SA; Order Granting Application for Registration as a Clearing Agency and Request for Exemptive Relief

December 29, 2016.

I. Introduction

On July 5, 2016, Banque Centrale de Compensation, which conducts business under the name LCH SA (''LCH SA''), filed with the Securities and Exchange Commission (''Commission'') a Form CA–1 seeking registration as a clearing agency under Section 17A of the Securities Exchange Act of 1934 [1] (''Exchange Act'' or ''Act'') and Rule 17Ab2–1 thereunder.[2] LCH SA is seeking to provide central counterparty (''CCP'') services for U.S. persons for security-based swaps, in particular single-name credit default swaps (''CDS''), through its CDSClear business unit.

Along with its Form CA–1, LCH SA submitted a request for exemptive relief (i) from Sections 5 and 6 of the Act [3] with respect to its end-of-day pricing process; (ii) from Section 19(b) of the Act [4] and Rule 19b–4 thereunder [5] with respect to filing certain proposed rule changes relating to its Non-U.S. Business (as defined below); (iii) from the requirements set forth in the introductory paragraph of Rule 17Ad–22(c)(2) and from Rule 17Ad–22(c)(2)(iii) [6] with respect to its annual audited financial statements; and (iv) Rule 17a–22 [7] with respect to requirements to provide the Commission with physical copies of certain materials.[8] Notice of the application and request for exemptive relief was published in the **Federal Register** on October 3, 2016 (''Notice'').[9] The Commission received no comments on the Notice. This Order approves LCH SA's application for registration as a clearing agency and grants LCH SA's request for exemptive relief.

II. Overview of LCH SA's Application

LCH SA maintains its principal office in Paris, France and is a wholly-owned subsidiary of LCH.Clearnet Group Limited (''LCH Group'').[10] LCH SA is regulated as a bank and as a CCP under French law by the Autorité des Marchés Financiers, Autorité de Contrôle Prudentiel et de Résolution, and Banque de France.[11] In addition, LCH SA is a CCP authorized to offer clearing services in the European Union pursuant to the European Market Infrastructure Regulation (''EMIR'') and is also registered with the U.S. Commodity Futures Trading Commission (''CFTC'') as a derivatives clearing organization (''DCO'') to provide clearing services for broad-based index CDS to U.S. members and their customers.[12]

In addition to LCH SA's CDSClear service, LCH SA offers clearing services for derivatives, exchange-traded futures and options, cash equities, fixed income, and energy instruments through three lines of CCP services: EquityClear, CommodityClear, and RepoClear.[13] These three services constitute LCH SA's non-U.S. business in that they operate entirely outside the United States and do not have any U.S. clearing members (''Non-U.S. Business''). LCH SA's CDS clearing services are entirely located in the CDSClear business unit. LCH SA's Non-U.S. Business does not provide CDS services. The following sections describe relevant portions of LCH SA's Form CA–1 application.[14]

A. Membership Standards

LCH SA has established requirements concerning membership, which include standards for financial responsibility, operational capacity, business experience, and creditworthiness.[15] Members must comply with these requirements on an ongoing basis.[16]

With respect to financial responsibility, LCH SA's CDSClear Rulebook contains net capital requirements that, among other things, establish minimum net capital requirements for members that are scalable based on the risk the members introduce to LCH SA. To assess a member's creditworthiness, LCH SA uses an internal credit scoring framework to determine the member's credit risk based on financial and qualitative factors.[17]

Regarding operational capacity and business experience requirements, a member must be able to demonstrate that it has sufficient expertise in clearing activities. This demonstration includes, among other things, that a member's systems and operations are sufficiently reliable and capable of supporting the performance of the member in meeting its obligations (including having sufficient facilities, equipment, personnel, hardware and software systems). Similarly, any prospective member of LCH SA must also demonstrate that it has appropriate banking arrangements.[18]

LCH SA ensures ongoing compliance with membership obligations by monitoring its members and imposing several reporting obligations on them. LCH SA monitors certain indicators on an ongoing basis, including but not limited, financial ratios, operational capabilities, external ratings, and market implied ratings. In addition, each member is required to notify LCH SA in writing of material changes to itself or its operations, such as changes in the direct or indirect controlling ownership, reduction in capital of more than 10%, the occurrence of insolvency proceedings, the default of any of the member's customers, and any change to the member's systems or operations that materially impact the member's ability

[1] 15 U.S.C. 78q–1.

[2] 17 CFR 240.17Ab2–1.

[3] 15 U.S.C. 78e and 78f.

[4] 15 U.S.C. 78s(b).

[5] 17 CFR 240.19b–4.

[6] 17 CFR 240.17Ad–22(c)(2) and 17 CFR 240.17Ad–22(c)(2)(iii).

[7] 17 CFR 240.17a–22.

[8] *See* Letter from Christophe Hémon, CEO, LCH SA, to Brent J. Fields, Secretary, Securities and Exchange Commission (August 9, 2016) (hereinafter ''Request for Exemptive Relief'').

[9] Securities Exchange Act Release No. 34–78941 (September 27, 2016), 81 FR 68074 (October 3, 2016) (File No. 600–36).

[10] *See* LCH SA Form CA–1, Exhibit A, 1.

[11] *See* LCH SA Form CA–1, Exhibit J–3 (CDSClear Service Description), Section 2.3.

[12] *Id.*

[13] *See* Request for Exemptive Relief at 4.

[14] The titles of the cited rules specify whether the rules are associated with CDSClear, LCH SA, or others.

[15] *See* LCH SA Form CA–1, Exhibit E–4 (CDSClear CDS Clearing Rule Book), Section 2.2.1 (hereinafter, ''CDSClear Rulebook'').

[16] *See id.* at Section 2.2.2.

[17] *See id.* at Article 2.2.4.1.

[18] *See id.* at Section 2.2.1.

to meet its obligations as a member. Furthermore, members are required to provide LCH SA with audited financial statements on an annual basis, as well as interim financial statements during the course of the year.[19]

B. Capacity To Enforce Rules and Discipline Members in Accordance With Fair Procedures

LCH SA has established CDSClear rules and procedures to monitor for breaches of its membership standards and rules, enforce its rules, and discipline members. The members are required to notify LCH SA of certain breaches relating to financial or operational capacity, and are required to submit to inspections and audits by LCH SA.[20] In the event that a member breaches its obligations, LCH SA may impose certain risk-reducing measures, including restricting a member's ability to submit additional transactions for clearing, or impose disciplinary sanctions, such as fines or public censure.[21] LCH SA also may suspend or terminate the membership in certain circumstances, such as upon a member's material breach of its obligations, upon suspension or termination of a member's membership in another clearing house, or upon the occurrence of an event that materially impacts the member's ability to meet its obligations under relevant membership agreements.[22]

LCH SA also has established pre-defined procedures for member discipline and for affording a member the opportunity to dispute a decision by LCH SA to impose disciplinary measures. These disciplinary procedures require investigations of an alleged breach and written notifications to a member regarding the details of the investigation and an opportunity for the member to object. Such procedures also provide members with the right to bring to the attention of LCH SA potential conflicts of interest involving investigative personnel appointed by LCH SA to perform an investigation of a member's alleged breach. Following an investigation, LCH SA is required to provide a written report of its findings to the member and, where LCH SA has determined to impose disciplinary proceedings, form a disciplinary committee and provide the member the opportunity to respond to the report. The disciplinary committee is required to provide the member with notice of its decision and any sanctions imposed. Members are permitted to dispute the decision and imposition of sanctions, and to submit such dispute to arbitration or litigation, as applicable.[23]

In addition, LCH SA has established procedures to notify a membership applicant if the applicant is denied membership. These procedures require LCH SA to communicate the reason(s) for such denial by registered mail to the applicant.[24]

C. Governance—Fair Representation and Operational and Risk Transparency

LCH SA is governed by its Board of Directors (''Board''), which determines LCH SA's business strategies and oversees implementation of those strategies. The Terms of Reference of LCH SA's Board of Directors require the Board to be composed of between three and eighteen directors and must include a non-executive chair, executive directors, independent [25] non-executive directors, at least one director representing the London Stock Exchange Group plc (''LSEG''),[26] and user directors, among other categories of directors.[27]

LCH SA has also established various Board-level committees to facilitate the Board's work. Specifically, LCH SA's Board has an Audit Committee tasked with determining whether LCH SA's management has put in place adequate internal control systems and assisting the Board in reviewing LCH SA's audited financial statements, regulatory compliance, risk governance framework, internal control environment and information security and business continuity plans.[28] The Audit Committee is made up of at least four non-executive directors of the Board, at least three of whom must be independent.[29] Additionally, one member of the Audit Committee must be a member of the Risk Committee (described below), one must be a user director and one must be recommended or approved by LSEG so long as LSEG controls at least 20% of the votes of LCH Group.[30]

As noted above, LCH SA's Board also has a Risk Committee to consider LCH SA's risk appetite, tolerance and strategy. The Risk Committee reviews on an annual basis LCH SA's operational risk policy and regularly reviews reports prepared by LCH SA's risk management department.[31] Representatives of members and customers are directly represented on the Risk Committee [32] and are chosen based on several factors, including asset classes cleared, volume cleared, contribution to relevant default funds and whether they have previously been a voting member of the Risk Committee.[33] The remainder of the committee is made up of independent, non-executive directors. The chairman of the Risk Committee must be an

[19] *See* LCH SA Form CA–1, Schedule A at 9; *see also* CDSClear Rulebook, Sections 2.3.1 and 2.3.2.

[20] *See id.* at Section 2.3.3.

[21] *See id.* at Section 2.4.1; and LCH SA Form CA–1, Exhibit E–6.8 (CDSClear CDS Clearing Procedures, Section 8: Disciplinary Proceedings) Section 8.4.

[22] *See* CDSClear Rulebook, Article 2.4.1.1.

[23] *See* LCH SA Form CA–1, Exhibit E–6.8 (CDSClear CDS Clearing Procedures, Section 8: Disciplinary Proceedings).

[24] *See* LCH SA Form CA–1, Exhibit E–6.1 (CDSClear CDS Clearing Procedures, Section 1: Membership).

[25] Independent director means a director, who satisfies applicable regulatory requirements regarding independent directors and who is appointed in accordance with the Nomination Committee terms of reference. *See* LCH SA Form CA–1, Exhibit A–2 (LCH SA Terms of Reference of the Board of Directors), Article 2. Under EMIR, LCH SA is required to maintain certain minimum number of members of the board that are independent and EMIR defines an independent member of the board as ''a member of the board who has no business, family or other relationship that raises a conflict of interest regarding the CCP concerned or its controlling shareholders, its management or its clearing members, and who has had no such relationship during the five years preceding his membership of the board.'' *See* Article 27 and Article 2(28), Regulation (EU) No. 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories, *available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012R0648.* In addition, in determining whether a person is fit for appointment as an independent director, the Nomination Committee will consider whether such person is independent in character and judgment, and whether there are relationships or circumstances (including any with LSEG or any of its subsidiary undertakings and/or with any significant user or venue shareholder) which are likely to affect, or could appear to affect, such person's judgment.'' See LCH.Clearnet Group Limited Terms of Reference of the Nomination Committee of the Board of Directors, Article 5.3, *available at http://www.lch.com/documents/731485/762675/qccp-status-lch-9+feb-2015.pdf/fa48a090-d90c-4193-91d8-52f8068a4c56.*

[26] As described in the Notice, LSEG is a majority owner of LCH Group.

[27] *See* LCH SA Form CA–1, Exhibit A and Exhibit A–2 (LCH SA Terms of Reference of the Board of Directors), Article 3. A user director is ''a director who is nominated by a shareholder of [LCH Group] which is a user or who is otherwise connected to such user shareholder by virtue of his employment or directorship.'' *Id.* at Article 2. For purposes of the definition of a ''user director,'' ''users'' include inter-dealer brokers, clearing members, financial institutions or investors which are buy-side, indirect 'users', including asset managers. *See* LCH SA Form CA–1, Exhibit E–2 (Special Resolution of LCH Group), Article 1.1. However, the category of user directors does not include customer directors, as ''customer'' is used under the CFTC rules.

[28] *See* LCH SA Form CA–1, Exhibit A–5 (LCH SA Terms of Reference of the Audit Committee of the Board of Directors), Section 1.

[29] *Id.* at Section 2.1.

[30] *Id.*

[31] *See* LCH SA Form CA–1, Exhibit A–4 (LCH SA Terms of Reference of the Risk Committee of the Board of Directors).

[32] *Id.* at Section 1.1.3.

[33] *Id.* at Section 1.7.

independent, non-executive director.[34] Management and additional member representatives may be invited to attend Risk Committee meetings in a non-voting capacity.[35]

In addition to these internal governance structures, LCH SA also has established a consultative process for considering external views regarding changes to its rules, as set forth in its CDSClear Rulebook, among other material documentation.[36] When LCH SA is considering changes to rules that apply to its clearing members, it must first consult with legal, risk, operational and/or other committees that it establishes, in which clearing members may request to participate.[37] If LCH SA determines to pursue the changes after this initial consultation, it must issue a proposal to all clearing members, providing at least 14 days for clearing members to comment.[38] Following the completion of the comment period, LCH SA may publish the new rule, for effectiveness no sooner than two days after its publication, presuming LCH SA has complied with all other regulatory requirements for changing its rules.[39]

Furthermore, LCH SA must publish and keep updated on its Web site its CDSClear Rulebook, as well as other material rules and other documents concerning CDSClear services.[40] Similarly, LCH SA must publish proposals and notices concerning any changes to the provisions of these documents,[41] as well as a current schedule of fees.[42]

D. Safeguarding of Securities and Funds and Financial Resources

i. Financial Resources

LCH SA employs a risk-based margin methodology specific to its CDSClear service to calculate its exposures to CDSClear members and to set initial margin requirements.[43] Specifically, LCH SA uses a Value at Risk (''VaR'') model to calculate member initial margin requirements sufficient to cover losses under normal market conditions with a 99.7% confidence interval.[44] This model takes into account a variety of risks, including changes to credit spreads, recovery rates, and interest rates,[45] and is reviewed on a monthly basis via back testing and stress testing (including reporting of the results of such review to risk management personnel). LCH SA performs an independent model validation annually, which includes a review of the parameters and assumptions that underlie the model by qualified and independent personnel. LCH SA imposes additional margin requirements on members to address position concentrations, wrong way risk, and illiquid positions over and above that calculated pursuant to its VaR model.[46] LCH SA also requires additional margin from members with lower internal credit scores, as well as for those members whose scores deteriorate or fall below a certain threshold.[47] LCH SA requires each member to post collateral to satisfy its margin requirement, which allows LCH SA to manage its risk exposure. LCH SA limits eligible collateral to cash and securities with low credit, liquidity, and market risk; as a further precaution, LCH SA applies haircuts to collateral posted in the form of securities.[48] In addition to its initial margin requirements, to manage the risk of price fluctuations occurring in a member's open position, LCH SA and members are required to make cash payments to meet a variation margin requirement.[49]

To further augment its ability to address a default, LCH SA has established a mutualized default fund dedicated to the CDSClear service. This fund is maintained separately from the default funds for LCH SA's other services.[50] The default fund is only available for use to cover losses as a result of, and following, an event of default with respect to a CDSClear member. LCH SA sizes the default fund to cover the theoretical losses associated with the default of the two CDSClear participant families to which LCH SA has the largest exposures in extreme but plausible market conditions, plus an additional buffer.[51] Each CDSClear member is required to contribute to the default fund in an amount that is the greater of the CDSClear member's proportionate share of the total CDSClear default fund based on the margin requirements related to positions held in the CDSClear service, or the minimum contribution of €10 million.[52] LCH SA calibrates its CDSClear default fund, and CDSClear member default fund requirements, on a monthly basis.[53] LCH SA's Risk Committee reviews results of stress testing related to the CDSClear default fund on at least a quarterly basis.[54]

ii. Collateral Policy and Investment of Collateral

LCH SA restricts the types of collateral that may be provided by members to satisfy their margin and default fund requirements to cash (in Euros), foreign exchange (restricted to U.S. Dollars and Pound Sterling), liquid sovereign debt instruments issued by governments in Western Europe (specifically, France, Belgium, Portugal, the United Kingdom, Italy, Spain, Germany, and the Netherlands) and the United States, as well as equities that are part of the Euro Stoxx 50 Index, and applies haircuts to all collateral received from members except cash.[55] LCH SA has established an investment risk policy to govern the management of cash collateral posted by members to satisfy their margin and default fund requirements. The investment risk policy provides that its objective is to ensure that cash collateral is invested securely by, among other things, requiring that investments be made with counterparties that meet certain minimum credit standards (based on LCH SA's internal credit assessment of the counterparty's financial condition

[34] *Id.* at Section 1.1.1.

[35] *Id.* at Sections 1.2 and 1.3.

[36] *See* CDSClear Rulebook, Article 1.2.2. The consultative process applies to changes in CDS Clearing Documentation, which includes CDSClear's CDS Admission Agreement, CDS Clearing Rules, CDS Clearing Supplement Documents, Index Cleared Transaction Confirmation and Single Name Cleared Transaction Confirmation, among other documents, as each is individually defined in Section 1.1.1 of the CDSClear Rulebook.

[37] *See id.* at Article 1.2.2.2.

[38] *Id.* The consultation process is not required, however, for certain limited, technical, or administrative changes; changes required to comply with applicable laws; or changes necessary to manage risks under certain extreme market developments. *See* CDSClear Rulebook, Article 1.2.2.4.

[39] *See* CDSClear Rulebook, Article 1.2.2.3.

[40] *See* CDSClear Rulebook, Section 1.2.3.

[41] *See id.* at Section 1.2.3.

[42] *See id.* at Article 1.2.6.1.

[43] *See* LCH SA Form CA–1, Exhibit H–1 (LCH SA Audited Financial Statements for the Year Ended 31 December 2015) at 22.

[44] *Id.*

[45] *See* LCH SA Form CA–1, Exhibit E–6.2 (CDSClear CDS Clearing Procedures, Section 2: Margin and Price Alignment Interest).

[46] *Id.*

[47] *See id.* at 20 and LCH SA Form CA–1, Exhibit J–3 (CDSClear Service Description), Section 9.1.

[48] *See* CDSClear Rulebook, Articles 4.2.6.3 and 4.2.6.4; *see also* LCH SA Form CA–1, Exhibit E–6.3 (CDSClear CDS Clearing Procedures Section 3: Collateral and Cash Payment), Section 3.9.

[49] *See* LCH SA Form CA–1, Exhibit H–1 (LCH SA Audited Financial Statements for the Year Ended 31 December 2015), 20; *see also* CDSClear Rulebook, Section 4.2.5 and LCH SA Form CA–1, Exhibit E–6.2 (CDSClear CDS Clearing Procedures, Section 2: Margin and Price Alignment Interest).

[50] *See* CDSClear Rulebook, Article 4.4.1.1.

[51] *See id.* at Articles 4.4.1.1 and 4.4.1.2.

[52] *See id.* at Article 4.4.1.3.

[53] *See* LCH SA Form CA–1, Exhibit J–3 (CDSClear Service Description), Section 11.1.

[54] *See* LCH SA Form CA–1, Exhibit A–4 (LCH SA Terms of Reference of the Risk Committee of the Board of Directors), Section 9.1.

[55] *See* LCH SA Form CA–1, Exhibit E–6.3 (CDSClear CDS Clearing Procedures Section 3: Collateral and Cash Payment).

and operational capacity).[56] Furthermore, LCH SA restricts the types of investments of collateral it is permitted to make by allowing cash deposits and purchases of securities, where such securities are not backed by certain governments, to be restricted to an overnight term only.[57]

iii. Default Management, Loss Allocation, and Recovery

To manage losses incurred in the event of a member default, LCH SA's default management process sets forth the steps LCH SA would take in the event of such an occurrence.[58] Upon the declaration of an event of default, LCH SA's default management process begins to minimize losses and disruption by attempting (i) to hedge against market risk, (ii) to transfer customer positions to non-defaulting members, and (iii) to dispose of the defaulting member's portfolio through a competitive auction process—all within a five-business-day period.[59] The only financial resources or recovery tools available to cover losses resulting from a CDSClear member's default are those specified in the CDSClear default waterfall.[60]

Under the CDSClear default waterfall, the defaulting CDSClear member's initial margin, variation margin, and additional margins are first used to cover losses. If these resources are insufficient to cover the losses, the defaulting CDSClear member's default fund contribution is applied. To the extent that losses are still not covered, LCH SA would utilize its own capital (in the amount established in the CDSClear default waterfall pursuant to the CDSClear Rulebook) to cover remaining losses. If losses exceed the financial resources used up to this point, LCH SA may then access the CDSClear default fund contributions of non-defaulting CDSClear members and also may impose additional default fund contribution assessments against non-defaulting CDSClear members. If these pre-funded resources and assessments are insufficient to cover losses within a five business-day period, LCH SA may impose, on a pro rata basis, reductions in daily settlement payments owed to non-defaulting members (''Variation Margin Haircutting''), subject to certain limits. The entire default management process, including the use of Variation Margin Haircutting, is intended to be completed within five business days following the declaration of a default.[61] At any time during the default management process, if LCH SA determines that it would not have sufficient resources to meet obligations arising from the default auction or auctions in accordance with the default waterfall, LCH SA must early terminate all open contracts and proceed to wind down the CDSClear service pursuant to the terms set forth in the CDSClear Rulebook.[62]

To manage its liquidity needs resulting from a member's default, LCH SA monitors and measures its liquidity resources and requirements daily, at the entity level. In addition to cash collateral, LCH SA may use its own capital as an immediately available liquidity resource, and during liquidity stress events, LCH SA also can access central bank liquidity through the Banque de France, as well as other secured financing facilities that LCH SA maintains.[63]

LCH SA makes its default policies and procedures available to members by posting them to its public Web site, in addition to other key information such as default resources, margin methodology, daily settlement prices, and open interest and volume, among other things.[64]

E. Operational Risk Management

LCH SA manages its operational risk pursuant to, among other policies and procedures, an operational risk policy applicable to each entity within LCH Group. The operational risk policy lists regulatory operational risk standards applicable to LCH SA; assigns roles and responsibilities to the business departments, Operational Risk Department, and Audit Department for the identification, assessment, and mitigation of operational risks; and establishes regularly scheduled reviews of the framework by management and applicable committees of the Board of Directors. The operational risk management policy requires ongoing self-assessment, monitoring, and reporting of risks (including to relevant Board of Directors and business control committees), as well as the development and implementation of risk mitigation plans when necessary. LCH SA's rules and procedures also provide for regular testing of its various systems as part of its operation risk management process.[65]

LCH SA's policies and procedures establish governance processes to reinforce controls and procedures for operational risk management. For example, the operational risk management framework establishes monitoring and reporting obligations by the risk owners and Operational Risk Department to applicable Board committees. The Terms of Reference of the Audit Committee and Risk Committee, respectively, dictate the Committees' responsibilities to oversee various aspects of LCH SA's operational risk management. The Risk Committee, among other things, considers the risk controls related to new markets and contracts; reviews LCH SA's money settlement arrangements; and reviews LCH SA's Operational Risk Policy.[66] The Audit Committee has responsibility for determining whether management has put in place adequate internal control systems that provide reasonable assurance that corporate objectives will be achieved and that LCH SA complies with applicable regulatory requirements.[67]

LCH SA has established multiple policies, standards, procedures, and operational guidelines pertaining to system reliability, resiliency, and security. For example, LCH SA's business continuity and disaster recovery plans address threat assessments and monitoring, systems testing, and possible responses to potential threats, including the migration of main operational and data systems to back-up systems and sites.[68] LCH SA maintains multiple systems and data centers in support of maintaining operational capacity and resilience. In addition, LCH SA's rules require its clearing members to participate in technical and operational tests organized by LCH SA to ensure the continuity and orderly functioning of the CDS Clearing Service.[69] Moreover, LCH SA also maintains an ongoing self-assessment policy to continually

[56] *See* LCA SA Form CA–1, Exhibit H–1 (LCH SA Audited Financial Statements for the Year Ended 31 December 2015), 20.

[57] *See* LCH Group Risk Management Policy: Investment Risk.

[58] *See* CDSClear Rulebook, Appendix 1 ''CDS Default Management Process'').

[59] *See* LCH SA Form CA–1, Schedule A, 10–11; *see also* CDSClear Rulebook, Appendix 1, Section 2.1.

[60] *See* CDSClear Rulebook, Section 4.4.1.

[61] *See* LCH SA Form CA–1, Exhibit J–3 (CDSClear Service Description), Section 11.2; *see also* CDSClear Rulebook, Appendix 1.

[62] *See* CDSClear Rulebook, Appendix 1, Clauses 2.1.4 and 8.1.

[63] *See* LCH SA Form CA–1, Exhibit H–1 (LCH SA Audited Financial Statements for the Year Ended 31 December 2015), 27–28.

[64] *See* CDSClear Rulebook, Title IV, Chapters 3 and 4, and Appendix 1.

[65] *See* LCH SA Form CA–1, Exhibit K (LCH SA Security Measures and Operational Safeguards).

[66] *See* LCH SA Form CA–1, Exhibit A–4 (LCH SA Terms of Reference of the Risk Committee of the Board of Directors).

[67] *See* LCH SA Form CA–1, Exhibit A–5 (LCH SA Terms of Reference of the Audit Committee of the Board of Directors).

[68] *See* LCH SA Form CA–1, Exhibit K–2 (LCH Group Business Continuity Management Policy).

[69] *See generally,* CDSClear Rulebook, Section 2.2.8

monitor and assess operational risk, such as security risk, and provide for the mitigation of such risks when they exceed applicable tolerances.[70] Furthermore, LCH SA has established policies and procedures regarding information security that provide for requirements with respect to employee access and use of business and customer information, as well as the maintenance of confidentiality of sensitive information.[71] Additionally, LCH SA is subject to group-wide policies and procedures that that govern personal trading of employees for their own account.[72]

F. Fees, Dues, and Charges

LCH SA charges transaction fees linked to products and annual membership fees, which are generally usage-based and apply equally to all members using LCH SA's CDSClear service. LCH SA also imposes annual account structure fees for individually segregated accounts and omnibus segregated accounts that are equally applicable to all members.[73]

III. Discussion

Section 17A(b)(1) of the Act requires a clearing agency to register with the Commission prior to performing the functions of a clearing agency.[74] The Commission shall grant a clearing agency's registration if it finds that the requirements of the Act and the rules and regulations thereunder with respect to the clearing agency are met.[75] Section 17A(b)(3) of the Act requires that the Commission make a number of determinations with respect to the clearing agency's organization, capacity, and rules,[76] including, among other things, determining whether a clearing agency is ''so organized and [has] the capacity to be able to facilitate the prompt and accurate clearance and settlement of securities transactions and derivative agreements, contracts, and transactions for which it is responsible, to safeguard securities and funds in its custody or control or for which it is responsible, [and] to comply with the provisions of [the Act] and the rules and regulations thereunder.'' [77] The Commission discusses below the applicable requirements under the Exchange Act and rules and regulations thereunder, and its findings regarding whether these requirements are met.

A. Membership Standards

1. Exchange Act Requirements

Section 17A(b)(3)(B) of the Act provides that the rules of a clearing agency must permit certain enumerated categories of persons to be eligible for membership: Registered brokers or dealers, registered clearing agencies, registered investment companies, banks, and insurance companies.[78]

Section 17A(b)(4)(B) of the Act allows a registered clearing agency to deny, or condition participation of, any member or any category of members listed in Section 17A(b)(3)(B) of the Act if such persons do not meet the financial responsibility, operational capability, experience, and competence standards set forth by the clearing agency.[79] In addition, Section 17A(b)(3)(F) of the Act requires that the rules of the clearing agency must not be designed to permit unfair discrimination in the admission of members or among members in the use of the clearing agency.[80] Similarly, Section 17A(b)(3)(I) provides that the rules of a clearing agency may not impose any burden on competition not necessary or appropriate in furtherance of the purposes of section 17A.[81]

Rules 17Ad–22(b)(5) and (6) further require that a registered clearing agency establish, implement, maintain, and enforce written policies and procedures that do not limit membership to dealers and do not impose any specific portfolio size or transaction volume minimums.[82] Rule 17Ad–22(b)(7) [83] requires that a registered clearing agency establish, implement, maintain, and enforce written policies and procedures that provide a person who maintains net capital equal to or greater than $50 million with the ability to obtain membership at the clearing agency, so long as the net capital requirement is scalable to the risk posed by the participant's activities. In addition, Rule 17Ad–22(d)(2) requires that a registered clearing agency establish, implement, maintain, and enforce written policies and procedures to require participants to have sufficient financial resources and robust operational capacity to meet obligations arising from participation in the clearing agency; have procedures in place to monitor that participation requirements are met on an ongoing basis; and have participation requirements that are objective and publicly disclosed, and permit fair and open access.[84]

2. Commission Findings

The Commission finds that LCH SA's membership standards, as described in the application, are consistent with Exchange Act Section 17A and the relevant provisions of Rule 17Ad–22.

i. Access to the Clearing Services

With respect to providing access to CDSClear services, LCH SA has established a general membership category for non-EU persons [85] that includes the categories of persons enumerated in Section 17A(b)(3)(B).[86] Therefore, as described in the application, LCH SA's rules are

[70] *See, e.g.,* LCH SA Form CA–1, Ex. K–3 (LCH. Clearnet Group Information Security Strategy/ Maturity Self-assessment tool); LCH Clearnet Group Operational Risk Policy—Operational Risk Management.

[71] *See* LCH SA Form CA–1, Exhibits K–1.1 (LSEG Employee Information Security Policy) and K–1.2 (Technical Information Security Policy).

[72] *See* LCH.Clearnet Group Confidentiality Policy; Group Personal Account Dealing Policy; and Group Market Abuse Policy.

[73] *See* LCH SA Form CA–1, Exhibit Q (LCH SA Schedule of Prices, Rates or Fees Fixed by Registrant for Services Rendered by its Participants).

[74] 15 U.S.C. 78q–1(b)(1).

[75] 15 U.S.C. 78s(a)(1); 15 U.S.C. 78q–1(b)(3). Among other requirements, registered clearing agencies are subject to Exchange Act Rule 17Ad–22. In 2012, the Commission adopted standards establishing minimum requirements regarding registered clearing agencies' risk management procedures and controls. *See* Securities Exchange Act Release No. 68080 (Oct. 22, 2012), 77 FR 66220 (Nov. 2, 2012). On September 28, 2016, the Commission adopted amendments to Rule 17Ad–22 establishing enhanced standards for the operation and governance of those clearing agencies registered with the Commission that meet the definition of covered clearing agency. *See* Securities Exchange Act Release No. 78961 (Sep. 28, 2016), 81 FR 70786 (Oct. 13, 2016) (compliance date April 11, 2017). *See also* Definition of Covered Clearing Agency, Proposed Rule Amendments, Securities Exchange Act Release No. 78963 (Sept. 28, 2016), 81 FR 70744 (Oct. 13, 2016).

[76] 15 U.S.C. 78q–1(b)(3).

[77] 15 U.S.C. 78q–1(b)(3)(A).

[78] 15 U.S.C. 78q–1(b)(3)(B).

[79] 15 U.S.C. 78q–1(b)(4)(B).

[80] 15 U.S.C. 78q–1(b)(3)(F).

[81] 15 U.S.C. 78q–1(b)(3)(I).

[82] 17 CFR 240.17Ad–22(b)(5) and (6).

[83] 17 CFR 240.17Ad–22(b)(7).

[84] 17 CFR 240.17Ad–22(d)(2).

[85] *See* CDSClear Rulebook, Section 2.1.1.2(v).

[86] 15 U.S.C. 78q–1(b)(3)(B). Article 2.1.1.2(v) of the CDSClear Rulebook refers to ''Credit Institutions'' and ''Investment Firms'' not having their head office in a ''Member State'' of the European Economic Area, as well as legal persons whose principal or sole object is the clearing of financial instruments.

The terms ''Investment Firm'' and ''Credit Institution,'' as defined in relevant European directives, substantially overlap with the categories of persons enumerated in Section 17A(b)(3)(B), as defined in the Exchange Act and, where incorporated by reference in the Exchange Act, the Investment Company Act of 1940. *Compare* definitions of ''Investment Firm'' (Directive 2004/39/EC Article 4(1)(1) and Annex I, Section A) and ''Credit Institution (Directive 2006/48/EC, Article 4(1)(a)) *with* definitions of ''broker'' (15 U.S.C. 78c(a)(4)), ''dealer'' (15 U.S.C. 78c(a)(5)), ''clearing agency'' (15 U.S.C. 78c(a)(23)), ''investment company'' (15 U.S.C. 80a–3(a)(1)), ''insurance company'' (15 U.S.C. 80a–2(a)(17)) and ''bank'' (15 U.S.C. 78c(a)(6)). Thus, CDSClear's general admission category for non-European persons would include persons who are seeking clearing membership and are brokers, dealers, clearing agencies, investment companies, banks, and insurance companies.

consistent with Section 17A(b)(3)(B).[87] In addition, LCH SA's rules do not tie CDSClear membership to providing any specific dealer service, maintaining a portfolio of any minimum size or maintaining any particular transaction volume. Therefore, LCH SA's rules, as described in the application, are consistent with Rules 17Ad–22(b)(5) and (6).[88] Finally, LCH SA's rules contemplate a minimum net capital requirement of $50 million for U.S. FCM clearing members or €37 million for other clearing members of CDSClear.[89] The rules specifically give LCH SA discretion to scale (a) a CDSClear member's net capital requirement in accordance with the level of risk it introduces to LCH SA, and (b) a CDSClear member's level of risk it introduces to LCH SA in accordance with its net capital requirement.[90] Therefore, LCH SA's rules, as described in the application, provide that any net capital requirements are scalable so that they are proportional to the risk posed by the participant's activities to the clearing agency, consistent with Rule 17Ad–22(b)(7).[91]

ii. Capacity To Perform Obligations to Clearing Agency

With respect to clearing membership standards, the Commission finds that LCH SA's rules establish standards for CDSClear membership that are consistent with Sections 17A(b)(4)(B), 17A(b)(3)(F), and 17A(b)(3)(I).[92] Specifically, LCH SA's rules provide that an applicant for CDSClear membership must be able to pay amounts required by LCH SA, including margin and default fund contributions. An applicant must also satisfy a minimum internal credit score that is based on quantitative and qualitative data,[93] have sufficient expertise in relation to clearing activities, and have systems and personnel required to support performance as a participant.[94] Further, LCH SA has the authority under its rules to deny participation if a CDSClear applicant does not meet these standards.[95] Although LCH SA's rules permit LCH SA to impose, amend or withdraw additional requirements in relation to its CDSClear membership standards, LCH SA may do so only if such additional requirements are non-discriminatory and their objective is to control the risk members pose to LCH SA.[96] These rules, along with the others addressing a member's continuing obligations,[97] provide standards for members' financial responsibility, operational capability, experience, and competence, consistent with Exchange Act Section 17A(b)(4)(B).[98] In addition, the Commission finds that these rules are not designed to permit unfair discrimination in the admission of members or among members' use of the clearing agency, and any burden they impose on competition is necessary or appropriate in furtherance of the purposes of Section 17A; they therefore satisfy the requirements of Exchange Act Sections 17A(b)(3)(F) and 17A(b)(3)(I).[99]

The Commission believes that LCH SA's rules with respect to the CDSClear service also satisfy the requirement in Rule 17Ad–22(d)(2) that a registered clearing agency establish, implement, maintain, and enforce written policies and procedures reasonably designed to require participants to have sufficient financial resources and robust operational capacity to meet obligations arising from participation in the clearing agency, are objective and publicly disclosed, and permit fair and open access.[100] As described above, LCH SA's rules prescribe standards with respect to members' financial responsibility, operational capability, experience, and competence designed to manage risks to the clearing agency. These standards require participants to have sufficient financial resources and robust operational capacity to meet their obligations because LCH SA can set and monitor financial requirements and operational capacity commensurate with LCH SA's business and risk management needs. Specifically, LCH SA can apply scalable capital requirements[101] and assesses its members' credit risk;[102] clearing members must pay amounts required by LCH SA, specifically margin and default fund requirements and cash payment obligations;[103] clearing members must not be subject to insolvency proceedings;[104] and clearing members must satisfy LCH SA that they have sufficient expertise in relation to clearing activities and that their systems and operations are operationally reliable and capable of supporting proper performance of its business as a clearing member.[105] These standards apply equally to all applicants for CDSClear membership and existing CDSClear members and are publicly disclosed in the CDSClear Rulebook. Therefore, the Commission finds that LCH SA's CDSClear membership standards meet Rule 17Ad–22(d)(2)'s requirement that standards be reasonably designed to be objective, are publicly disclosed, and permit fair and open access.

LCH SA requires its CDSClear members to maintain on-going compliance with the standards described above, subject to on-going monitoring by LCH SA.[106] For example, LCH SA's rules require clearing participants to report significant events[107] and file regularly certain financial information with LCH SA.[108] In addition to monitoring various forward-looking indicators;[109] LCH SA's rules require that participants agree to submit clearing activity to inspections reasonably requested by LCH SA,[110] and participate in technical and operational tests.[111] The Commission therefore finds that LCH SA meets the requirement in Rule 17Ad–22(d)(2) to establish, implement, maintain, and enforce written policies and procedures reasonably designed to have procedures in place to monitor that participation requirements are met on an ongoing basis.[112]

B. Capacity To Enforce Rules and Discipline Members in Accordance With Fair Procedures

1. Exchange Act Requirements

Section 17A(b)(3)(A) of the Act provides that a clearing agency must be organized and have the capacity to enforce compliance by its members with the rules of the clearing agency.[113] Section 17A(b)(3)(G) of the Act requires that the rules of a clearing agency provide that its members shall be appropriately disciplined for violations of any provision of those rules by expulsion, suspension, a limitation of activities, functions, and operations, fine, censure, or any other fitting

[87] 15 U.S.C. 78q–1(b)(3)(B).
[88] 17 CFR 240.17Ad–22(b)(5) and (6).
[89] *See* CDSClear Rulebook, Section 2.2.3.
[90] *See id.* at Section 2.2.3.
[91] 17 CFR 240.17Ad–22(b)(7).
[92] 15 U.S.C. 78q–1(b)(3)(B), (F) and (I).
[93] *See* CDSClear Rulebook, Section 2.2.4.
[94] *See id.* at Section 2.2.1.
[95] *See id.* at Article 2.2.0.1.
[96] *Id.* at Article 2.2.0.1.
[97] *See id.* at Article 2.2.2.1.
[98] 15 U.S.C. 78q–1(b)(4)(B).
[99] 15 U.S.C. 78q–1(b)(3)(F) and (I).
[100] *See* 17 CFR 240.17Ad–22(d)(2).
[101] CDSClear Rulebook, Article 2.2.3.1.
[102] *See id.* at Article 2.2.4.1. CDS Clear assigns clearing members an internal credit score. This score is based on data including financial analysis, external market data and implicit or external support available to the clearing member. *Id.*
[103] *See id.* at Article 2.2.1.1(xiii).
[104] *Id.* at Article 2.2.1.1(vii).
[105] *Id.* at Article 2.2.1.1(x).
[106] *Id.* at Article 2.2.2.1.
[107] *Id.* at Article 2.3.1.1.
[108] *Id.* at Article 2.3.1.2.
[109] *Id.* at Section 2.3.2.
[110] *Id.* at Section 2.3.3.
[111] *Id.* at Article 2.2.8.1.
[112] 17 CFR 240.17Ad–22(d)(2).
[113] 15 U.S.C. 78q–1(b)(3)(A).

sanction.[114] Section 17A(b)(3)(H) of the Act requires that the rules of the clearing agency be in accordance with the provisions of Section 17A(b)(5), and, in general, provide a fair procedure with respect to the disciplining of members, the denial of membership, and the prohibition or limitation by the clearing agency of any person with respect access to the services offered by the clearing agency.[115] Section 17A(b)(5) generally requires a clearing agency to bring specific charges, notify a disciplined participant of them, give a disciplined participant an opportunity to defend against such charges, and keep a record in determining whether a participant should be disciplined.[116]

2. Commission Findings

The Commission finds that LCH SA meets the above-described requirements with respect to its CDSClear service. As part of the CDS Admission Agreement, CDSClear members must abide by relevant LCH SA rules and procedures.[117] Pursuant to these rules and procedures, LCH SA has the ability to (i) notify members that it believes they may have violated LCH SA's rules, (ii) conduct an investigation of alleged breaches, (iii) communicate its investigation results with the members, (iv) form a disciplinary committee, (v) grant an opportunity for members to contest the allegations, and (vi) impose disciplinary measures accompanied by details of the grounds supporting the decision and sanctions imposed, if any.[118] Moreover, LCH SA's rules and procedures confer on it the discretion to tailor its disciplinary measures to the nature and severity of the infraction at issue: In accordance with its rules and procedures, LCH SA may choose to suspend or terminate any member of CDSClear, convey a public or private reprimand, impose sanctions, or impose fines.[119] The breadth of disciplinary measures available to LCH SA and the flexibility to tailor these measures to the nature and severity of any infractions of its rules, coupled with the procedural safeguards—described more fully below—conferred on members accused of violations, taken together, enable LCH SA to ''appropriately'' discipline members for violations of its rules. Therefore, the Commission finds that LCH SA's rules provide for appropriate disciplinary measures and sanctions of its members for violations of LCH SA's rules.

With their significant procedural protections described in Section II.B, LCH SA's rules also satisfy applicable fairness requirements. Among other things, members have the right to notice of any alleged violation, the right to respond, the right to a hearing, and the right to an explanation of the grounds supporting the discipline imposed.[120] In addition, LCH SA's rules are designed to avoid conflicts of interest by permitting members to object to personnel selected by LCH SA to lead an investigation of the member on the basis of the existence of a conflict of interest and by allowing members to refuse access to their offices by LCH SA's personnel when a substantiated conflict of interest exists.[121] If disciplinary measures are imposed, a member has the right to contest them by arbitration or litigation pursuant to LCH SA's procedures.[122] Similarly, if LCH SA denies membership to an applicant, LCH SA will provide the reasons for the denial of access.[123] Members are permitted to dispute the decision and imposition of sanctions, and to submit such dispute to arbitration or litigation, as applicable.[124] Taken together, the procedural protections in LCH SA's rules ensure, at a minimum, that targets of discipline are informed of the charges pending against them, have the ability to contest those charges, will receive an explanation of the discipline imposed, if any, and will have the opportunity to appeal any adverse decision.

Therefore, the Commission finds that LCH SA's rules, policies, and procedures, as described in the application, meet the requirements under Exchange Act Section 17A(b)(3)(A) (regarding the capacity to enforce compliance by its members with the rules of the clearing agency), Section 17A(b)(3)(H) (regarding providing a fair procedure with respect to the disciplining of members, the denial of membership, and the prohibition or limitation with respect to access to the services offered by the clearing agency), and Section 17A(b)(5) (regarding bringing charges against members, disciplinary notification, affording members with an opportunity to defend against charges, and recordkeeping relating to disciplinary determinations).

C. Governance—Fair Representation and Operational and Risk Transparency

1. Exchange Act Requirements

Section 17A(b)(3)(C) of the Act requires that the rules of a clearing agency assure fair representation of the clearing agency's shareholders (or members) and participants in the selection of the clearing agency's directors and in the administration of the clearing agency's affairs.[125] In addition, Rule 17Ad–22(d)(8) requires that a clearing agency establish, implement, maintain, and enforce written policies and procedures reasonably designed to, as applicable, have governance arrangements that are clear and transparent to fulfil the public interest requirements in Section 17A of the Act applicable to clearing agencies, to support the objectives of owners and participants, and to promote the effectiveness of the clearing agency's risk management procedures.[126] Rule 17Ad–22(d)(9) provides that a clearing agency must establish, implement, maintain, and enforce written policies and procedures reasonably designed to provide market participants with sufficient information for them to identify and evaluate the risks and costs associated with using the clearing agency's services.[127]

2. Commission Findings

The Commission finds that LCH SA's rules meet the above-described requirements under the Exchange Act. With respect to the selection of directors, the Terms of Reference of the LCH SA Board provide that the Board is composed of three through eighteen directors in the categories of a non-executive Chairman, independent non-executive directors, executive directors, venue directors, user directors, and one director representing LSEG.[128] Currently, LCH SA's Board consists of fourteen directors, three of whom are affiliated with clearing participants. Although LCH SA's rules do not specify the number of directors in each category, the Board's Terms of Reference specify that these categories and numbers of directors within each category are subject to change to comply with any applicable legal or regulatory

[114] 15 U.S.C. 78q–1(b)(3)(G).

[115] 15 U.S.C. 78q–1(b)(3)(H).

[116] 15 U.S.C. 78q–1(b)(5).

[117] *See* LCH SA Form CA–1, Exhibit P–2 (LCH SA CDS Admission Agreement).

[118] *See* CDSClear Rulebook, Sections 2.3 and 2.4 and Exhibit E–6.8 (CDSClear CDS Clearing Proceedings, Section 8: Disciplinary Proceedings).

[119] *See id.*

[120] *See* LCH SA Form CA–1, Exhibit E–6.8 (CDSClear CDS Clearing Procedures, Section 8: Disciplinary Proceedings).

[121] *See id.* at Section 8.2(a)(iii) and (v).

[122] *See* LCH SA Form CA–1, Exhibit E–6.8 (CDSClear CDS Clearing Procedures, Section 8: Disciplinary Proceedings).

[123] *See* LCH SA Form CA–1, Exhibit E–6.1 (CDSClear CDS Clearing Procedures, Section 1: Membership).

[124] *See* LCH SA Form CA–1, Exhibit E–6.8 (CDSClear CDS Clearing Procedures, Section 8: Disciplinary Proceedings).

[125] 15 U.S.C. 78q–1(b)(3)(C).

[126] 17 CFR 240.17Ad–22(d)(8).

[127] 17 CFR 240.17Ad–22(d)(9).

[128] *See* LCH SA Form CA–1, Exhibit A–2 (LCH SA Terms of Reference of the Board of Directors), Article 3.

requirements from time to time (including the appointment of additional directors as may be required from time to time).[129] Therefore, LCH SA's rules are designed to ensure that the numbers of the directors in each category, including user directors, satisfy the fair representation requirements in the Exchange Act and enable LCH SA to adapt the composition of its Board to any evolving regulatory requirements. The Commission finds that users have the opportunity to provide meaningful input in the nomination for appointment of user directors.[130] Taken together, LCH SA's rules meet the requirement to assure fair representation of its shareholders and participants in the selection of its directors under Section 17A(b)(3)(C) of the Act.[131]

With respect to the administration of its affairs, LCH SA's rules establish a consultative process for considering clearing member views regarding material changes to LCH SA's rules that apply to clearing members, as described in Section II.C above. Additionally, as described in Section II.C and discussed further below, the Audit and Risk Committees have substantial roles in risk management oversight and informing the full Board on risk management activities. Because there are roles for clearing members and customers on the Risk Committee and for the user director on the Audit Committee, the Commission believes LCH SA assures that participants have fair representation in the administration of LCH SA's affairs, as required by Section 17A(b)(3)(C) of the Act.[132]

In particular, LCH SA's Board has established an Audit Committee and a Risk Committee, which are tasked with engagement in and oversight of various aspects of LCH SA's financial and operational risk management. For example, as described in Section II.C, the Audit Committee oversees internal control systems and assists the Board in reviewing LCH SA's audited financial statements, regulatory compliance, risk governance framework, internal control environment, and information security and business continuity plans.[133] Among other things, the Audit Committee also monitors the quality and effectiveness of the internal Audit Department,[134] reviews the process for annual validations of LCH SA's risk management models,[135] commissions and reviews audit reports relating to the risk management of LCH SA,[136] and establishes and annually reviews LCH SA's operational risk policy.[137] The Audit Committee must also ensure that the Board is regularly informed of the adequacy of key control systems in the financial, operational and compliance-related areas.[138]

Additionally, LCH SA's Board has established a Risk Committee,[139] which includes members and customer representatives.[140] The Risk Committee considers LCH SA's risk appetite, tolerance, and strategy. Among other things, the Risk Committee also reviews initial and ongoing membership requirements and decisions on membership applications,[141] the decision to clear a new product or contract,[142] margin methodology adequacy and changes,[143] and default fund adequacy and changes to stress testing scenarios.[144]

To ensure that LCH SA's governance structure and important decisions are clear and transparent to the public, the Risk Committee is also tasked with ensuring publication on LCH SA's Web site summaries of significant decisions arising from its operations that implicate the public interest, including decisions relating to open access, membership and the determination to accept a new product for clearing.[145] Therefore, the Commission believes that LCH SA has governance arrangements that are clear and transparent to fulfil the public interest requirements in Section 17A of the Act applicable to clearing agencies, to support the objectives of owners and participants, and to promote the effectiveness of the clearing agency's risk management procedures, as required by Rule 17Ad–22(d)(8).[146]

Similarly, the Commission further believes that LCH SA provides sufficient transparency to market participants with respect to the costs and risks associated with using CDSClear. LCH SA achieves this transparency by making available to members and the public information regarding the fees and costs associated with using CDSClear (including disclosure of product specific fees for self and customer clearing, and account structures fees), as well as the CDSClear Rulebook (which includes key default management provisions).[147] LCH SA also publishes information regarding daily settlement prices, volume and open interest.[148] This information provides current and potential members with the opportunity to assess costs and risks associated with membership, allowing for informed decision making with respect to continuing or commencing membership in the CDSClear service. Furthermore, based on the public disclosure of significant decisions described above, as well as publication of the clearing procedures, and governance arrangements, the Commission finds that, as described in the application, LCH SA meets the requirement to provide market participants with sufficient information for them to identify and evaluate the risks and costs associated with using the clearing agency's services, as required by Rule 17Ad–22(d)(9).[149]

D. Safeguarding of Securities and Funds and Financial Resources

1. Exchange Act Requirements

Sections 17A(b)(3)(A) and (F) of the Act, in part, require that a clearing agency be duly organized and not only have the capacity to safeguard securities

[129] *Id.* The Board's proposal for appointment of each director at a shareholders' meeting must be based on recommendations made by the Nomination Committee, which is required to recommend two user directors out of an aggregate of ten directors that the Nomination Committee is required to recommend to the Board for appointment as directors. *See* LCH.Clearnet Group Limited Terms of Reference of the Nomination Committee of the Board of Directors, Article 2.4, *available at http://www.lch.com/documents/731485/762675/qccp-status-lch-9+feb-2015.pdf/fa48a090-d90c-4193-91d8-52f8068a4c56.* Therefore, users will be represented by at least two directors on the Board.

[130] In formulating its recommendation for user director nominees, the user member sitting on the Nomination Committee must be present to satisfy a quorum, and the rules further allow the seventeen largest user shareholders of LCH Group who are not connected with an existing director to submit names to the Nomination Committee for consideration as a user director. *See* LCH.Clearnet Group Limited Terms of Reference of the Nomination Committee of the Board of Directors, Appendix, *available at http://www.lch.com/documents/731485/762675/qccp-status-lch-9+feb-2015.pdf/fa48a090-d90c-4193-91d8-52f8068a4c56.* Therefore, users will have the opportunity to provide meaningful input in the nomination of user directors.

[131] 15 U.S.C. 78q–1(b)(3)(C).

[132] *Id.*

[133] *See* LCH SA Form CA–1, Exhibit A–5 (LCH SA Terms of Reference of the Audit Committee of the Board of Directors), Section 1.

[134] *Id.* at Section 3.3.3(c).

[135] *Id.* at Section 3.3.5(a).

[136] *Id.* at Section 3.3.5(c).

[137] *Id.* at Section 3.3.9(a).

[138] *Id.* at Section 5.4.

[139] *See* LCH SA Form CA–1, Exhibit A–4 (LCH SA Terms of Reference of the Risk Committee of the Board of Directors).

[140] *Id.* at Section 1.1.

[141] *Id.* at Section 6.

[142] *Id.* at Section 7.

[143] *Id.* at Section 8.

[144] *Id.* at Section 9.

[145] *Id.* at Section 14.

[146] 17 CFR 240.17Ad–22(d)(8).

[147] *See http://www.lch.com/asset-classes/otc-credit-default-swaps/fees* and *http://www.lch.com/rules-regulations/rulebooks/sa.*

[148] *See http://www.lch.com/asset-classes/cdsclear.*

[149] 17 CFR 240.17Ad–22(d)(9).

and funds over which it has custody and control, or for which it is responsible, but also implement rules designed to do so.[150] In addition, under Section 17A(b)(3)(F), a clearing agency's rules must be designed to promote the prompt and accurate clearance and settlement of securities transactions and, in general, to protect investors and the public interest.[151] Moreover, rule 17Ad–22 requires a clearing agency to establish, implement, maintain, and enforce reasonably designed policies and procedures pertaining to the maintenance of sufficient financial resources, the investment of cash collateral, liquidity risk management, and default management.

i. Financial Resources

Rule 17Ad–22(b)(2) requires a registered cleared agency that performs CCP services to establish, implement, maintain, and enforce written policies and procedures reasonably designed to use margin requirements to limit its credit exposures to participants under normal market conditions, use risk-based models and parameters to set margin requirements, and review such margin requirements and the related risk-based models and parameters at least monthly.[152] Rule 17Ad–22(b)(3) requires a registered clearing agency acting as a CCP for security-based swaps to establish, implement, maintain, and enforce written policies and procedures reasonably designed to maintain sufficient financial resources to withstand, at a minimum, a default by the two participant families to which it has the largest exposures in extreme but plausible market conditions, in its capacity as a CCP for security-based swaps.[153] Rule 17Ad–22(b)(4) requires registered clearing agencies to establish, implement, maintain, and enforce written policies and procedures reasonably designed to provide for an annual model validation consisting of evaluating the performance of the clearing agency's margin models and the related parameters and assumptions associated with such models by a qualified person who is free from influence from the persons responsible for the development or operation of the models being validated.[154]

ii. Collateral Policy and Investment of Cash Collateral

Rule 17Ad–22(d)(3) requires registered clearing agencies to have policies and procedures reasonably designed to ensure that the clearing agency (i) holds assets in a manner that minimizes the risk of loss or of delay in their access, and (ii) invests assets in instruments with minimal credit, market and liquidity risks.[155]

iii. Default Management, Loss Allocation, and Recovery

With respect to managing a member default, Section 17A(b)(3)(F) of the Act requires a registered clearing agency to assure the safeguarding of securities and funds, promote the prompt and accurate settlement of securities transactions, and, in general, protect investors and the public interest.[156] In addition, Rule 17Ad–22(d)(11) provides that such clearing agency must have policies and procedures to make key aspects of its default procedures publicly available and establish default procedures that ensure that the clearing agency can take timely action to contain losses and liquidity pressures and to continue meeting its obligations in the event of a participant default.[157]

2. Commission Findings

i. Financial Resources

As described in Section II.D.i above, LCH SA has policies and procedures that provide for the use of a VaR model to calculate margin requirements for members and for the review of the model on a monthly basis. These policies and procedures provide that the CDSClear model take into consideration a variety of risks relevant to clearing security-based swaps, including, but not limited to, changes in credit spreads, recovery rates, and interest rates, in order to appropriately measure LCH SA's exposures to CDSClear members under normal market conditions.[158] In addition to the margin requirements calculated using the model, LCH SA also imposes additional margin charges on members to address concentration risk, wrong way risk, and liquidity risk, which exist under normal market conditions, and imposes additional margin on members with lower credit ratings. LCH SA's policies and procedures require CDSClear members to post collateral to meet these margin requirements, and to also post variation margin. Additionally, the CDSClear rules establish a mutualized default fund that, together with the margin requirements, is sized to maintain sufficient financial resources sufficient to withstand, at a minimum, the default by the two CDSClear member families to which LCH SA has the largest exposures in extreme but plausible market conditions (the ''cover-two standard''). In addition, LCH SA also has policies and procedures that establish monthly back testing to evaluate the performance of the CDSClear margin methodology and stress testing to ensure maintenance of sufficient financial resources to meet the cover-two standard. Finally, as noted above, LCH SA has policies and procedures that require an annual validation of its margin model by independent personnel that are qualified to perform such a validation. This validation must include a review of the parameters and assumptions underlying the model, as well as the reporting of the results of such model validation to risk management personnel.

Based on the above, the Commission finds that, as described in the application, LCH SA has both the capacity to ensure that LCH SA maintains the required financial resources, and policies and procedures reasonably designed to do so, as required by Exchange Act sections 17A(b)(3)(A) and 17A(b)(3)(F), as well as Rules 17Ad–22(b)(2), (b)(3), and (b)(4) thereunder.[159]

ii. Collateral Policy and Investment of Cash Collateral

As described in Section II.D.ii above, LCH SA maintains a collateral policy that requires it to accept cash (in Euros), foreign currency, and highly liquid debt and equity securities as collateral, with all collateral except Euros subject to a haircut to minimize LCH SA's exposure to market risk. With respect to cash collateral, LCH SA has in place an investment policy that requires LCH SA to invest or deposit assets received as collateral only with counterparties that meet certain minimum credit standards. LCH SA monitors its counterparties, in furtherance of ensuring that such counterparties will be able to meet their obligations to LCH SA with respect to such assets, and that LCH SA will have access to such assets when needed. In addition, LCH SA has policies and procedures that require it to invest its assets in highly liquid instruments backed by creditworthy issuers. The term of investment permitted may depend on the type of asset and creditworthiness of the issuer. For

[150] 15 U.S.C. 78q–1(b)(3)(A) and (F).

[151] 15 U.S.C. 78q–1(b)(3)(F).

[152] 17 CFR 240.17Ad–22(b)(2).

[153] 17 CFR 240.17Ad–22(b)(3).

[154] 17 CFR 240.17Ad–22(b)(4).

[155] 17 CFR 240.17Ad–22(d)(3).

[156] 15 U.S.C. 78q–1(b)(3)(F).

[157] 17 CFR 240.17Ad–22(d)(11).

[158] *See* LCH SA Form CA–1, Exhibit H–1 (LCH SA Audited Financial Statements for the Year Ended 31 December 2015), 18; *see also* CDSClear Rulebook, Section 4.2.5 and Exhibit E–6.2 (CDSClear CDS Clearing Procedures, Section 2: Margin and Price Alignment Interest).

[159] 15 U.S.C. 78q–1(b)(3)(A) and (F); 17 CFR 240.17Ad–22(b)(2), (3), and (4).

example, cash deposits and securities of issuers not explicitly guaranteed by the US, UK, or a European government are restricted to an overnight term. For these reasons, the Commission finds that LCH SA's policies and procedures, as described in the application, are reasonably designed to ensure that LCH SA holds assets in a manner that minimizes the risk of loss or of delay in their access, and invests in instruments with minimal credit, market and liquidity risks, as required by Exchange Act Sections 17A(b)(3)(A) and 17A(b)(3)(F), as well as Rule 17Ad–22(d)(3).[160]

iii. Default Management, Loss Allocation, and Recovery

As described in Section II.D.iii. above, LCH SA has rules, policies, and procedures regarding the management of losses resulting from a CDSClear member default. Specifically, LCH SA's rules, policies and procedures require LCH SA, upon the declaration of a CDSClear member's default, (i) to take action to hedge against market risk of the defaulting member's portfolio, (ii) to transfer customer positions to non-defaulting members, if the applicable provisions of LCH SA's rules are met, and (iii) to dispose of the defaulting member's portfolio through a competitive auction process. The Commission finds that LCH SA's rules allowing for the porting of customer positions are designed to safeguard securities and funds and protect investors, consistent with Section 17A(b)(3)(F) of the Act.[161] The hedging and disposition of the defaulting member's positions through default auction procedures further safeguards LCH SA's securities and funds by allowing LCH SA to limit the amount of losses that either LCH SA or its non-defaulting clearing members must bear as a result of the member's default.

This entire default management process must be completed within five business days. These policies and procedures provide for the use of financial resources in accordance with the CDSClear default waterfall, to cover losses associated with the member's default while LCH SA conducts the competitive auction process in order to dispose of the defaulting member's portfolio. The only financial resources or recovery tools available to cover losses resulting from a CDSClear member's default are those specified in the CDSClear default waterfall. Furthermore, to manage liquidity pressures associated with a member's default, LCH SA monitors and measures its liquidity resources and requirements daily. To continue meeting its obligations, LCH SA may use cash collateral, other collateral it is able to liquidate in a timely manner, or its own capital as an immediately available liquidity resource. LCH SA may also access central bank liquidity through the Banque de France, as well as other secured financing facilities that LCH SA maintains. The Commission finds that, taken together, these tools allow LCH SA to contain losses within the CDSClear service and manage liquidity pressures associated with a member's default, while continuing to meet its obligations, thereby allowing LCH SA to safeguard securities and funds and to continue to facilitate prompt and accurate clearance and settlement, in accordance with Section 17A(b)(3)(F) of the Act.[162] The Commission finds that these tools are designed to mitigate the risk of financial loss contagion and therefore are consistent with the public interest requirement under Section 17A(b)(3)(F).

Finally, the Commission notes that LCH SA's policies and procedures regarding its CDSClear default management process are available on its public Web site and can be reviewed by members and the general public alike. Based on the above, the Commission finds that LCH SA has established default procedures reasonably designed to ensure that it can take timely action to contain losses and liquidity pressures and to continue meeting its obligations in the event of a participant default, and to make key aspects of its default procedures publicly available, in accordance with the requirements of Rule 17Ad–22(d)(11), as well as the applicable requirements of Section 17A(b)(3)(F) of the Act.[163]

E. Operational Risk Management

1. Exchange Act Requirements

Section 17A(b)(3)(A) of the Act provides that a clearing agency shall not be registered unless the Commission determines that such clearing agency has the capacity to be able to facilitate prompt and accurate clearance and settlement and the safeguarding of securities and funds. In this regard, Rule 17Ad–22(d)(4) requires a registered clearing agency to establish, implement, maintain and enforce written policies and procedures reasonably designed to, as applicable, identify sources of operational risk and minimize them through the development of appropriate systems, controls, and procedures; implement systems that are reliable, resilient and secure, and have adequate, scalable capacity; and have business continuity plans that allow for timely recovery of operations and fulfillment of a clearing agency's obligations.[164]

2. Commission Findings

As described in Section II.E above, LCH SA has established written policies and procedures that address the self-assessment, monitoring, measuring, reporting, and mitigation of operational risks to LCH SA. LCH SA's operational risk framework assigns roles and responsibilities to the business departments, Operational Risk Department, and Audit Department for the identification, monitoring, reporting, mitigation, and oversight of operational risks. The Audit Committee and Risk Committee are assigned oversight responsibilities for specific aspects of LCH SA's internal controls and the implementation of LCH SA's operational risk management processes. Thus, LCH SA's policies and procedures provide for multiple lines of defense and layers of oversight over operational risk management.

In addition, LCH SA maintains written policies and procedures reasonably designed to ensure that LCH SA's systems are reliable, resilient and secure; and have business continuity plans that allow for timely recovery of operations and fulfillment of its operations. For example, LCH SA's business continuity policies provide for, among other things, regular threat assessments, operational and business continuity testing involving member participation, multiple systems and data centers at geographically dispersed locations, and the migration of data and functionality in the event of various types of business disruption.[165] The Commission believes that the business continuity management policies, along with the maintenance and use of redundant systems at multiple back-up sites, will provide LCH SA with the capacity to timely recover its operations and fulfill its obligations in the event of a disruption. Moreover, as described above, LCH SA also maintains an ongoing self-assessment policy to continually monitor and assess operational risk, such as security risk, and provide for the mitigation of such risk when it exceeds applicable

[160] 15 U.S.C. 78q–1(b)(3)(A) and (F); 17 CFR 240.17Ad–22(d)(3).

[161] 15 U.S.C. 78q–1(b)(3)(F).

[162] *Id.*

[163] 15 U.S.C. 78q–1(b)(3)(F); 17 CFR 240.17Ad–22(d)(11).

[164] 17 CFR 240.17Ad–22(d)(4).

[165] *See* LCH SA Form CA–1, Exhibit K–2 (LCH Group Business Continuity Management Policy); LCH SA Form CA–1, Exhibit E–6.7 (CDSClear CDS Clearing Procedures, Section 7: Business Continuity).

tolerances.[166] The Commission believes that the operational risk and business continuity testing required under LCH SA's rules, policies, and procedures will further assist LCH SA in identifying and minimizing sources of operational risk, as well as gain facility in responding to business disruption or disaster recovery scenarios. Additionally, as described above, the Commission believes that the information security policies and procedures adopted by LCH SA will assist LCH SA in ensuring that sensitive information is appropriately protected and that confidentiality of such information is maintained, that only authorized employees and other select entities are able to access and use such information, and that no such employees trade on this information for their personal accounts. Given the above, the Commission finds that LCH SA has established, implemented, and maintained operational risk management and business continuity policies that are reasonably designed to identify sources of operational risk and minimize them through appropriate systems, controls, and procedures; implement systems that are reliable, resilient and secure, and have adequate, scalable capacity; and allow for timely recovery of operations and fulfillment of LCH SA's obligations.

For the reasons above, the Commission finds that LCH SA's governance and operational risk policies and procedures are designed to meet the requirements of Section 17A(b)(3)(A) concerning the capacity to facilitate the prompt and accurate clearance and settlement of securities transactions and the safeguarding of securities and funds, as well as the operational risk requirements under Rule 17Ad–22(d)(4).

F. Fees, Dues, and Charges

1. Exchange Act Requirements

Sections 17A(b)(3)(D) and (E) of the Act require a clearing agency's rules to provide for the equitable allocation of reasonable dues, fees and other charges among its participants and prohibit the rules of a clearing agency from imposing any schedule of prices, or fixing rates or other fees for services rendered by its participants.[167] Section 17A(b)(3)(I) provides that the rules of a clearing agency may not impose any burden on competition not necessary or appropriate in furtherance of the purposes of Section 17A.[168]

2. Commission Findings

In connection with its CDSClear service, LCH SA charges transaction fees linked to products, which are generally usage-based, as well as annual membership fees, which apply equally to all CDSClear members. LCH SA also imposes annual account structure fees for individually segregated accounts and omnibus segregated accounts that are equally applicable to all CDSClear members based on usage.[169] The Commission finds that these fees apply equally to all members, that LCH SA does not impose any schedule of fees for services rendered by its participants and that these fees are not imposed in an attempt to burden competition. Accordingly, the Commission finds that LCH SA's CDSClear rules governing fees, dues, and charges are consistent with the requirements of Sections 17A(D), (E), and (I) of the Act.[170]

G. Prompt and Accurate Clearance and Settlement

1. Exchange Act Requirements

Section 17A(b)(3)(A) of the Act[171] provides that a clearing agency shall not be registered unless the Commission finds that the clearing agency is so organized and has the capacity to facilitate the prompt and accurate clearance and settlement of securities transactions and derivative agreements, contracts, and transactions for which it is responsible. Similarly, Exchange Act Section 17A(b)(3)(F) requires a clearing agency to have rules designed to promote these same goals.[172]

2. Commission Findings

The Commission finds that, based on LCH SA's rules, policies, and procedures described above pertaining to its CDSClear membership standards; capacity to enforce rules and discipline CDSClear members; governance, particularly in connection with financial and operational risk management responsibilities of the Audit and Risk Committees; financial resources; investment of cash collateral and liquidity risk management; and CDSClear default management loss allocation and recovery, taken together, LCH SA is so organized and has the capacity to facilitate the prompt and accurate clearance and settlement and has rules designed to promote these same goals, in accordance with Sections 17A(b)(3)(A) and 17A(b)(3)(F) of the Act.[173]

As a first line of defense, LCH SA's CDSClear membership standards seek to ensure that applicants will not be accepted if they lack the ability to meet obligations to LCH SA for operational or financial reasons. Similarly, LCH SA's policies and procedures that establish its authority to enforce its rules and discipline members are designed to minimize risks from existing members to LCH SA's ability to facilitate prompt and accurate clearance and settlement. LCH SA's governance structure, which creates multiple lines of oversight over specific responsibilities of—and interactions among—its business departments, control departments, Board-level committees, and ultimately Board of Directors, is designed to identify, minimize, mitigate, and oversee the management of operational and financial risks both external to and inherent in LCH SA. If a financial risk emerges in the form of a member default, for example, LCH SA's rules, policies, and procedures, as described in the application, contemplate the ability to cover losses consistent with the cover two standard using pre-funded resources. To the extent CDSClear pre-funded resources are insufficient, LCH SA may draw on assessment powers and loss allocation and recovery tools established in accordance with its rules, policies, and procedures, to continue meeting clearance and settlement obligations. In addition, LCH SA's CDSClear rules are designed to ensure that, during the default management process, which may last no longer than five business days, LCH SA may continue to offer CDSClear services only if its financial resources, including assessment powers and Variation Margin Haircutting, are sufficient to support a successful disposition of the defaulting member's portfolio through auction and meet LCH SA's daily settlement obligations.

Based on the foregoing, the Commission believes that LCH SA's rules, policies and procedures meet the requirements of Sections 17A(b)(3)(A) and 17A(b)(3)(F) of the Exchange Act.[174]

IV. Request for Exemptive Relief

In connection with its application for registration as a clearing agency, as described above, LCH SA has submitted a Request for Exemptive Relief from certain requirements of the Exchange

[166] *See, e.g.,* LCH SA Form CA–1, Ex. K–3 (LCH. Clearnet Group Information Security Strategy/Maturity Self-assessment tool); LCH Clearnet Group Operational Risk Policy—Operational Risk Management.

[167] 15 U.S.C. 78q–1(b)(3)(D) and (E).

[168] 15 U.S.C. 78q–1(b)(3)(I).

[169] *See* LCH SA Form CA–1, Exhibit Q (LCH SA Schedule of Prices, Rates or Fees Fixed by Registrant for Services Rendered by its Participants).

[170] 15 U.S.C. 78q–1(b)(3)(D), (E), and (I).

[171] 15 U.S.C. 78q–1(b)(3)(A).

[172] 15 U.S.C. 78q–1(b)(3)(F).

[173] 15 U.S.C. 78q–1(b)(3)(A) and (F).

[174] *Id.*

Act and the rules thereunder.[175] Section 36 of the Act authorizes the Commission to conditionally or unconditionally exempt any person, security, or transaction, or any class or classes of persons, securities, or transactions, from certain provisions of the Exchange Act or certain rules or regulations thereunder, to the extent that such exemption is necessary or appropriate in the public interest, and is consistent with the protection of investors.[176] After careful consideration, as further discussed below, the Commission concludes that the conditional exemptive relief requested by LCH SA is necessary or appropriate in the public interest, and is consistent with the protection of investors.

A. Exemptive Relief from Sections 5 and 6 of the Act

1. Background

Section 5 of the Act prohibits any broker, dealer, or exchange from using any facility of an exchange to effect any transaction in a security, or to report any such transaction, unless such exchange is registered as a national securities exchange.[177] Section 6 of the Act sets out the terms and conditions for registration of an exchange.[178] LCH SA has requested exemptive relief (i) from the requirements of Sections 5 and 6 of the Act with respect to its ''forced trade'' mechanism used in the calculation of settlement prices for open positions in cleared CDS; and (ii) for each of its CDSClear members that are brokers or dealers, from Section 5 of the Act with respect to their participation in the forced trade mechanism.[179] LCH SA represents that, as part of its clearing and risk management processes for cleared CDS transactions in its CDSClear services, including single-name CDS cleared by LCH SA (''Single-Name CDS''), it computes the end-of-day settlement price for each contract in which any of its members has a cleared position, based on off-market prices submitted by its clearing members, and uses those prices to establish a daily mark on which to base margin calculations. To promote the integrity of these price submissions, LCH SA employs a forced trade mechanism pursuant to which its members are required at certain times to execute CDS trades based on their price submissions.[180]

2. LCH SA's Representations

LCH SA acknowledges that, absent an exemption, LCH SA's forced trade mechanism would cause LCH SA to meet the criteria of Rule 3b–16 under the Act[181] and, as a result, would require LCH SA to register with the Commission as a national securities exchange under Sections 5 and 6 of the Act or obtain an appropriate an exemption therefrom. Additionally, any clearing member that is a broker or dealer would not be permitted to utilize LCH SA to effect any transaction in a security, or to report any such transaction, unless LCH SA were registered as a national securities exchange or had obtained an appropriate exemption.

3. Commission Findings

The Commission notes that it previously has granted the temporary, conditional exemptive relief that LCH SA has requested under Sections 5 and 6 of the Act to CDS clearing agencies ICE Clear Credit, ICE Clear Europe, and CME.[182] The Commission notes that LCH SA's procedures for calculating end-of-day settlement prices and LCH SA's forced trade mechanism are substantially similar to the other CDS clearing agencies and does not believe that any differences between LCH SA's forced trade mechanism and those of the other CDS clearing agencies warrant different treatment in the consideration of LCH SA's requested relief from the requirements of Sections 5 and 6 of the Act. In light of the risk management benefits of the forced trade mechanism in maintaining the integrity of the pricing process, the Commission finds it necessary or appropriate in the public interest and consistent with the protection of investors to grant a temporary conditional exemption to LCH SA from the requirements of Sections 5 and 6 of the Act, and to its CDSClear clearing members from the requirements of Section 5 of the Act, subject to the conditions described below. These exemptions are solely with respect to the forced trade mechanism used in connection with the calculation of settlement prices for cleared CDS. As with the exemptions granted to other CDS clearing agencies in the Commission's Temporary Exemptions Release, the exemptions from Section 5 and 6 applicable to LCH SA and to its clearing members that are brokers or dealers will remain in effect until the earliest compliance date set forth in any of the final rules regarding the registration of security-based swap execution facilities and will be subject to the following conditions:[183]

First, LCH SA shall report to the Commission the following information with respect to its calculation of settlement prices for Single-Name CDS within thirty (30) calendar days of the end of each quarter, and to electronically preserve such reports for a period of ten (10) years: (a) The total dollar volume of transactions executed during the quarter, broken down by reference entity; and (b) the total unit volume and/or notional amount executed during the quarter, broken down by reference entity. Reporting of this information will assist the Commission in carrying out its responsibility to supervise and regulate the securities markets.

Second, LCH SA shall establish and maintain adequate safeguards and procedures to protect clearing members' confidential trading information, including: (a) Limiting access to the confidential trading information of clearing members to those employees of LCH SA who are operating the systems or are responsible for their compliance with this exemption or any other applicable rules; and (b) establishing and maintaining standards controlling LCH SA employees who trade for their own accounts.[184] LCH SA shall establish and maintain adequate oversight procedures to ensure that the safeguards and procedures established pursuant to this condition are followed. This condition is designed to prevent any misuse of trading information that may be available to LCH SA in connection with the forced trade mechanism. This condition is expected to strengthen confidence in LCH SA's protections of confidential trading information, thus promoting participation.

Third, LCH SA shall directly or indirectly make available to the public on terms that are fair and reasonable and not unreasonably discriminatory: (a) All end-of-day settlement prices and any other prices with respect to Single-Name CDS that it may establish to calculate mark-to-market margin requirements for its clearing members;

[175] *See supra* note 8 and accompanying text.

[176] 15 U.S.C. 78mm.

[177] 15 U.S.C. 78e *et seq.*

[178] 15 U.S.C. 78f *et seq.*

[179] *See* Request for Exemptive Relief at 2.

[180] *See id.* at 3–4.

[181] 17 CFR 240.3b–16.

[182] *See* Order Granting Temporary Exemptions under the Securities Exchange Act of 1934 in Connection with the Pending Revision of the Definition of ''Security'' to Encompass Security-Based Swaps, and Request for Comment, Securities Exchange Act Rel. No. 34–64795 (Jul. 1, 2011), 76 FR 39927, 39934 (Jul. 7, 2011) (''Temporary Exemptions Release'').

[183] *See id.* at 39934.

[184] *See supra* notes 70 and 71. As discussed above LCH SA currently has policies and procedures in place that control access to confidential information, including confidential information relating to LCH SA clearing members, and that control the personal trading of LCH SA employees.

and (b) any other pricing or valuation information with respect to Single-Name CDS as is published or distributed by LCH SA. This condition is designed to make relevant pricing data available to the public on terms that are fair and reasonable and not unreasonably discriminatory.

Finally, LCH SA shall implement policies and procedures designed to ensure compliance with these terms and conditions relating to the requested exemptive relief from Sections 5 and 6 of the Act, and shall conduct periodic internal reviews related to its compliance program.

B. Exemptive Relief from Section 19(b) of the Act and Rule 19b–4 Thereunder

1. Background

Pursuant to Section 19(b)(1) of the Exchange Act, self-regulatory organizations (''SROs''), including registered clearing agencies, are required to file with the Commission copies of any proposed rule,[185] or any addition to or deletion from their existing rules (a ''proposed rule change'').[186] LCH SA has requested exemptive relief from the requirements of Section 19(b) of the Act and Rule 19b–4 thereunder with respect to filing certain proposed rule changes that (i) primarily affect its clearing operations with respect to its Non-U.S. Business, and (ii) do not significantly affect any CDSClear operations or any rights or obligations of LCH SA with respect to the CDSClear services or persons using such services (''Non-U.S. Business Rule Changes'').[187] As a condition of the requested relief, LCH SA has proposed to provide notice of its Non-U.S. Business Rule Changes to Commission staff in lieu of filing such changes under Section 19(b) and Rule 19b–4 once such changes are duly approved by its national competent authorities.

As described above, LCH SA represents that its Non-U.S. Business is comprised of clearing services offered completely offshore entirely to non-U.S. persons outside of the United States that would not otherwise implicate the Commission's registration requirements under the Act, nor those of the CFTC.[188]

LCH SA also represents that its CDSClear service, from which it intends to offer clearing services for Single-Name CDS to U.S. persons, will be maintained separate and apart from its Non-U.S. Business. Specifically, LCH SA's Non-U.S. Business has: (1) Separate rules, including policies and procedures; (2) distinct financial safeguards and default arrangements; and (3) significant numbers of exclusively dedicated personnel and information technology services. LCH SA maintains that such separation will ensure that the rights and obligations of a U.S. person participating in the CDSClear services would not be affected by a member default or operational risk occurring in the Non-U.S. Business. In other words, LCH SA represents that ''there is no possibility of risk contagion or mutualization . . . [to U.S. persons participating in CDSClear] in the event of a member default in the other services provided by the Non-U.S. Business.''[189]

LCH SA nonetheless acknowledges that CDSClear is not totally separated from the rest of its business. Among other things, LCH SA's overall governance framework applies equally to CDSClear and the other services provided by the Non-U.S. Business.[190] Similarly, LCH SA's risk management framework requires certain functions to be shared across all of its various business lines in order for risks to be adequately managed while maintaining an appropriate segregation of duties. LCH SA represents that CDSClear and the Non-U.S. Business jointly rely on certain resources (collectively, ''Shared Support Functions''), which include second-line risk management, treasury/liquidity management, legal and compliance, systems safeguards/security/business continuity, internal audit, finance and human resources.

In recognition of CDSClear's relationship to its Non-U.S. Business, LCH SA does not seek an exemption from filing all rule changes pertaining to its Non-U.S. Business. Specifically, LCH SA does not seek exemption from filing rule changes which significantly affect any CDSClear operations or any rights or obligations of LCH SA with respect to the CDSClear services or persons using such services. Thus, even if LCH SA's request for exemptive relief were granted, LCH SA would nonetheless be required to file, pursuant to Section 19(b) and Rule 19b–4, rule changes that do not explicitly pertain to the CDSClear services, but have a significant impact on the CDSClear operations, such as proposed rule changes relating to Shared Support Functions.

2. LCH SA's Representations

LCH SA contends that the exemptive relief it has proposed is consistent with Section 36 of the Act because such relief is necessary or appropriate in the public interest, and is consistent with the protection of investors. In particular, LCH SA argues that relief is necessary or appropriate in the public interest because applying rule filing requirements under Section 19(b) of the Act and Rule 19b–4 thereunder would not advance the Commission's regulatory interests, as applied to its Non-U.S. Business Rule Changes. Additionally, in light of the separation between CDSClear and its Non-U.S. Business, LCH SA maintains that this exemption is consistent with the protection of investors because it would not compromise the Commission's oversight responsibility with respect to LCH SA as a whole.

LCH SA believes that the existing rule filing framework, as applied to its Non-U.S. Business Rule Changes, is both burdensome and would not advance the Commission's regulatory interests. In particular, LCH SA asserts that it is registered with the CFTC for the purposes of clearing index CDS (which are swaps) and with the Commission for the purpose of clearing single-name CDS (which are security-based swaps). LCH SA notes that clearing agencies that are also registered with the CFTC as a DCO (''Dually-Registered Clearing Agencies'') are permitted to rely on Rule 19b–

[185] *See* 15 U.S.C. 78c(a)(27) (defining ''rules of a clearing agency'') and (28) (defining ''rules of a self-regulatory organization'').

[186] *See* 15 U.S.C. 78s(b)(1) and 17 CFR 240.19b–4(a)(4) (defining ''proposed rule change'').

[187] *See* Request for Exemptive Relief at 2–3.

[188] *See* Request for Exemptive Relief at 5–12. As noted above, LCH SA currently provides clearing services for equities, exchange-traded futures and options, as well as fixed income instruments and commodity products traded on European exchanges and multilateral trading facilities in which no U.S. persons participate as clearing members, *i.e.* its Non-U.S. Businesses.

Specifically, LCH SA's Non-U.S. Business currently includes: (i) ''EquityClear'', which refers to clearing services in respect of equities, debt instruments and futures contracts traded on the Euronext, Equiduct, and Bourse de Luxembourg trading platforms; (ii) ''CommodityClear'', which refers to clearing services in respect of futures and options for agricultural and energy products on Euronext; and (iii) ''RepoClear'', which refers to clearing services in respect of repo transactions on French, Italian and Spanish government debt as well as corporate debt, and also includes the Euro GC+ clearing service. LCH SA may expand its Non-U.S. Business to include other new services. At all times, the Non-U.S. Business does not and will not have any U.S. clearing members or extend membership to any U.S. persons. *See* LCH SA Form CA–1, Exhibit C; Request for Exemptive Relief at 6–8 & n.22.

[189] Request for Exemptive Relief at 11.

[190] LCH SA's Board of Directors maintains overall responsibility for risk management of all clearing services; subcommittees of the Board, including the Audit Committee, Risk Committee and Remuneration Committee, exercise their functions across all clearing services. In addition, LCH SA maintains an executive committee, known as the ''Local Management Committee'', which has overall responsibility for LCH SA's risk function. The LCH Group has also established certain risk committees with joint oversight responsibility across LCH SA, LCH Limited and LCH LLC, including the Executive Risk Committee, Market Risk Management Committee, and Credit Risk Management Committee.

4(f)(4)(ii) to file certain proposed rule changes under Section 19(b)(3)(A) of the Act.[191] That rule is designed to eliminate unnecessary delays that could arise from the differences between the Commission's rule filing process and the CFTC's self-certification process for rule changes primarily affecting clearing with respect to swaps, futures, options on futures and forwards regulated by the CFTC that also do not significantly affect any securities clearing operations or the rights or obligations of the clearing agency with respect to securities clearing or persons using the securities-clearing service.[192]

Nonetheless, LCH SA maintains that this framework does not adequately consider its status as a foreign clearing agency registered with—and subject to supervision by—its own national competent authority. In light of the significant separation it maintains between CDSClear and its Non-U.S. Business, LCH SA seeks an exemption from filing its Non-U.S. Business Rule Changes. LCH SA asserts that its Non-U.S. Business would not otherwise require it to register with the Commission as a clearing agency but for the fact that LCH SA intends to expand its CDSClear business to offer clearing services for Single-Name CDS to U.S. persons.[193] Thus, LCH SA argues that because CDSClear participants are ring-fenced from risks associated with its Non-U.S. Business and the Commission would not regulate its Non-U.S. Business standing alone, requiring the filing of Non-U.S. Business Rule Changes ''would not serve the SEC's regulatory interest.'' [194]

In addition, LCH SA maintains that it has tailored its exemption request to ensure that the Commission's regulatory interests in overseeing LCH SA on an entity-wide basis are not compromised. As described above, LCH SA notes that rule changes to its Non-U.S. Business clearing which significantly affect any CDSClear operations or any rights or obligations of LCH SA with respect to the CDSClear services or persons using such services will nonetheless be filed with the Commission pursuant to Section 19(b) of the Exchange Act and Rule 19b–4. In addition, as a condition of the exemptive relief it seeks, LCH SA will provide Commission staff notice of and copies of all Non-U.S. Business Rule Changes once such changes are duly approved by its national competent authorities in lieu of filing such changes under Section 19(b) and Rule 19b–4. Taken as whole, LCH SA maintains that its exemptive request does not compromise the Commission's historical approach of overseeing clearing agencies on an entity-wide basis. Accordingly, LCH SA maintains that an exemption from filing its Non-U.S. Business Rule Changes with the Commission is necessary or appropriate in the public interest, and is consistent with the protection of investors.

3. Commission Findings

The Commission notes that its oversight responsibility over registered clearing agencies extends to the clearing agency as a whole and is entity-based, rather than product-based. [195] Therefore, absent exemptive or other relief, a registered clearing agency is required to comply with all applicable requirements under the Exchange Act, including filing all proposed rule changes with the Commission. The Commission has previously explained that a clearing agency's failure to submit proposed rule changes would prevent the Commission from discharging its statutory responsibilities.[196] After careful consideration of the specific facts and circumstances of LCH's request for exemptive relief, and as further described below, the Commission concludes that granting to LCH SA a conditional exemption from Section 19(b) of the Act and Rule 19b–4 thereunder in connection with LCH SA's Non-U.S. Business Rule Changes is necessary or appropriate in the public interest, and is consistent with the protection of investors, subject to the condition that LCH SA will provide notice of such Non-U.S. Business Rule Changes to the Commission staff within three business days of being duly approved by LCH SA's national competent authorities.

First, the Commission finds that requiring LCH SA to file Non-U.S. Business Rule Changes would not advance the Commission's regulatory interest in overseeing registered clearing agencies. In the Dually Registered Clearing Agency Release, the Commission explained that a proposed rule change ''primarily affects'' a clearing agency's clearing operation with respect to products that are not securities ''when it is targeted to matters related only to the clearing of those products.'' [197] Therefore, for a proposed rule change to primarily affect LCH SA's clearing operations with respect to its Non-U.S. Business, it must be targeted to matters related only to the clearing of the products offered by the services provided in the Non-U.S. Business. As such, the Non-U.S. Business Rule Changes would be targeted to matters concerning LCH SA's offshore business in which U.S. persons do not participate. Further, LCH SA has represented that its Non-U.S. Business will not extend membership to any U.S. persons.[198] In addition, as described above, LCH has represented that it has a structure that essentially ring-fences its CDSClear business in which U.S. persons will participate from its Non-U.S. Businesses.[199] Therefore, U.S. persons participating in CDSClear will not be exposed to risks resulting from LCH SA's Non-U.S. Business Rule Changes. Taken together, the Commission concludes that reviewing LCH SA's Non-U.S. Business Rule Changes for purposes of approval or disapproval would not materially advance its regulatory interests. [200]

Second, the Commission finds that allowing LCH not to file these rule changes would not compromise the Commission's oversight responsibilities over registered clearing agencies on an entity basis. [201] As stated in the Dually Registered Clearing Agency Release, the Commission would not consider rules of general applicability that would apply equally to CDSClear operations and Non-U.S. Business to be ''primarily affecting'' LCH SA's clearing operations with respect to the Non-U.S. Business.[202] Therefore, this exemptive relief would not relieve LCH SA from the obligation of filing rules of general

[191] 17 CFR 240.19b–4(f)(4)(ii).

[192] Amendment to Rule Filing Requirements for Dually-Registered Clearing Agencies, 78 FR 21046, 21048 (April 9, 2013), hereinafter referred to as ''Dually Registered Clearing Agency Release'').

[193] Request for Exemptive Relief at 6 & n.21.

[194] Request for Exemptive Relief at 11–12.

[195] The Commission has explained that its oversight responsibility over registered clearing agencies ''extends to the clearing agency as a whole and is entity based, rather than product-based.'' Dually Registered Clearing Agency Release, 78 FR at 21050 & n.52.

[196] *See id.*

[197] *See id.*

[198] Request for Exemptive Relief at 6, n.22.

[199] *Id.* at 11 & n.34. LCH SA acknowledges that U.S. persons remain at risk from a default in treasury management, and for that reason rule changes involving that function, along with other Shared Support Functions, are not subject to the exemption. *Id.*

[200] *See* Securities Exchange Act Release Nos. 34–43775 (Dec. 28, 2000), 66 FR 819 (Jan. 4, 2001) (order exempting Euroclear Bank from clearing agency registration) and 34–39643 (Feb. 18, 1998), 63 FR 8232 (Feb. 18, 1998) (order exempting Euroclear Bank's predecessor, Morgan Guaranty Trust Company, as operator of the Euroclear system, from clearing agency registration); Securities Exchange Act Release No. 34–38328 (Feb. 24, 1997), 62 FR 9225 (Feb. 28, 1997) (order exempting Clearstream Bank, formerly Cedel Bank, from clearing agency registration); and Exemption of Certain Foreign Brokers or Dealers, Proposed Rule, 73 FR 39182, 39198 (July 8, 2008).

[201] *See, e.g.,* Dually Registered Clearing Agency Release at 21050. (''The Commission's oversight responsibility over [registered clearing agencies] extends to the clearing agency as a whole and is entity-based, rather than product based'').

[202] *See id.*

applicability in accordance with Section 19(b). For example, to the extent a proposed rule change regarding the Shared Support Functions constitutes a rule of general applicability that would apply equally to CDSClear operations and the Non-U.S. Business, it would not be considered to primarily affect LCH SA's Non-U.S. Business, and LCH SA would be required to file such proposed rule change for the Commission's review in accordance with Section 19(b).[203]

Similarly, consistent with the Dually Registered Clearing Agency Release, changes to general provisions in the constitution, articles, or bylaws of LCH SA that address the operations of the entire clearing agency would also affect CDSClear.[204] Therefore, LCH SA would be required to file any proposed rule changes to its constitution, articles, bylaws, or other rule changes that address its operations on an entity-wide basis, with the Commission in accordance with Section 19(b) and Rule 19b–4.

Furthermore, Non-U.S. Business Rule Changes would not include proposed rule changes that would ''significantly affect'' LCH SA's CDSClear Services. As the Commission stated in the Dually Registered Clearing Agency Release, a proposed rule change may significantly affect securities clearing operations, ''even in circumstances when such effects may be indirect.'' [205] Therefore, LCH SA would be required to file a proposed rule change that significantly affects its CDSClear operations with the Commission, even in circumstances where the effects of such proposed rule change on the CDSClear operations are indirect.

Based on the above, the Commission believes that granting LCH SA exemptive relief from the rule filing requirement with respect to the Non-U.S. Business Rule Changes is necessary or appropriate in the public interest, and consistent with the protection of investors, because doing so would preserve the Commission's regulatory interest in protecting the rights and obligations of U.S. persons participating in the CDSClear services and facilitate LCH SA's operational, risk management, and other changes pertaining to the Non-U.S. Business as effected by Non-U.S. Business Rule Changes, without compromising the Commission's oversight of LCH SA on an entity basis.

To monitor LCH SA's implementation of the exemptive relief, a condition of the exemptive relief is that LCH SA provide notice to Commission staff of its Non-U.S. Business Rule Changes within three business days once duly approved by LCH SA's national competent authorities. This requirement will provide the Commission with the ability to review LCH SA's determination of what constitutes Non-U.S. Business Rule Changes and to ensure that such determination is consistent with the scope of this exemptive relief such that the exemptive relief does not undermine the Commission's oversight over LCH SA under the Exchange Act.

C. Exemptive Relief From Rules 17Ad–22(c)(2) and 17Ad–22(c)(2)(iii)

LCH SA requests exemptive relief from the requirements of the introductory paragraph of Rule 17Ad–22(c)(2) and from Rule 17Ad–22(c)(2)(iii) with respect to its financial statements for fiscal years 2014 and 2015.[206] The introductory paragraph of Rule 17Ad–22(c)(2) requires that, within 60 days after the end of a clearing agency's fiscal year, the clearing agency must post its annual audited financial statements to its Web site.[207] Rule 17Ad–22(c)(2)(iii) also requires that financial statements for the past two years be audited in accordance with the standards of the Public Company Accounting Oversight Board (''PCAOB'') by a registered public accounting firm that is qualified and independent in accordance with 17 CFR 210.2–01 (the ''PCAOB Standards'').[208]

1. Background

As a factual matter, LCH SA represents that pursuant to the listing rules to which its indirect parent company LSEG is subject, LCH SA is not permitted to publish its own financial statements prior to the publication of LSEG's financial statements.[209] Given the scope of LSEG's business activities, LCH SA represents that it is ''not possible'' for LSEG to publish its financial statements within 60 days of the end of its fiscal year, nor would LCH SA have control over when such financial statements ultimately would be published.[210] LCH SA has requested instead that it post such annual audited financial statements no later than the first quarter following its fiscal year-end.

In addition, LCH SA represents that it currently prepares its financial statements in accordance with International Financial Reporting Standards (''IFRS''), and its financial statements are audited in accordance with International Standards on Auditing (''ISA''). Additionally, LCH SA states that, under French law, it is required to maintain two statutory auditing firms that jointly sign the annual audited accounts.[211] LCH SA represents that it has made arrangements to ensure that, beginning in 2016, its annual financial statements will be audited in accordance with Public Company Accounting Oversight Board (''PCAOB'') standards and will be signed by auditors who meet the relevant PCAOB qualifications.[212]

However, absent exemptive relief, upon registration with the Commission in 2016, LCH SA would be required to have its 2014 and 2015 annual financial statements audited in accordance with PCAOB standards. LCH SA represents that its 2014 and 2015 financial records would need to be re-analyzed (including reviewing past judgments regarding accounting figures), and that re-opening its audit files in such a manner would present practical and potentially legal challenges. In addition, compliance with Rule 17Ad–22(c)(2)(iii) prior to the end of the calendar year would impose material burdens on LCH SA, its staff and auditors.[213] LCH SA states that such challenges would be further exacerbated if the relief requested were to be granted only with respect to LCH SA's 2014 financial statements, as auditing its 2015 financial statements in isolation would cause auditors to use unaudited 2014 figures in their auditing report for the 2015 financial statements.[214]

2. LCH SA's Representations

LCH SA argues that its requests for relief from Rules 17Ad–22(c)(2) and 17Ad–22(c)(2)(iii) are necessary or appropriate in the public interest, and consistent with the protection of investors in accordance with Section 36 of the Act.[215] LCH SA maintains that it cannot comply with the requirement of Rule 17Ad–22(c)(2) [216] that audited financial statements be published within 60 days of its fiscal year-end because UK Listing Rules forbid publication of LCH SA's annual

[203] This is consistent with the Commission's approach taken in the Dually Registered Clearing Agency Release, where the Commission stated that ''rules of general applicability that would apply equally to securities clearing operations, including security-based swaps, would not be considered to primarily affect a Registered Clearing Agency's non-securities clearing operations.'' *See id.*

[204] *Id.*

[205] *Id.; see also id.* at n.50.

[206] *See* Request for Exemptive Relief at 4.

[207] 17 CFR 240.17Ad–22(c)(2).

[208] 17 CFR 240.17Ad–22(c)(2)(iii).

[209] *See* Request for Exemptive Relief at 15.

[210] *Id.*

[211] *See* Request for Exemptive Relief at 14.

[212] *Id.* at 13.

[213] *Id.* at 14.

[214] *Id.*

[215] 17 CFR 240.17Ad–22(c)(2) and 17 CFR 240.17Ad–22(c)(2)(iii); 15 U.S.C. 78mm.

[216] 17 CFR 240.17Ad–22(c)(2).

financial statements before those of its indirect parent, LSEG, over which LCH SA has limited control. Moreover, LCH SA contends that not only does it have limited control over when LSEG publishes its audited annual financial statements, LSEG is not able to publish its annual audited financial statements within the timeframe required under Rule 17Ad–22(c).[217] Thus, absent exemptive relief, LCH SA could not comply with this requirement.

With respect to Rule 17Ad–22(c)(2)(iii),[218] LCH SA argues that temporary exemptive relief is warranted as LCH SA has already committed to comply with Rule 17Ad–22(c)(2)(iii) on a prospective basis and it asserts that retroactive compliance with this provision raises significant practical—and potentially legal—challenges stemming from reanalyzing prior financial records and reopening the work of prior auditors. Moreover, LCH SA maintains that a PCAOB-compliant audit for 2016 necessitates *de facto* compliance for 2015 to ensure that the 2016 audit begins with an accurate 2015 closing balance.

3. Commission Findings

The Commission concludes that LCH SA's requests for exemptions from Rule 17Ad–22(c) and Rule 17Ad–22(c)(2)(iii)[219] are necessary or appropriate in the public interest and consistent with the protection of investors.

With respect to LCH SA's request for an exemption from Rule 17Ad–22(c)(2),[220] the Commission recognizes the legal and practical necessity that LSEG, as the ultimate parent company, publish its financial statements prior to LCH SA, and the inability of LCH SA as a subsidiary to change when LSEG can publish its financial statements. Thus, LCH SA would not be able to comply with the requirements of Rule 17Ad–22(c)(2),[221] and would not be able to register as a clearing agency with the Commission, absent the requested exemptive relief. The Commission believes that a delay of 31 days in the publication of the LCH SA's annual audited financial statements, were LCH SA to post its annual audited financial statements no later than the end of the first quarter following its year-end, would not have a material or meaningful impact on investor protection. Accordingly, the Commission finds it necessary or appropriate, and consistent with the protection of investors, to grant LCH SA exemptive relief from the requirement in Rule 17Ad–22(c)(2)[222] that a clearing agency post its annual audited financial statements within sixty days following the end of its fiscal year, so long as LCH SA publishes such audited financial statements within one quarter of the end of its fiscal year.

Similarly, with respect to LCH SA's request for relief from Rule 17Ad–22(c)(2)(iii),[223] the Commission notes that the financial statements for which LCH SA requests relief from the PCAOB audit standards cover 2014 and 2015, years that do not overlap with any time during which LCH SA would be registered with the Commission. During 2014, and 2015, LCH SA performed no clearing services for U.S. clearing members. The Commission also notes that these financial statements were audited, albeit under an alternative, internationally recognized auditing standard. Moreover, from 2016 onwards, the timeframe that would overlap with LCH SA's registration as a clearing agency, LCH SA's financial statements would be audited in accordance with PCAOB standards as required under Rule 17Ad–22(c)(2)(iii).[224] Since LCH SA does not anticipate onboarding U.S. Clearing Members to CDSClear until 2017, those members would have a reasonably clear view of LCH SA's finances at the time they become members of LCH SA. Based on the above and on LCH SA's representation that its annual audited financial statements from fiscal year 2016 onward will be audited in accordance with the requirements of 17Ad–22(c)(2)(iii),[225] the Commission finds that it is necessary or appropriate in the public interest, and is consistent with the protection of investors, to grant LCH SA's requested relief from the requirements of Rule 17Ad–22(c)(2)(iii)[226] to have annual financial statements for the past two years posted on its Web site that are audited in accordance with PCAOB standards, with respect to LCH SA's 2014 and 2015 annual audited financial statements.

D. Exemptive Relief From Rule 17a–22

LCH SA also has requested exemptive relief from Exchange Act Rule 17a–22,[227] which provides, in relevant part, that within ten days after making available certain materials such as manuals, notices, circulars, and bulletins to its participants or other entities with whom it has a significant relationship, such as transfer agents (''Rule 17a–22 Materials''), a registered clearing agency shall file three copies of such materials with the Commission. LCH SA requests exemptive relief from the requirement to file Rule 17a–22 materials where such materials (i) primarily affect LCH SA's clearing operations with respect to the Non-U.S. Business lines, and (ii) do not significantly affect any CDSClear operations or any rights or obligations of LCH SA with respect to its CDSClear services or persons using the CDSClear services.[228] Additionally, LCH SA requests relief from the requirement of Rule 17a–22 to file physical copies of Rule 17a–22 Materials primarily concerning its CDSClear services.[229] LCH SA requests instead that it be permitted to provide the Commission with electronic submissions for Rule 17a–22 Materials with respect to CDSClear services.[230]

1. LCH SA's Representations

LCH SA states that its rationale for requesting exemptive relief from Rule 17a–22 is essentially the same as the rationale used to support its request for exemptive relief from Section 19(b) of the Exchange Act and Rule 19b–4 thereunder, as described above.[231] Specifically, LCH SA believes that filing physical copies of Rule 17a–22 materials with the Commission would not advance the Commission's regulatory interests as applied to any 17a–22 Materials related to its Non-U.S. Business, and that in light of the separation between CDSClear and its Non-U.S. Business such an exemption is consistent with the protection of investors because it would not compromise the Commission's oversight responsibility with respect to LCH SA as a whole.[232]

2. Commission Findings

Consistent with the Commission's rationale above granting LCH SA's request for relief from Section 19(b) of the Act and Rule 19b–4 thereunder with respect to LCH SA's Non-U.S. Business Rule Changes,[233] the Commission finds it is necessary or appropriate in the public interest, and consistent with protection of investors, to grant LCH

[217] *Id.*

[218] 17 CFR 240.17Ad–22(c)(2)(iii).

[219] 17 CFR 240.17Ad–22(c)(2) and 17 CFR 240.17Ad–22(c)(2)(iii).

[220] 17 CFR 240.17Ad–22(c)(2).

[221] 17 CFR 240.17Ad–22(c)(2).

[222] *Id.*

[223] 17 CFR 240.17Ad–22(c)(2)(iii).

[224] *Id.*

[225] *Id.*

[226] *Id.*

[227] 17 CFR 240.17a–22.

[228] *See* Request for Exemptive Relief at 15–16.

[229] 17 CFR 240.17a–22.

[230] *Id.*

[231] *See* Request for Exemptive Relief at 15.

[232] *See* Request for Exemptive Relief at 8–13; *see also supra* Section IV.B.2.

[233] *See supra* Section IV.B.3.

SA's request for relief from Rule 17a–22 [234] with respect to filing with the Commission Rule 17a–22 Materials pertaining to LCH SA's Non-U.S. Business. The Commission also believes that granting LCH SA's request for exemptive relief from filing physical copies of Rule 17a–22 Materials pertaining to the CDSClear business is necessary or appropriate in the public interest and consistent with the protection of investors. As a condition to such relief, LCH SA would file Rule 17a–22 Materials pertaining to the CDSClear business via email rather than in hard copy.

Allowing LCH SA to satisfy its applicable filing obligations under Rule 17a–22 in this manner will expedite the filing process and allow LCH SA to minimize costs arising from international mail delivery service. The Commission also believes the exemptive relief should have no impact on the Commission's ability to examine or otherwise supervise CDSClear operations because LCH SA's obligation to file materials relating to CDSClear operations or activities not falling within the definition of Non-U.S. Business would still apply.

V. Conclusion

For the reasons discussed above, the Commission finds that LCH SA meets the requirements for registration as a clearing agency, including those standards set forth under Section 17A of the Act and the rules and regulations thereunder.

Further, for the reasons discussed above, the Commission finds that the exemptions provided in this Order are necessary or appropriate in the public interest, and are consistent with the protection of investors.

It is hereby ordered that the application for registration as a clearing agency filed by LCH SA (File No. 600–36) pursuant to Sections 17A(b) and 19(a)(1) of the Act be, and hereby is, APPROVED.

It is further ordered, pursuant to Section 36 of the Act, based on the representations and facts presented in LCH SA's Request for Exemptive Relief, that LCH SA is exempt from the requirements of Sections 5 and 6 of the Act, and LCH SA's CDSClear clearing members that are brokers or dealers are exempt from the requirements of Section 5, solely with respect to the ''forced trade'' mechanism used in connection with the calculation of settlement prices for Single-Name CDS, and until the earliest compliance date set forth in any final rules regarding the registration of security-based swap execution facilities, subject to the following conditions:

(a) LCH SA shall report to the Commission the following information with respect to its calculation of settlement prices for Single-Name CDS within thirty (30) calendar days of the end of each calendar quarter and electronically preserve such reports during a period of ten (10) years:

(1) The total volume of transactions executed during the quarter, broken down by reference entity, presented in Euros, and converted into US Dollars;

(2) The total unit volume and/or notional amount executed during the quarter, broken down by reference entity;

(b) LCH SA shall establish and maintain adequate safeguards and procedures to protect its BD–FCM Clearing Members' confidential trading information, including:

(1) limiting access to the confidential trading information of members to LCH SA employees who operate the system or who are responsible for its compliance with this exemptive relief and any other applicable rules;

(2) establishing and maintaining standards controlling LCH SA employees that trade for their own account;

(c) LCH SA shall establish and maintain adequate oversight procedures to ensure that the safeguards and procedures established pursuant to (b) are followed;

(d) LCH SA shall directly or indirectly make available to the public on terms that are fair and reasonable and not unreasonably discriminatory:

(1) All end-of-day settlement prices and any other prices with respect to Single-Name CDS that it may establish to calculate mark-to-market margin requirements for its clearing members; and

(2) any other pricing or valuation information with respect to Single-Name CDS as is published or distributed by LCH SA.

(e) LCH SA shall implement policies and procedures designed to ensure compliance with these terms and conditions, and to conduct periodic internal reviews related to its compliance program.

It is further ordered, pursuant to Section 36 of the Act, that LCH SA, based on the representations and facts presented in its Request for Exemptive Relief, is exempt from the requirements of Section 19(b) of the Act and Rule 19b–4 thereunder to file proposed rule changes with respect to its Non-U.S. Business, *i.e.* proposed rule changes that (i) primarily affect LCH SA's clearing operations with respect to the Non-U.S. Business and (ii) do not significantly affect any CDSClear operations or any rights or obligations of LCH SA with respect to the CDSClear services or persons using the CDSClear services, subject to the following conditions:

(a) LCH SA shall provide notice to Commission staff of its Non-U.S. Business Rule Changes within three business days of their being duly approved by the national competent authorities.

It is further ordered, pursuant to Section 36 of the Act, that LCH SA, based on the representations and facts presented in its Request for Exemptive Relief, is exempt from the requirement of Rule 17Ad–22(c)(2) that a clearing agency, within 60 days after the end of its fiscal year, must post its annual audited financial statements for the past two years to its Web site, subject to the following condition:

(a) LCH SA shall post its annual audited financial statements for the past two years to its Web site no later than the end of the first quarter following LCH SA's fiscal year-end.

It is further ordered, pursuant to Section 36 of the Act, that LCH SA, based on the representations and facts presented in its Request for Exemptive Relief, is exempt from the requirement of Rules 17Ad–22(c)(2)(iii) that a clearing agency's annual audited financial statements must be audited in accordance with the standards of the PCAOB by a registered public accounting firm that is qualified and independent in accordance with 17 CFR 201.1–01 with respect to its annual audited financial statements for its fiscal years 2014 and 2015, subject to the following conditions:

(a) For the calendar years 2014 and 2015, LCH SA's annual audited financial statements shall be prepared in accordance with IFRS and audited in compliance with ISA rather than the PCAOB requirement set out in Rule 17Ad–22(c), with the exception that the closing balance of LCH SA's 2015 financial statements shall be audited in accordance with PCAOB standards; and

(b) For calendar year 2016 and onwards, LCH SA's annual financial statements shall be prepared in accordance with IFRS and audited in accordance with PCAOB standards and shall be signed by auditors that meet the relevant PCAOB qualifications.

It is further ordered, pursuant to Section 36 of the Act, that LCH SA, based on the representations and facts presented in its Request for Exemptive Relief, is exempt from the requirements of Rule 17a–22 under the Act, to file certain materials such as manuals,

[234] 17 CFR 240.17a–22.

notices, circulars, and bulletins, as more fully described in Rule 17a–22, in connection with its Non-U.S. Business, that (i) primarily affect LCH SA's clearing operations with respect to the Non-U.S. Business and (ii) do not significantly affect any CDSClear operations or any rights or obligations of LCH SA with respect to the CDSClear services or persons using the CDSClear services.

It is further ordered, pursuant to Section 36 of the Act, that LCH SA, based on the representations and facts presented in its Request for Exemptive Relief, is exempt from the requirements of Rule 17a–22 under the Act, to file with the Commission three copies of materials such as manuals, notices, circulars, and bulletins, as more fully described in Rule 17a–22, within ten days of making such materials available to its participants or other persons as more fully described in Rule 17a–22, subject to the following conditions:

(a) LCH SA shall file such materials in electronic format with the Commission within ten (10) calendar days after issuing or making such materials available to its participants or to other entities with whom it has a significant relationship as applicable, except for materials that (i) primarily affect LCH SA's clearing operations with respect to the Non-U.S. Business and (ii) do not significantly affect any CDSClear operations or any rights or obligations of LCH SA with respect to the CDSClear services or persons using the CDSClear services, which materials as ordered above shall be exempt from the filing requirements of Rule 17a–22.

This exemptive relief is subject to modification or revocation at any time the Commission determines that such action is necessary or appropriate in furtherance of the purposes of the Exchange Act. This exemption is based on the facts presented and the representations made in the Request for Exemptive Relief. Any different facts or representations may require a different response.

By the Commission.

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31940 Filed 1–4–17; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–79711; File No. SR–C2–2016–025]

Self-Regulatory Organizations; C2 Options Exchange, Incorporated; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to Fees for C2 Real-Time Data Feeds

December 29, 2016.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (the ''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on December 19, 2016, C2 Options Exchange, Incorporated (the ''Exchange'' or ''C2'') filed with the Securities and Exchange Commission (the ''Commission'') the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of the Substance of the Proposed Rule Change

C2 Options Exchange, Incorporated (the ''Exchange'' or ''C2'') proposes to amend fees for certain C2 real-time data feeds. The text of the proposed rule change is available on the Exchange's Web site (*http://www.c2exchange.com/Legal/*), at the Exchange's Office of the Secretary, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The purpose of the proposed rule change is to amend the Data Fee for the BBO and Book Depth Data Feeds and user fees for the Complex Order Book (''COB'') Data Feed. These data feeds are made available by C2's affiliate Market Data Express, LLC (''MDX''). The Exchange proposes to make the following fee changes effective January 1, 2017.

Data Feeds

BBO Data Feed: The BBO Data Feed is a real-time, low latency data feed that includes the following content: (i) Outstanding quotes and standing orders at the best available price level on each side of the market, with aggregate size (''BBO data''), and last sale data;[3] (ii) totals of customer versus non-customer contracts at the BBO, (iii) All-or-None contingency orders priced better than or equal to the BBO, (iv) BBO and last sale data for complex strategies (multi-leg strategies such as spreads, straddles and buy-writes); (v) expected opening price (''EOP'') and expected opening size (''EOS'') information that is disseminated prior to the opening of the market and during trading rotations, (vi) end-of-day (''EOD'') summary messages that are disseminated after the close of a trading session that include summary information about trading in C2 listed options (*i.e.,* product name, opening price, high and low price during the trading session and last sale price), (vii) ''recap messages'' that are disseminated during a trading session any time there is a change in the open, high, low or last sale price of a C2 listed option, as well as product name and total volume traded in the product during the trading session; and (viii) product IDs and codes for all C2 listed options contracts. The BBO Data Feed includes market data for simple options as well as complex strategies. The data in the BBO Data Feed is refreshed periodically during the trading session. The BBO and last sale data contained in the BBO Data Feed is identical to the data sent to the Options Price Reporting Authority (''OPRA'') for redistribution to the public.[4]

Book Depth Data Feed: The Book Depth Data Feed is a real-time, low latency data feed that includes all data contained in the BBO Data Feed (as described above) plus outstanding quotes and standing orders for an additional four price levels on each side of the market, with aggregate size (''Book Depth''). The data in the Book

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] ''Best bid and offer'' or ''BBO'' data is sometimes referred to as ''top-of-book'' data. Data with respect to executed trades is referred to as ''last sale'' data.

[4] MDX makes available to Customers the BBO data and last sale data that is included in the BBO Data Feed no earlier than the time at which the Exchange sends that data to OPRA.

Depth Data Feed is refreshed periodically during the trading session.

COB Data Feed: The COB Data Feed is a real-time data feed that includes data regarding the Exchange's Complex Order Book and related complex order information. The COB Data Feed contains the following information for all C2-traded complex order strategies (multi-leg strategies such as spreads, straddles and buy-writes): (i) Outstanding quotes and standing orders on each side of the market with aggregate size, (ii) last sale data, and (iii) totals of customer versus non-customer contracts.

Fees

BBO Data Feed Fees: MDX currently charges a ''Data Fee'', payable by a Customer, of $1,000 per month for internal use and external redistribution of the BBO Data Feed.[5] The Data Fee entitles a Customer to provide the BBO Data Feed to an unlimited number of internal users and Devices [6] within the Customer. A Customer receiving the BBO Data Feed from another Customer is assessed the Data Fee by MDX pursuant to its own market data agreement with MDX, and is entitled to use the Data internally and/or distribute it externally.[7] All Customers have the same rights to utilize the data internally and/or distribute it externally as long as the Customer has entered into a written agreement with MDX for the data and pays the Data Fee. The Exchange proposes to increase the Data Fee from $1,000 per month to $1,500 per month.

The Exchange currently charges a ''User Fee'', payable by a Customer, of $50 per month per Device or user ID for use of the data in the BBO Data Feed by ''Display Only Service'' users.[8] User fees are payable only for ''external'' Display Only Service users (Devices or user IDs of Display Only Service users who are not employees or natural person independent contractors of the Customer, the Customer's affiliates or an authorized service facilitator).[9] The Exchange is not proposing to amend the User Fee at this time.

Book Depth Data Feed Fees: MDX currently charges a ''Data Fee'', payable by a Customer (as defined above), of $1,000 per month for internal use and external redistribution of the Book Depth Data Feed. The Data Fee for the Book Depth Data Feed entitles a Customer to provide the Book Depth Data Feed to an unlimited number of internal users and Devices within the Customer. A Customer receiving the Book Depth Data Feed from another Customer is assessed the Data Fee by MDX pursuant to its own market data agreement with MDX, and is entitled to use the Data internally and/or distribute it externally. All Customers have the same rights to utilize the Book Depth data internally and/or distribute it externally as long as the Customer has entered into a written agreement with MDX for the data and pays the Data Fee. BBO Data Feed Customers may upgrade to become Book Depth Data Feed Customers without paying any additional Data Fee.[10] The Exchange proposes to increase the Data Fee from $1,000 per month to $1,500 per month.

The Exchange currently charges a ''User Fee'', payable by a Customer, of $50 per month per Device or user ID for use of the data in the Book Depth Data Feed by ''Display Only Service'' users (as defined above). User fees are payable only for ''external'' Display Only Service users (Devices or user IDs of Display Only Service users who are not employees or natural person independent contractors of the Customer, the Customer's affiliates or an authorized service facilitator).[11] The Exchange is not proposing to amend the User Fee at this time.

COB Data Feed Fees: MDX currently charges Customers of the COB Data Feed a Data Fee of $100 per month plus applicable User Fees (as described below). The Data Fee for the COB Data Feed is waived for Customers of the C2 BBO and Book Depth Data Feeds.[12]

MDX charges a Customer User Fees of $25 per month per Device or user ID for receipt of the data by ''Professional Users'' [13]. There is no charge for receipt of the data by ''Non-Professional Users'' [14]. User Fees are subject to a cap of $500 per month (*i.e.,* a Customer pays no more than $500 in User Fees for a given month). The Exchange proposes to delete this fee cap from the MDX fee schedule for C2 data.

The Exchange also proposes to make a few clean-up changes to the MDX fee schedule for C2 data, including removing a few references to a January 1, 2015 effective date for prior fee changes and removing the $1 per month User Fee for COB Data Feed Non-Professional Users, which was eliminated effective January 1, 2015.

2. Statutory Basis

The Exchange believes the proposed rule change is consistent with the Securities Exchange Act of 1934 (the ''Act'') and the rules and regulations thereunder applicable to the Exchange and, in particular, the requirements of Section 6(b) of the Act.[15] Specifically, the Exchange believes the proposed rule change is consistent with Section 6(b)(4) of the Act,[16] which requires that Exchange rules provide for the equitable allocation of reasonable dues, fees, and other charges among its Trading Permit Holders and other persons using its facilities. The Exchange also believes the proposed rule change is consistent

[5] A ''Customer'' is any person, company or other entity that, pursuant to a market data agreement with MDX, is entitled to receive data, either directly from MDX or through an authorized redistributor (*i.e.,* a Customer or an extranet service provider), whether that data is distributed externally or used internally. The MDX fee schedule for C2 data is located at *https://www.cboe.org/MDX/CSM/OBOOKMain.aspx.*

[6] A ''Device'' means any computer, workstation or other item of equipment, fixed or portable, that receives, accesses and/or displays data in visual, audible or other form.

[7] A Customer may choose to receive the data from another Customer rather than directly from MDX's system because it does not want to or is not equipped to manage the technology necessary to establish a direct connection to MDX.

[8] A ''Display Only Service'' allows a natural person end-user to view and manipulate data using the Customer's computerized service, but not to save, copy, export or transfer the data or any results of the manipulation to any other computer hardware, software or media, except for printing it to paper or other non-magnetic media.

[9] An entity or person that receives BBO data from a Customer through a Display Only Service is not a ''Customer'' unless it has a market data agreement in place with MDX.

[10] Such Customers would still be subject to Display Only Service User Fees as described below.

[11] An entity or person that receives Book Depth data from a Customer through a Display Only Service is not a ''Customer'' unless it has a market data agreement in place with MDX.

[12] Such COB Data Feed Customers are still subject to User Fees.

[13] A ''Professional User'' is any natural person recipient of Data who is not a Non-Professional User (as defined below). User Fees for Professional Users are payable for both ''internal'' Professional Users (Devices or user IDs of employees of a Customer) and ''external'' Professional Users (Devices or user IDs of Professional Users who receive the Data from a Customer and are not employed by the Customer). (Non-Professional Users must be external since a person who uses the COB Data Feed for a commercial purpose cannot be a Non-Professional User.)

[14] A ''Non-Professional User'' is a natural person or qualifying trust that uses Data only for personal purposes and not for any commercial purpose and, for a natural person who works in the United States, is not: (i) Registered or qualified in any capacity with the Securities and Exchange Commission, the Commodities Futures Trading Commission, any state securities agency, any securities exchange or association, or any commodities or futures contract market or association; (ii) engaged as an ''investment adviser'' as that term is defined in Section 201(11) of the Investment Advisors Act of 1940 (whether or not registered or qualified under that Act); or (iii) employed by a bank or other organization exempt from registration under federal or state securities laws to perform functions that would require registration or qualification if such functions were performed for an organization not so exempt; or, for a natural person who works outside of the United States, does not perform the same functions as would disqualify such person as a Non-Professional User if he or she worked in the United States.

[15] 15 U.S.C. 78f(b).

[16] 15 U.S.C. 78f(b)(4).

with the Section 6(b)(5) [17] requirement that the rules of an exchange not be designed to permit unfair discrimination between customers, issuers, brokers, or dealers.

The proposed increases in the Data Fees for the BBO and Book Depth Data Feeds are intended to generate revenues that are needed to cover C2's actual and anticipated increases in the costs of collecting, processing and disseminating options market information and assuring the reliability and integrity of that information, as well as increases in C2's administrative costs. These costs include enhancements to C2's systems that are needed in order to enable C2 to handle the continually increasing volume of market information. C2 has not changed the Data Fee for BBO data since that fee was established in 2011. C2 has not changed the Data Fee for Book Depth data since that fee was established effective January 1, 2015.

The Exchange believes the proposed increase in the Data Fee for BBO data is equitable and not unfairly discriminatory because it would apply equally to all Customers. The Exchange believes the proposed Data Fee is reasonable because it compares favorably to fees that other markets charge for similar products. For example, NASDAQ OMX PHLX charges Internal Distributors a monthly fee of $4,000 per organization and External Distributors a monthly fee of $5,000 per organization for its ''TOPO Plus Orders'' data feed, which like the BBO Data Feed includes top-of-book data (including orders, quotes and trades) and other market data.[18] The International Securities Exchange offers a ''Top Quote Feed'', which includes top-of-book data, and a separate ''Spread Feed'', which like the BBO Data Feed includes order and quote data for complex strategies (*i.e.,* a customer must subscribe to both feeds to receive data comparable to the BBO Data Feed). ISE charges distributors of its Top Quote Feed a base monthly fee of $3,000 plus $20 per month per controlled device. ISE charges distributors of its Spread Feed a base monthly fee of $3,000 plus $25 per month per controlled device.[19]

The Exchange believes the proposed increase in the Data Fee for Book Depth data is equitable and not unfairly discriminatory because it would apply equally to all Customers. The Exchange believes the proposed Data Fee is reasonable because it compares favorably to fees that other markets charge for similar products. For example, the International Securities Exchange offers a ''Depth of Market'' Feed, which includes the aggregated volume of all quotes and orders available at each of the top five price levels for simple (single legged) instruments, and a separate Spread Feed, which like the Book Depth Data Feed includes order and quote data for complex strategies (*i.e.,* a customer must subscribe to both feeds to receive data comparable to the Book Depth Data Feed). ISE charges distributors of its Depth of Market Feed a base monthly fee of $5,000 plus $50 per month per controlled device. ISE charges distributors of its Spread Feed a base monthly fee of $3,000 plus $25 per month per controlled device.[20] NASDAQ OMX PHLX charges Internal Distributors a monthly fee of $4,000 and External Distributors a monthly fee of a $4,500 for its Depth of Market data feed that includes full depth of quotes and orders and last sale data for options listed on PHLX.[21]

The Exchange believes the proposal to delete the monthly cap on User Fees for receipt of the COB Data Feed is equitable and not unfairly discriminatory because it would apply equally to all Customers. The Exchange believes the User Fees, without a fee cap, are reasonable because they are similar to fees that other markets charge for similar products. For example, NYSE Arca charges $20 per month to each Professional User and $1 per month to each Non-Professional User for receipt of the Arcabook for Arca Options—Complex data feed. The Exchange believes NYSE Arca does not cap its user fees.[22] Similarly, NYSE MKT charges $20 per month to each Professional User and $1 per month to each Non-Professional User for receipt of the Arcabook for Amex Options Options—Complex data feed. The Exchange believes NYSE MKT does not cap its user fees. The Exchange also believes removal of the fee cap is reasonable in that it is not anticipated to materially affect the amount of User Fees any Customer pays.

The decision of the United States Court of Appeals for the District of Columbia Circuit in *NetCoalition* v. *SEC,* 615 F.3d 525 (D.C. Cir. 2010), upheld reliance by the Securities and Exchange Commission (''Commission'') upon the existence of competitive market mechanisms to set reasonable and equitably allocated fees for proprietary market data:

In fact, the legislative history indicates that the Congress intended that the market system 'evolve through the interplay of competitive forces as unnecessary regulatory restrictions are removed' and that the SEC wield its regulatory power 'in those situations where competition may not be sufficient,' such as in the creation of a 'consolidated transactional reporting system.'

Id. At 535 (quoting H.R. Rep. No. 94–229 at 92 (1975), *as reprinted in* 1975 U.S.C.C.A.N. 323). The court agreed with the Commission's conclusion that ''Congress intended that 'competitive forces should dictate the services and practices that constitute the U.S. national market system for trading equity securities.' '' [23]

As explained below in the Exchange's Statement on Burden on Competition, the Exchange believes that the need to attract order flow from market participants provides an effective constraint on the market data fees that the Exchange, through MDX, has the ability and the incentive to charge. In addition, the existence of alternatives to these data products, such as consolidated data and proprietary data from other sources, as described below, further ensures that the Exchange cannot set unreasonable fees, or fees that are unreasonably discriminatory, when vendors and subscribers can select such alternatives.

For the reasons cited above, the Exchange believes the proposed fees for the BBO, Book Depth and COB Data Feeds are equitable, reasonable and not unfairly discriminatory. In addition, the Exchange believes that no substantial countervailing basis exists to support a finding that the proposed fees for the BBO, Book Depth and COB Data Feeds fail to meet the requirements of the Act.

B. Self-Regulatory Organization's Statement on Burden on Competition

C2 does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act.

An exchange's ability to price its proprietary market data feed products is constrained by (1) the existence of actual competition for the sale of such data, (2) the joint product nature of

[17] 15 U.S.C. 78f(b)(5).

[18] *See* IX. Proprietary Data Feed Fees, TOPO Plus Orders, available at *http://www.nasdaqtrader.com/Micro.aspx?id=phlxpricing.*

[19] *See* ISE Schedule of Fees available at *http://www.ise.com/assets/documents/OptionsExchange/legal/fee/ISE_fee_schedule.pdf.*

[20] *Supra* Note 17.

[21] *See* IX. Proprietary Data Feed Fees, PHLX Depth Data, available at *http://www.nasdaqtrader.com/Micro.aspx?id=phlxpricing.*

[22] *See* NYSE Market Data Pricing Guide available at *www.nyxdata.com/doc/241907.*

[23] *NetCoalition,* 615 F.3d at 535 (Quoting Securities Exchange Act Release No. 59039 (December 9, 2008), 73 FR 74770 (December 9, 2008) at 74771).

exchange platforms, and (3) the existence of alternatives to the Exchange's proprietary data.

The Existence of Actual Competition. The Exchange believes competition provides an effective constraint on the market data fees that the Exchange, through MDX, has the ability and the incentive to charge. C2 has a compelling need to attract order flow from market participants in order to maintain its share of trading volume. This compelling need to attract order flow imposes significant pressure on C2 to act reasonably in setting its fees for market data, particularly given that the market participants that will pay such fees often will be the same market participants from whom C2 must attract order flow. These market participants include broker-dealers that control the handling of a large volume of customer and proprietary order flow. Given the portability of order flow from one exchange to another, any exchange that sought to charge unreasonably high data fees would risk alienating many of the same customers on whose orders it depends for competitive survival. C2 currently competes with thirteen options exchanges (including C2's affiliate, Chicago Board Options Exchange) for order flow.[24]

In addition, in the case of products that are distributed through market data vendors, the vendors themselves provide additional price discipline for proprietary data products because they control the primary means of access to certain end users. These vendors impose price discipline based upon their business models. For example, vendors that assess a surcharge on data they sell are able to refuse to offer proprietary products that their end users do not or will not purchase in sufficient numbers. Similarly, Customers will not offer the BBO, Book Depth or COB Data Feeds unless these products will help them maintain current users or attract new ones. For example, a broker-dealer will not choose to offer the BBO, Book Depth or COB Data Feeds to its retail customers unless the broker-dealer believes that the retail customers will use and value the data and the provision of such data will help the broker-dealer maintain the customer relationship, which allows the broker-dealer to increase its revenues. Professional users will not request any of these feeds from Customers unless they can use the data for profit-generating purposes in their businesses. All of these factors operate as constraints on pricing proprietary data products.

Joint Product Nature of Exchange Platform. Transaction execution and proprietary data products are complementary in that market data is both an input and a byproduct of the execution service. In fact, proprietary market data and trade executions are a paradigmatic example of joint products with joint costs. The decision whether and on which platform to post an order will depend on the attributes of the platforms where the order can be posted, including the execution fees, data quality, and price and distribution of data products. Without a platform to post quotations, receive orders and execute trades, exchange data products would not exist.

The costs of producing market data include not only the costs of the data distribution infrastructure, but also the costs of designing, maintaining, and operating the exchange's platform for posting quotes, receiving orders and executing trades, and the cost of regulating the exchange to ensure its fair operation and maintain investor confidence. The total return that a trading platform earns reflects the revenues it receives from both products and the joint costs it incurs.

Moreover, an exchange's broker-dealer customers view the costs of transaction executions and market data as a unified cost of doing business with the exchange. A broker-dealer will only choose to direct orders to an exchange if the revenue from the transaction exceeds its cost, including the cost of any market data that the broker-dealer chooses to buy in support of its order routing and trading decisions. If the costs of the transaction are not offset by its value, then the broker-dealer may choose instead not to purchase the product and trade away from that exchange.

Analyzing the cost of market data product production and distribution in isolation from the cost of all of the inputs supporting the creation of market data and market data products will inevitably underestimate the cost of the data and data products because it is impossible to obtain the data inputs to create market data products without a fast, technologically robust, and well-regulated execution system, and system and regulatory costs affect the price of both obtaining the market data itself and creating and distributing market data products. It would be equally misleading, however, to attribute all of an exchange's costs to the market data portion of an exchange's joint products. Rather, all of an exchange's costs are incurred for the unified purposes of attracting order flow, executing and/or routing orders, and generating and selling data about market activity. The total return that an exchange earns reflects the revenues it receives from the joint products and the total costs of the joint products.

The level of competition and contestability in the market is evident in the numerous alternative venues that compete for order flow, including 14 options self-regulatory organization (''SRO'') markets, as well as various forms of alternative trading systems (''ATSs''), including dark pools and electronic communication networks (''ECNs'') and internalizing broker-dealers. Competition among trading platforms can be expected to constrain the aggregate return that each platform earns from the sale of its joint products, but different platforms may choose from a range of possible, and equally reasonable, pricing strategies as the means of recovering total costs. For example, some platforms may choose to pay rebates to attract orders, charge relatively low prices for market data products (or provide market data products free of charge), and charge relatively high prices for accessing posted liquidity. Other platforms may choose a strategy of paying lower rebates (or no rebates) to attract orders, setting relatively high prices for market data products, and setting relatively low prices for accessing posted liquidity. In this environment, there is no economic basis for regulating maximum prices for one of the joint products in an industry in which suppliers face competitive constraints with regard to the joint offering.

The Existence of Alternatives. C2 is constrained in pricing the BBO, Book Depth and COB Data Feeds by the availability to market participants of alternatives to purchasing these products. C2 must consider the extent to which market participants would choose one or more alternatives instead of purchasing the exchange's data. Other options exchanges can and have produced their own complex order book market data products, and thus are sources of potential competition for MDX. For example, as noted above, ISE and NASDAQ OMX PHLX offer market data products that compete with the BBO and Book Depth Data Feeds, and NYSE Arca and NYSE MKT offer market data products that compete with the COB Data Feed.

The large number of SROs, ATSs and internalizing broker-dealers that currently produce proprietary data or are currently capable of producing it

[24] The Commission has previously made a finding that the options industry is subject to significant competitive forces. *See e.g.,* Securities Exchange Act Release No. 59949 (May 20, 2009), 74 FR 25593 (May 28, 2009) (SR–ISE–2009–97) (order approving ISE's proposal to establish fees for a real-time depth of market data offering).

provides further pricing discipline for proprietary data products. Each SRO, ATS, and broker-dealer is currently permitted to produce and sell proprietary data products, and many currently do. In addition, the OPRA data feed is a significant competitive alternative to the BBO and last sale data included in the BBO and Book Depth Data Feeds.

Further, data products are valuable to professional users only if they can be used for profit-generating purposes in their businesses and valuable to non-professional users only insofar as they provide information that such users expect will assist them in tracking prices and market trends and making trading decisions.

The existence of numerous alternatives to the Exchange's products, including consolidated data and proprietary data from other sources, ensures that the Exchange cannot set unreasonable fees, or fees that are unreasonably discriminatory, when vendors and subscribers can elect these alternatives or choose not to purchase a specific proprietary data product if its cost to purchase is not justified by the returns any particular vendor or subscriber would achieve through the purchase.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The Exchange neither solicited nor received comments on the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A) of the Act [25] and paragraph (f) of Rule 19b–4 [26] thereunder. At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission will institute proceedings to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–C2–2016–025 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–C2–2016–025. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–C2–2016–025, and should be submitted on or before January 26, 2017.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[27]

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31942 Filed 1–4–17; 8:45 am]

BILLING CODE 8011–01–P

[25] 15 U.S.C. 78s(b)(3)(A).

[26] 17 CFR 240.19b–4(f).

[27] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–79705; File No. SR–NYSEArca–2016–169]

Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing and Immediate Effectiveness of Proposed Rule Change Amending NYSE Arca Equities Rule 7.35(a)(10)(A)

December 29, 2016.

Pursuant to Section 19(b)(1) [1] of the Securities Exchange Act of 1934 (''Act'') [2] and Rule 19b–4 thereunder,[3] notice is hereby given that, on December 22, 2016, NYSE Arca, Inc. (''Exchange'' or ''NYSE Arca'') filed with the Securities and Exchange Commission (''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the self-regulatory organization. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend NYSE Arca Equities Rule 7.35(a)(10)(A) to extend the period for the current Trading Halt Auction Collar price collar. The proposed rule change is available on the Exchange's Web site at *www.nyse.com,* at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the self-regulatory organization included statements concerning the purpose of, and basis for, the proposed rule change and discussed any comments it received on the proposed rule change. The text of those statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant parts of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and the Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend NYSE Arca Equities Rule 7.35(a)(10)(A) (''Rule 7.35'') to extend the period for

[1] 15 U.S.C. 78s(b)(1).

[2] 15 U.S.C. 78a.

[3] 17 CFR 240.19b–4.

the current Trading Halt price collar thresholds.

As specified in Rule 7.35(a)(10)(A), the price collar thresholds for Trading Halt Auctions are currently set at 10% for securities with an Auction Reference Price [4] of $25.00 or less, 5% for securities with an Auction Reference Price greater than $25.00 but less than or equal to $50.00, and 3% for securities with an Auction Reference Price greater than $50.00. These price collar thresholds were adopted on an interim basis and sunset on January 31, 2017.[5]

When approving the current price collar thresholds for Trading Halt Auctions, the Commission noted that they were appropriate as an interim measure to protect investors and the public interest.[6] The Exchange committed to use the period while the interim price collar thresholds are in place to conduct an analysis to determine whether to make the proposed price collar thresholds permanent or to propose other or additional changes to its re-opening process. Since that time, the Participants of the Regulation NMS Plan to Address Extraordinary Market Volatility (''LULD Plan'') (which includes the Exchange),[7] with input from the Advisory Committee to the LULD Plan, have filed to amend the LULD Plan to require, among other things, that a Trading Pause would continue until the Primary Listing Exchange has reopened trading using its established reopening procedures and reports a Reopening Price.[8] In connection with the Twelfth Amendment to the LULD Plan, the Exchange has filed a proposed rule change to amend its Trading Halt Auction procedures to provide for automated reopening processes that would be uniform across the Primary Listing Exchanges.[9] The Exchange's proposed enhancements to the Trading Halt Auction include eliminating the current interim price collar thresholds and replacing them with Auction Collars that are aligned with the LULD Plan Price Bands and providing for extensions of a Trading Pause and related widening of Auction Collars for each such extension.

The Exchange proposes that the current interim price collar thresholds should remain in effect until the Trading Halt Auction Filing is approved and operative.[10] To effect this change, the Exchange proposes to amend Rule 7.35(a)(10)(A) to provide that the price collar thresholds specified in that paragraph applicable to Trading Halt Auctions would be in effect until SR–NYSEArca–2016–130 is both approved and operative. This extension of the time period would also provide additional time for the Commission to review the Twelfth Amendment to the LULD Plan. The Exchange continues to believe that it is appropriate to have protections in place for Trading Halt Auctions to assure that a reopening trade will not deviate significantly from prior prices, even taking into consideration natural price movements for a security. The Exchange believes that it is appropriate to maintain price collar thresholds for Trading Halt Auctions based on the clearly erroneous execution guidelines because an auction trade is subject to these guidelines for purposes of determining whether such execution is clearly erroneous. In addition, the Exchange's interim price collar thresholds are similar to how BATS BZX Exchange, Inc. (''BATS'') prices its Halt Auctions for ETPs. Like BATS, the Exchange is the primary listing market only for ETPs and would, therefore only have Trading Halt Auctions for ETPs. BATS Rule 11.23(d)(2)(D) provides that BATS executes orders in ETPs in a Halt auction at a price level within a ''Collar Price Range'' that maximizes the number of shares executed in the auction. Similar to the Exchange's rule, BATS uses Collar Price Ranges that are based on the numerical guidelines set forth in the market-wide clearly erroneous execution rules.[11] The Exchange's Auction Collars differ from BATS's pricing mechanism because the Exchange would use the consolidated last sale price as the reference price, rather than the midpoint of a ''Valid NBBO.'' The Exchange believes that using the consolidated last sale price tracks the market-wide clearly erroneous execution rules, which similarly use the consolidated last sale price for determining whether an execution is clearly erroneous.

The Exchange will announce by Trader Update when the interim collars will no longer be operative and the changes proposed in the Trading Halt Auction Collar Filing will be operative.

2. Statutory Basis

The proposed rule change is consistent with Section 6(b) of the Securities Exchange Act of 1934 (the ''Act''),[12] in general, and furthers the objectives of Section 6(b)(5),[13] in particular, because it is designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in facilitating transactions in securities, to remove impediments to, and perfect the mechanism of, a free and open market and a national market system and, in general, to protect investors and the public interest.

The Exchange believes that extending the interim period for the current Trading Halt Auction price collar thresholds would remove impediments to and perfect the mechanism of a fair and orderly market by providing for Auctions Collars at the Exchange pending Commission review of the

[4] As set forth in Rule 7.35(a)(8)(A), the Auction Reference Price for Trading Halt Auctions is the last consolidated round-lot price of that trading day and, if none, the prior trading day's Official Closing Price.

[5] *See* Securities Exchange Act Release No. 78734 (July 20, 2016), 81 FR 48876 (July 26, 2016) (SR–NYSEArca–2016–98) (Notice of Filing and Immediate Effectiveness to extend the period for the interim Trading Halt Auction Collar thresholds to January 31, 2017). Effective September 28, 2016, the Exchange has deleted former Rule 1.1(s) and eliminated the ''P'' modifier from Rule 7.35. *See* Securities Exchange Act Release No. 79078 (October 11, 2016), 81 FR 71559 (October 17, 2016) (SR–NYSEArca–2016–135) (Notice of Filing and Immediate Effectiveness of proposed rule change).

[6] *See* Securities Exchange Act Release Nos. 76994 (Jan. 28, 2016), 81 FR 5809 (Feb. 3, 2016) (SR–NYSEArca–2015–121) (Approval Order) and 77140 (Feb. 16, 2016), 81 FR 8812 (SR–NYSEArca–2016–27) (Notice of Filing).

[7] *See* Securities Exchange Act Release No. 77679 (April 21, 2016), 81 FR 24908 (April 27, 2016) (File No. 4–631) (Order approving 10th Amendment to the LULD Plan). Unless otherwise specified, capitalized terms used herein have the same meaning as set forth in the Plan or in Exchange rules.

[8] *See* Securities Exchange Act Release No. 79410 (November 28, 2016), 81 FR 87114 (December 2, 2016) (File No. 4–631) (Notice of Filing of the Twelfth Amendment to the LULD Plan) (''Twelfth Amendment to the LULD Plan'').

[9] *See* Securities Exchange Act Release Nos. 79107 (October 18, 2016), 81 FR 73519 (October 24, 2016) (SR–NYSEArca–2016–130) (Notice of Filing) (''Trading Halt Auction Filing'') and 79480 (December 6, 2016), 81 FR 89525 (December 12, 2016) (SR–NYSEArca–2016–130) (Notice of Designation of a Longer Period for Commission Action extending time for Commission action on the Trading Halt Auction Filing to January 22, 2017).

[10] As provided for in the Trading Halt Auction Filing, *supra id.,* the Exchange proposes to implement the proposed rule changes following Commission approval of the Twelfth Amendment to the LULD Plan.

[11] As set forth in BATS Rule 11.23(a)(6), the Collar Price Range is 10% for securities with a Collar Midpoint of $25.00 or less, 5% for securities with a Collar Midpoint greater than $25.00 but less than or equal to $50.00, and 3% for securities with a Collar Midpoint greater than $50.00. BATS Rule 11.23(a)(6) defines the Collar Midpoint as the Volume Based Tie Breaker, which is defined in BATS Rule 11.23(a)(23) as the midpoint of the NBBO if it is a Valid NBBO, with a Valid NBBO defined as where: (i) There is both a NBB and NBO for the security; (ii) the NBBO is not crossed; and (iii) the midpoint of the NBBO is less than the Maximum Percentage away from both the NBB and the NBO.

[12] 15 U.S.C. 78f(b).

[13] 15 U.S.C. 78f(b)(5).

Twelfth Amendment to the LULD Plan and the Exchange's Trading Halt Auction Filing. Until such time as these proposed changes have been approved and operative, the price collar thresholds for Trading Halt Auctions would continue to be aligned with the clearly erroneous execution guidelines and therefore continuing with these price collar thresholds would reduce the potential for a Trading Halt Auction to be a clearly erroneous execution. In addition, the Exchange believes that extending the Exchange's interim measure pending Commission approval of the Twelfth Amendment to the LULD Plan and the Trading Halt Auction Filing would be consistent with the protection of investors and the public interest.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. The proposed change is not designed to address any competitive issue but rather to provide for the interim price collar thresholds for Trading Halt Auctions on the Exchange to remain in effect until the Trading Halt Auction Filing is approved and operative.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were solicited or received with respect to the proposed rule change.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the proposed rule change does not: (i) Significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act [14] and Rule 19b–4(f)(6) thereunder.[15]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's Internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–NYSEArca–2016–169 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE., Washington, DC 20549–1090.

All submissions should refer to File Number SR–NYSEArca–2016–169. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's Internet Web site (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for Web site viewing and printing in the Commission's Public Reference Room, 100 F Street NE., Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change; the Commission does not edit personal identifying information from submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–NYSEArca–2016–169 and should be submitted on or before January 26, 2017.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[16]

Eduardo A. Aleman,

Assistant Secretary.

[FR Doc. 2016–31937 Filed 1–4–17; 8:45 am]

BILLING CODE 8011–01–P

[14] 15 U.S.C. 78s(b)(3)(A).

[15] 17 CFR 240.19b–4(f)(6). In addition, Rule 19b–4(f)(6)(iii) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change, along with a brief description and the text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Exchange has satisfied this requirement.

[16] 17 CFR 200.30–3(a)(12).

SURFACE TRANSPORTATION BOARD

60-Day Notice of Intent To Seek Approval of an Existing Collection in Use Without an OMB Control Number: Dispute Resolution Procedures Under the Fixing America's Surface Transportation Act of 2015

AGENCY: Surface Transportation Board.

ACTION: Notice and request for comments.

SUMMARY: As part of its continuing effort to reduce paperwork burdens, and as required by the Paperwork Reduction Act of 1995 (PRA), the Surface Transportation Board (STB or Board) gives notice that it is requesting from the Office of Management and Budget (OMB) approval of a new collection to implement a directive of the Fixing America's Surface Transportation Act of 2015, FAST Act). Title XI of the FAST Act, entitled ''Passenger Rail Reform and Investment Act of 2015,'' gives the Board jurisdiction to resolve cost allocation and access disputes between National Railroad Passenger Corporation (Amtrak), the states, and potential non-Amtrak operators of intercity passenger rail service. The FAST Act directs the Board to establish procedures for the resolution of these disputes, ''which may include the provision of professional mediation services.'' The Board adopted final rules to implement these procedures in *Dispute Resolution Procedures Under the Fixing America's Surface Transportation Act of 2015,* EP 734 (STB served Nov. 29, 2016). Due to a technical omission in the notice of proposed rulemaking in EP 734 under the PRA, the Board is seeking OMB approval for this collection in this notice.

DATES: Comments on this information collection should be submitted by March 6, 2017.

ADDRESSES: Direct all comments to Chris Oehrle, PRA Officer, Surface

Transportation Board, 395 E Street SW., Washington, DC 20423–0001, or to *PRA@stb.dot.gov.* When submitting comments, please refer to ''Paperwork Reduction Act Comments, Dispute Resolution Procedures Under the Fixing America's Surface Transportation Act of 2015.''

FOR FURTHER INFORMATION CONTACT: For further information regarding this collection, contact Michael Higgins, Deputy Director, Office of Public Assistance, Governmental Affairs, and Compliance at (202) 245–0284 or at *michael.higgins@stb.gov.* [Assistance for the hearing impaired is available through the Federal Information Relay Service (FIRS) at 1–800–877–8339.]

SUPPLEMENTARY INFORMATION: Comments are requested concerning: (1) The accuracy of the Board's burden estimates; (2) ways to enhance the quality, utility, and clarity of the information collected; (3) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology, when appropriate; and (4) whether the collection of information is necessary for the proper performance of the functions of the Board, including whether the collection has practical utility. Submitted comments will be summarized and included in the Board's request for OMB approval.

Description of Collection

Title: Dispute Resolution Procedures Under the Fixing America's Surface Transportation Act of 2015.

OMB Control Number: 2140–XXXX.

STB Form Number: None.

Type of Review: Existing collection in use without an OMB control number.

Respondents: Parties seeking the Board's informal assistance.

Number of Respondents: Approximately 3.

Estimated Time per Response: 1 hour.

Frequency: On occasion.

Total Burden Hours (annually including all respondents): 3 (estimated hours per response (1) × total number of responses (3)).

Total ''Non-hour Burden'' Cost: None identified. Filings may be submitted electronically to the Board.

Needs and Uses: Under the new 49 CFR 1109.5, parties to a dispute involving the State-Sponsored Route Committee or the Northeast Corridor Committee would, even in the absence of a formal complaint before the Board, be permitted to request, by letter submitted to the Board's Office of Public Assistance, Governmental Affairs, and Compliance, the Board's informal assistance in securing outside professional mediation services. The letter shall include a concise description of the issues for which outside professional mediation services are sought. The collection by the Board of these request letters enables the Board to meet its statutory duty under the FAST Act.

Under the PRA, a federal agency that conducts or sponsors a collection of information must display a currently valid OMB control number. A collection of information, which is defined in 44 U.S.C. 3502(3) and 5 CFR 1320.3(c), includes agency requirements that persons submit reports, keep records, or provide information to the agency, third parties, or the public. Under 44 U.S.C. 3506(c)(2)(A), federal agencies are required to provide, prior to an agency's submitting a collection to OMB for approval, a 60-day notice and comment period through publication in the **Federal Register** concerning each proposed collection of information, including each proposed extension of an existing collection of information.

Dated: December 29, 2016.

Brendetta S. Jones,

Clearance Clerk.

[FR Doc. 2016–31956 Filed 1–4–17; 8:45 am]

BILLING CODE 4915–01–P

DEPARTMENT OF TRANSPORTATION

Office of the Secretary

Application of Maine Aviation Aircraft Charter, LLC for Commuter Air Carrier Authority

AGENCY: Department of Transportation.

ACTION: Notice of Order to Show Cause (Order 2016–12–24), Docket DOT–OST–2016–0114.

SUMMARY: The Department of Transportation is directing all interested persons to show cause why it should not issue an order finding Maine Aviation Aircraft Charter, LLC, fit, willing, and able, and awarding it a Commuter Air Carrier Authorization.

DATES: Persons wishing to file objections should do so no later than January 12, 2017.

ADDRESSES: Objections and answers to objections should be filed in Docket DOT–OST–2016–0114 and addressed to the U.S. Department of Transportation, Docket Operations, 1200 New Jersey Avenue SE., West Building Ground Floor, M–30, Room W12–140, Washington, DC and should be served upon the parties listed in Attachment A to the order.

FOR FURTHER INFORMATION CONTACT: Shabu Thomas, Air Carrier Fitness Division, (X–56, Office W86–469), U.S. Department of Transportation, 1200 New Jersey Avenue SE., Washington, DC 20590, (202) 366–9721.

Dated: December 28, 2016.

Jenny T. Rosenberg,

Acting Assistant Secretary forAviation and International Affairs.

[FR Doc. 2016–31977 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–9X–P

DEPARTMENT OF TRANSPORTATION

Office of the Secretary

[Docket DOT–OST–2016–0121]

Application of Nealco Air Charter Services, Inc., d/b/a Watermakers Air; for Commuter Air Carrier Authority

AGENCY: Department of Transportation.

ACTION: Notice of Order to Show Cause (Order 2016–12–25).

SUMMARY: The Department of Transportation is directing all interested persons to show cause why it should not issue an order finding Nealco Air Charter Services, Inc. d/b/a Watermakers Air, fit, willing, and able, and awarding it a Commuter Air Carrier Authorization.

DATES: Persons wishing to file objections should do so no later than January 12, 2017.

ADDRESSES: Objections and answers to objections should be filed in Docket DOT–OST–2016–0121 and addressed to the U.S. Department of Transportation, Docket Operations, 1200 New Jersey Avenue SE., West Building Ground Floor, M–30, Room W12–140, Washington, DC and should be served upon the parties listed in Attachment A to the order.

FOR FURTHER INFORMATION CONTACT: Shabu Thomas, Air Carrier Fitness Division, (X–56, Office W86–469), U.S. Department of Transportation, 1200 New Jersey Avenue SE., Washington, DC 20590, (202) 366–9721.

Dated: December 28, 2016.

Jenny T. Rosenberg,

Acting Assistant Secretary for Aviation and International Affairs.

[FR Doc. 2016–31979 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–9X–P

DEPARTMENT OF TRANSPORTATION

Office of the Secretary

Application of Aztec Worldwide Airlines, Inc. for Commuter Authority

AGENCY: Department of Transportation.

ACTION: Notice of Order to Show Cause (Order 2016–12–26) Docket DOT–OST–2016–0055

SUMMARY: The Department of Transportation is directing all interested persons to show cause why it should not issue an order finding Aztec Worldwide Airlines, Inc., fit, willing, and able, to provide scheduled passenger service as a commuter air carrier using small aircraft pursuant to Part 135 of the Federal Aviation Regulations, and awarding it a Commuter Air Carrier Authorization.

DATES: Persons wishing to file objections should do so no later than January 12, 2017.

ADDRESSES: Objections and answers to objections should be filed in Docket DOT–OST–2016–0055 and addressed to U.S. Department of Transportation, Docket Operations, (M–30, Room W12–140), 1200 New Jersey Avenue SE., West Building Ground Floor, Washington, DC 20590, and should be served upon the parties listed in Attachment A to the order.

FOR FURTHER INFORMATION CONTACT: Barbara Snoden, Office of Aviation Analysis (X–56, Office W86–471), U.S. Department of Transportation, 1200 New Jersey Avenue SE., Washington, DC 20590, (202) 366–4834.

Dated: December 28, 2016.

Jenny T. Rosenberg,

Acting Assistant Secretary for Aviation and International Affairs.

[FR Doc. 2016–31978 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–9X–P

DEPARTMENT OF TRANSPORTATION

Office of the Secretary

Application of Paklook Air, Inc. D/B/A Airlift Alaska for Certificate Authority

AGENCY: Department of Transportation.

ACTION: Notice of Order to Show Cause (Order 2016–12–22) Docket DOT–OST–2016–0126.

SUMMARY: The Department of Transportation is directing all interested persons to show cause why it should not issue an order finding Paklook Air, Inc. d/b/a Airlift Alaska fit, willing, and able, and awarding it a certificate of public convenience and necessity to engage in interstate scheduled air transportation of persons, property, and mail.

DATES: Persons wishing to file objections should do so no later than January 12, 2017.

ADDRESSES: Objections and answers to objections should be filed in Docket DOT–OST–2016–0126 and addressed to the Department of Transportation, Docket Operations, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12–140, Washington, DC, and should be served upon the parties listed in Attachment A to the order.

FOR FURTHER INFORMATION CONTACT: Damon D. Walker, Air Carrier Fitness Division, (X–56, Office W86–469), U.S. Department of Transportation, 1200 New Jersey Avenue SE., Washington, DC 20590, (202) 366–9721.

Dated: December 28, 2016.

Jenny T. Rosenberg,

Acting Assistant Secretary for Aviation and International Affairs.

[FR Doc. 2016–31982 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–9X–P

DEPARTMENT OF TRANSPORTATION

Office of the Secretary

Application of Galaxy Air Services FBO, LLC D/B/A Texas Air Shuttle for Commuter Authority

AGENCY: Department of Transportation.

ACTION: Notice of Order to Show Cause (Order 2016–12–23) Docket DOT–OST–2015–0167.

SUMMARY: The Department of Transportation is directing all interested persons to show cause why it should not issue an order finding Galaxy Air Services FBO, LLC d/b/a Texas Air Shuttle fit, willing, and able, and awarding it a Commuter Air Carrier Authorization.

DATES: Persons wishing to file objections should do so no later than January 12, 2017.

ADDRESSES: Objections and answers to objections should be filed in Docket DOT–OST–2015–0167 and addressed to U.S. Department of Transportation, Docket Operations, (M–30, Room W12–140), 1200 New Jersey Avenue SE., West Building Ground Floor, Washington, DC 20590, and should be served upon the parties listed in Attachment A to the order.

FOR FURTHER INFORMATION CONTACT: Damon D. Walker, Air Carrier Fitness Division (X–56, Office W86–469), U.S. Department of Transportation, 1200 New Jersey Avenue SE., Washington, DC 20590, (202) 366–9721.

Dated: December 28, 2016.

Jenny T. Rosenberg,

Acting Assistant Secretary for Aviation and International Affairs.

[FR Doc. 2016–31981 Filed 1–4–17; 8:45 am]

BILLING CODE 4910–9X–P

DEPARTMENT OF THE TREASURY

Office of Foreign Assets Control

Additional Identifying Information Associated With Persons Whose Property and Interests in Property Are Blocked Pursuant to Executive Order 13694 of April 1, 2015, as amended by Executive Order 13757 of December 29, 2016.

AGENCY: Office of Foreign Assets Control, Treasury.

ACTION: Notice.

SUMMARY: The U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC) is publishing additional identifying information associated with the four individuals and five entities listed in the Annex to Executive Order (E.O.) 13694 of April 1, 2015, as amended by E.O. 13757 of December 29, 2016, whose property and interests in property have been blocked.

FOR FURTHER INFORMATION CONTACT: Assistant Director, Sanctions Compliance & Evaluation, Office of Foreign Assets Control, U.S. Department of the Treasury, 1500 Pennsylvania Avenue NW. (Treasury Annex), Washington, DC 20220, Tel: (202) 622–2490.

SUPPLEMENTARY INFORMATION: OFAC's List of Specially Designated Nationals and Blocked Persons (SDN List) and additional information concerning OFAC sanctions programs are available from OFAC's Web site (*www.treasury.gov/ofac*).

Background

On December 29, 2016, the President issued E.O. 13757, ''Taking Additional Steps to Address the National Emergency with Respect to Significant Malicious Cyber-Enabled Activities'', amending E.O. 13694 of April 1, 2015, ''Blocking the Property of Certain Persons Engaging in Significant Malicious Cyber-Enabled Activities'' pursuant to, *inter alia,* the International Emergency Economic Powers Act (50 U.S.C. 1701–06). E.O. 13757 was effective at 12:01 a.m. eastern standard time on December 29, 2016.

The Annex to E.O. 13694, as amended by E.O. 13757, lists four individuals and

five entities whose property and interests in property are blocked. OFAC is publishing additional identifying information associated with those individuals and entities.

The listings for these individuals and entities on OFAC's SDN List appear as follows:

Individuals

1. ALEXSEYEV, Vladimir Stepanovich; DOB 24 Apr 1961; Passport 100115154 (Russia); First Deputy Chief of GRU (individual) [CYBER2] (Linked To: MAIN INTELLIGENCE DIRECTORATE).
2. GIZUNOV, Sergey (a.k.a. GIZUNOV, Sergey Aleksandrovich); DOB 18 Oct 1956; Passport 4501712967 (Russia); Deputy Chief of GRU (individual) [CYBER2] (Linked To: MAIN INTELLIGENCE DIRECTORATE).
3. KOROBOV, Igor (a.k.a. KOROBOV, Igor Valentinovich); DOB 03 Aug 1956; nationality Russia; Passport 100119726 (Russia); alt. Passport 100115101 (Russia); Chief of GRU (individual) [CYBER2] (Linked To: MAIN INTELLIGENCE DIRECTORATE).
4. KOSTYUKOV, Igor (a.k.a. KOSTYUKOV, Igor Olegovich); DOB 21 Feb 1961; Passport 100130896 (Russia); alt. Passport 100132253 (Russia); First Deputy Chief of GRU (individual) [CYBER2] (Linked To: MAIN INTELLIGENCE DIRECTORATE).

Entities

1. AUTONOMOUS NONCOMMERCIAL ORGANIZATION PROFESSIONAL ASSOCIATION OF DESIGNERS OF DATA PROCESSING SYSTEMS (a.k.a. ANO PO KSI), Prospekt Mira D 68, Str 1A, Moscow 129110, Russia; Dom 3, Lazurnaya Ulitsa, Solnechnogorskiy Raion, Andreyevka, Moscow Region 141551, Russia; Registration ID 1027739734098 (Russia); Tax ID No. 7702285945 (Russia) [CYBER2].
2. SPECIAL TECHNOLOGY CENTER (a.k.a. STC, LTD), Gzhatskaya 21 k2, St. Petersburg, Russia; 21–2 Gzhatskaya Street, St. Petersburg, Russia; Web site stc-spb.ru; Email Address *stcspb1@mail.ru;* Tax ID No. 7802170553 (Russia) [CYBER2].
3. ZORSECURITY (f.k.a. ESAGE LAB; a.k.a. TSOR SECURITY), Luzhnetskaya Embankment 2⁄4, Building 17, Office 444, Moscow 119270, Russia; Registration ID 1127746601817 (Russia); Tax ID No. 7704813260 (Russia); alt. Tax ID No. 7704010041 (Russia) [CYBER2].
4. MAIN INTELLIGENCE DIRECTORATE (a.k.a. GLAVNOE RAZVEDYVATEL'NOE UPRAVLENIE (Cyrillic: ГЛАВНОЕ РАЗВЕДЫВАТЕЛЬНОЕ УПРАВЛЕНИЕ); a.k.a. GRU; a.k.a. MAIN INTELLIGENCE DEPARTMENT), Khoroshevskoye Shosse 76, Khodinka, Moscow, Russia; Ministry of Defence of the Russian Federation, Frunzenskaya nab., 22/2, Moscow 119160, Russia [CYBER2].
5. FEDERAL SECURITY SERVICE (a.k.a. FEDERALNAYA SLUZHBA BEZOPASNOSTI; a.k.a. FSB), Ulitsa Kuznetskiy Most, Dom 22, Moscow 107031, Russia; Lubyanskaya Ploschad, Dom 2, Moscow 107031, Russia [CYBER2].

Dated: December 30, 2016.

John E. Smith,

Acting Director, Office of Foreign Assets Control.

[FR Doc. 2016–32016 Filed 1–4–17; 8:45 am]

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DEPARTMENT OF THE TREASURY

Office of Foreign Assets Control

Sanctions Actions Pursuant to Executive Order 13694

AGENCY: Office of Foreign Assets Control, Treasury.

ACTION: Notice.

SUMMARY: The U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC) is publishing the names of two individuals whose property and interests in property are blocked pursuant to Executive Order (E.O.) 13694, as amended by E.O. 13757, and whose names have been added to OFAC's list of Specially Designated Nationals and Blocked Persons (SDN List).

DATES: OFAC's actions described in this notice were effective December 29, 2016.

FOR FURTHER INFORMATION CONTACT: Assistant Director for Global Targeting, tel.: 202–622–2420, Assistant Director for Sanctions Compliance & Evaluation, tel.: 202–622–2490, Assistant Director for Licensing, tel.: 202–622–2480, Office of Foreign Assets Control, or Office of Chief Counsel (Foreign Assets Control), tel.: 202–622–2410, Office of the General Counsel, Department of the Treasury (not toll free numbers).

SUPPLEMENTARY INFORMATION:

Electronic and Facsimile Availability

The SDN List and additional information concerning OFAC sanctions programs are available from OFAC's Web site (*www.treasury.gov/ofac*).

Notice of OFAC Actions

On December 29, 2016, OFAC blocked the property and interests in property of the following two individuals pursuant to E.O. 13694, ''Blocking the Property of Certain Persons Engaging in Significant Malicious Cyber-Enabled Activities,'' as amended by E.O. 13757, ''Taking Additional Steps to Address the National Emergency with Respect to Significant Malicious Cyber-Enabled Activities'':

Individuals

1. BOGACHEV, Evgeniy Mikhaylovich (a.k.a. BOGACHEV, Evgeniy Mikhailovich; a.k.a. ''Lastik''; a.k.a. ''lucky12345''; a.k.a. ''Monstr''; a.k.a. ''Pollingsoon''; a.k.a. ''Slavik''), Lermontova Str., 120–101, Anapa, Russia; DOB 28 Oct 1983 (individual) [CYBER2].
2. BELAN, Aleksey Alekseyevich (a.k.a. Abyr Valgov; a.k.a. BELAN, Aleksei; a.k.a. BELAN, Aleksey Alexseyevich; a.k.a. BELAN, Alexsei; a.k.a. BELAN, Alexsey; a.k.a. ''Abyrvaig''; a.k.a. ''Abyrvalg''; a.k.a. ''Anthony Anthony''; a.k.a. ''Fedyunya''; a.k.a. ''M4G''; a.k.a. ''Mag''; a.k.a. ''Mage''; a.k.a. ''Magg''; a.k.a. ''Moy.Yawik''; a.k.a. ''Mrmagister''), 21 Karyakina St., Apartment 205, Krasnodar, Russia; DOB 27 Jun 1987; POB Riga, Latvia; nationality Latvia; Passport RU0313455106 (Russia); alt. Passport 0307609477 (Russia) (individual) [CYBER2].

Dated: December 30, 2016.

John E. Smith,

Acting Director, Office of Foreign Assets Control.

[FR Doc. 2016–32017 Filed 1–4–17; 8:45 am]

BILLING CODE P

FEDERAL REGISTER

Vol. 82 Thursday,

No. 3 January 5, 2017

Part II

Department of Energy

10 CFR Parts 429 and 430

Energy Conservation Program: Test Procedures for Central Air Conditioners and Heat Pumps; Final Rule

DEPARTMENT OF ENERGY

10 CFR Parts 429 and 430

[Docket No. EERE–2016–BT–TP–0029]

RIN 1904–AD71

Energy Conservation Program: Test Procedures for Central Air Conditioners and Heat Pumps

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Final rule.

SUMMARY: On August 24, 2016, the U.S. Department of Energy (DOE) published a supplemental notice of proposed rulemaking (SNOPR) to amend the test procedure for central air conditioners and heat pumps. That SNOPR serves as the basis for this final rule. This final rule amends the test procedure and specific certification, compliance, and enforcement provisions related to this product. In this final rule, DOE makes two sets of amendments to the test procedure: Amendments to appendix M that would be required as the basis for making efficiency representations starting 180 days after final rule publication and a new appendix M1 that would be the basis for making efficiency representations as of the compliance date for any amended energy conservation standards. The new appendix M1 establishes new efficiency metrics SEER2, EER2, and HSPF2 that are based on the current efficiency metrics for cooling and heating performance, but generally have different numerical values than the current metrics. Broadly speaking, the amendments address off-mode test procedures, test set-up and fan delays, external static pressure conditions for testing, represented values for CAC/HP that are distributed in commerce with multiple refrigerants, the methodology for testing and calculating heating performance, and testing of variable-speed systems.

DATES: The effective date of this rule is February 6, 2017. The final rule changes of appendix M will be mandatory for representations of efficiency starting July 5, 2017. Representations using appendix M1 will be mandatory starting January 1, 2023. The incorporation by reference of certain publications listed in Appendix M1 is approved by the Director of the Federal Register on February 6, 2017 February 6, 2017. The incorporation by reference of certain publications listed in Appendix M was approved by the Director of the Federal Register as of July 8, 2016.

ADDRESSES: The docket, which includes **Federal Register** notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at *regulations.gov*. All documents in the docket are listed in the *regulations.gov* index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

The docket Web page can be found at *https://www.regulations.gov/docket?D=EERE-2016-BT-TP-0029*. The docket Web page will contain simple instruction on how to access all documents, including public comments, in the docket.

FOR FURTHER INFORMATION CONTACT:

Ashley Armstrong, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, EE–2J, 1000 Independence Avenue SW., Washington, DC 20585–0121. Telephone: (202) 586–6590. Email: *Ashley.Armstrong@ee.doe.gov*.

Johanna Jochum, U.S. Department of Energy, Office of the General Counsel, GC–33, 1000 Independence Avenue SW., Washington, DC, 20585–0121. Telephone: (202) 287–6307. Email: *Johanna.Jochum@hq.doe.gov*.

For further information on how to review public comments and the docket contact the Appliance and Equipment Standards Program staff at (202) 586–6636 or by email: *CACHeatPump2016TP0029@ee.doe.gov*.

SUPPLEMENTARY INFORMATION: This final rule incorporates by reference into part 430 specific sections, figures, and tables in the following industry standards:

(1) ANSI/AHRI 210/240–2008 with Addenda 1 and 2, (''AHRI 210/240–2008''): 2008 Standard for Performance Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment, ANSI approved October 27, 2011;

(2) ANSI/AHRI 1230–2010 with Addendum 2, (''AHRI 1230–2010''): 2010 Standard for Performance Rating of Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment, ANSI approved August 2, 2010.

Copies of AHRI 210/240–2008 and AHRI 1230–2010 can be obtained from the Air-Conditioning, Heating, and Refrigeration Institute, 2111 Wilson Boulevard, Suite 500, Arlington, VA 22201, USA, 703–524–8800, or by going to *http://www.ahrinet.org/site/686/Standards/HVACR-Industry-Standards/Search-Standards.*

(3) ANSI/ASHRAE 23.1–2010, (''ASHRAE 23.1–2010''): Methods of Testing for Rating the Performance of Positive Displacement Refrigerant Compressors and Condensing Units that Operate at Subcritical Temperatures of the Refrigerant, ANSI approved January 28, 2010;

(4) ANSI/ASHRAE Standard 37–2009, (''ANSI/ASHRAE 37–2009''), Methods of Testing for Rating Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment, ANSI approved June 25, 2009;

(5) ANSI/ASHRAE 41.1–2013, (''ANSI/ASHRAE 41.1–2013''): Standard Method for Temperature Measurement, ANSI approved January 30, 2013;

(6) ANSI/ASHRAE 41.6–2014, (''ASHRAE 41.6–2014''): Standard Method for Humidity Measurement, ANSI approved July 3, 2014;

(7) ANSI/ASHRAE 41.9–2011, (''ASHRAE 41.9–2011''): Standard Methods for Volatile-Refrigerant Mass Flow Measurements Using Calorimeters, ANSI approved February 3, 2011;

(8) ANSI/ASHRAE 116–2010, (''ASHRAE 116–2010''): Methods of Testing for Rating Seasonal Efficiency of Unitary Air Conditioners and Heat Pumps, ANSI approved February 24, 2010;

(9) ANSI/ASHRAE 41.2–1987 (Reaffirmed 1992), (''ASHRAE 41.2–1987 (RA 1992)''): ''Standard Methods for Laboratory Airflow Measurement'', ANSI approved April 20, 1992.

Copies of ASHRAE 23.1–2010, ANSI/ASHRAE 37–2009, ANSI/ASHRAE 41.1–2013, ASHRAE 41.6–2014, ASHRAE 41.9–2011, ASHRAE 116–2010, and ASHRAE 41.2–1987 (RA 1992) can be purchased from ASHRAE's Web site at *https://www.ashrae.org/resources--publications*.

(10) ANSI/AMCA 210–2007, ANSI/ASHRAE 51–2007, (''AMCA 210–2007'') Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating, ANSI approved August 17, 2007.

Copies of AMCA 210–2007 can be purchased from AMCA's Web site at *http://www.amca.org/store/index.php*.

For a further discussion of these standards, see section IV.M.

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I. Authority and Background

A. Authority

Title III, Part B [1] of the Energy Policy and Conservation Act of 1975 (''EPCA'' or ''the Act''), Public Law 94–163 (42 U.S.C. 6291–6309, as codified) sets forth a variety of provisions designed to improve energy efficiency and established the Energy Conservation Program for Consumer Products Other Than Automobiles.[2] These products include central air conditioners and central air conditioning heat pumps,[3] (single-phase [4] with rated cooling capacities less than 65,000 British thermal units per hour (Btu/h)), which are the focus of this Final Rule. (42 U.S.C. 6291(1)–(2), (21) and 6292(a)(3))

Under EPCA, DOE's energy conservation program generally consists of four parts: (1) Testing; (2) labeling; (3) Federal energy conservation standards; and (4) certification, compliance, and enforcement. The testing requirements consist of test procedures that manufacturers of covered products must use as the basis of: (1) Certifying to DOE that their products comply with applicable energy conservation standards adopted pursuant to EPCA, and (2) making other representations about the efficiency of those products. (42 U.S.C. 6293(c); 42 U.S.C. 6295(s)) Similarly, DOE must use these test procedures to determine whether covered products comply with any relevant standards promulgated under EPCA. (42 U.S.C. 6295(s))

EPCA sets forth criteria and procedures DOE must follow when prescribing or amending test procedures for covered products. (42 U.S.C. 6293(b)(3)) EPCA provides, in relevant part, that any test procedures prescribed or amended under this section shall be reasonably designed to produce test results which measure the energy efficiency, energy use, or estimated annual operating cost of a covered product during a representative average use cycle or period of use, and shall not be unduly burdensome to conduct. *Id.*

In addition, if DOE determines that a test procedure amendment is warranted, it must publish proposed test procedures and offer the public an opportunity to present oral and written comments on them. (42 U.S.C. 6293(b)(2)) Finally, in any rulemaking to amend a test procedure, DOE must determine to what extent, if any, the amended test procedure would alter the measured energy efficiency of any covered product as determined under the existing test procedure. (42 U.S.C. 6293(e)(1))

The Energy Independence and Security Act of 2007 (EISA 2007), Public Law 110–140, amended EPCA to require that, at least once every 7 years, DOE must review test procedures for all covered products and either amend the test procedures (if the Secretary determines that amended test procedures would more accurately or fully comply with the requirements of 42 U.S.C. 6293(b)(3)) or publish a notice in the **Federal Register** of any determination not to amend a test procedure. (42 U.S.C. 6293(b)(1)(A))

DOE's existing test procedures for CAC/HP adopted pursuant to these provisions appear under Title 10 of the Code of Federal Regulations (CFR) part 430, subpart B, appendix M (''Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps''). These procedures establish the currently permitted means for determining energy efficiency and annual energy consumption for CAC/HP. The procedures established in the new appendix M1 include new efficiency metrics to represent cooling and heating performance whose values will be altered as compared to the current metrics. The new metrics include seasonal energy efficiency ratio 2 (SEER2), energy efficiency ratio 2 (EER2), and heating seasonal performance factor 2 (HSPF2). Use of the test procedures of appendix M1 will become mandatory to demonstrate compliance on the compliance date of revised energy conservation standards.

Section 310 of EISA 2007 established that the Department's test procedures for all covered products must account for standby mode and off mode energy consumption. (42 U.S.C. 6295(gg)(2)(A)) For CAC/HP, standby mode is

[1] For editorial reasons, Part B was codified as Part A in the U.S. Code.

[2] All references to EPCA in this document refer to the statute as amended through the Energy Efficiency Improvement Act of 2015, Public Law 114–11 (Apr. 30, 2015).

[3] This rulemaking uses the term ''CAC/HP'' to refer specifically to central air conditioners (which include heat pumps) as defined by EPCA. 42 U.S.C. 6291(21.)

[4] Where this rulemaking uses the term ''CAC/HP'', they are in reference specifically to central air conditioners and heat pumps as defined by EPCA.

incorporated into the SEER and HSPF metrics, while off mode power consumption is separately regulated. This final rule includes changes relevant to the determination of both SEER and HSPF (including standby mode) and off mode power consumption.

B. Background

DOE initiated a round of test procedure revisions for CAC/HP by publishing a notice of proposed rulemaking in the **Federal Register** on June 2, 2010 (June 2010 NOPR; 75 FR 31223). Subsequently, DOE published several supplemental notices of proposed rulemaking (SNOPRs) on April 1, 2011 (April 2011 SNOPR; 76 FR 18105), on October 24, 2011 (October 2011 SNOPR: 76 FR 65616), and on November 9, 2015 (November 2015 SNOPR; 80 FR 69277) in response to comments received and to address additional needs for test procedure revisions. The June 2010 NOPR and the subsequent SNOPRs addressed a broad range of test procedure issues. On June 8, 2016, DOE published a test procedure final rule (June 2016 final rule) that finalized test procedure amendments associated with many but not all of these issues. 81 FR 36991.

On November 5, 2014, DOE published a request for information for energy conservation standards (ECS) for CAC/HP (November 2014 ECS RFI). 79 FR 65603. In response, several stakeholders provided comments suggesting that DOE amend the current test procedure. The November 2015 SNOPR addressed those test procedure-related comments, but, as mentioned in this preamble, not all of the related issues were resolved in the June 2016 final rule.

On July 14, 2015, DOE published a notice of intent to form a Working Group to negotiate a NOPR for energy conservation standards for CAC/HP and requested nominations from parties interested in serving as members of the Working Group. 80 FR 40938. The Working Group, which ultimately consisted of 15 members in addition to one member from Appliance Standards and Rulemaking Federal Advisory Committee (ASRAC) and one DOE representative, identified a number of issues related to testing and certification. The term sheet summarizing the Working Group recommendations included several recommendations associated with test procedures. (CAC ECS: ASRAC Term Sheet, No. 76) [5]

On August 24, 2016 DOE published a SNOPR (August 2016 SNOPR) proposing several amendments to the test procedure and to certification, compliance, and enforcement provisions, including a proposal to establish a new appendix M1 to be used for testing under any new energy conservation standard. 81 FR 58164. That SNOPR addressed issues not resolved by the June 2016 final rule and also proposed test procedure amendments to implement several of the items summarized in the ASRAC Working Group Term Sheet.

II. Synopsis of the Final Rule

In this final rule, DOE revises the certification requirements and test procedure for CAC/HP based on public comment on various published materials and the ASRAC negotiation process discussed in section I.B. This final rule establishes two sets of test procedure changes: One set of changes to appendix M (effective 30 days after publication of a final rule and required for testing and determining compliance with current energy conservation standards); and another set of changes to create a new appendix M1 that would be used for testing to demonstrate compliance with any amended energy conservation standards (agreed compliance date of January 1, 2023, by the Working Group in the CAC rulemaking negotiations (CAC ECS: ASRAC Term Sheet, No. 76)). With the exceptions discussed in sections III.B.3 and III.B.7, the changes to appendix M do not alter measured efficiency. However, the new appendix M1 establishes new efficiency metrics for cooling and heating performance, SEER2, EER2, and HSPF2.

In this final rule, DOE makes the following changes to certification requirements:

(1) Codifying the CAC/HP ECS Working Group's recommendation regarding delayed implementation of testing to demonstrate compliance with amended energy conservation standards;

(2) Relaxing the requirement that a split system's tested combination be a high sales volume combination;

(3) Revising requirements for certification of multi-split systems in light of the adoption of multiple categories of duct pressure drop that the indoor units can provide;

(4) Making explicit certain provisions of the service coil definition;

(5) Revising the certification of separate individual combinations within the same basic model for each refrigerant that can be used in a model of split system outdoor unit and certification of details regarding the indoor units with which unmatched outdoor units are tested;

(6) Revising representation limitations for independent coil manufacturers;

(7) Revising the certification of low-capacity lockout for air conditioner and heat pumps with two capacity compressors;

(8) Revising the requirements for represented values of cooling and heating capacity; and

(9) Adding new efficiency metrics SEER2, EER2, and HSPF2 to reflect the changes in the test procedure that result in significant change in the efficiency metric values.

DOE implements the following changes to appendix M:

(1) Requiring a limit on the internal volume of lines and devices connected to measure pressure at refrigerant circuit;

(2) Revising the method to calculate EER and coefficient of performance (COP) for variable-speed units for calculating performance at intermediate compressor speeds;

(3) Requiring a 30-minute test without the outside-air apparatus connected (a ''free outdoor air'' test) to be the official test as part of all cooling and heating mode tests which use the outdoor air enthalpy method as the secondary measurement;

(4) Relaxing the requirement for secondary capacity checks, requiring instead use of a secondary capacity measurement that agrees with the primary capacity measurement to within 6 percent only for the cooling full load test and, for heat pumps, for the heating full load test;

(5) Revising the certification of the indoor fan off delay used for coil-only tests;

(6) Modifying the test procedure for variable-speed heat pumps; and

(7) Modifying the part load testing requirement of VRF multi-split systems and test unit installation requirement of cased coil insulation and sealing.

DOE adopts the following provisions for new appendix M1:

[5] This final rule addresses proposals and comments from two rulemakings: (1) Stakeholder comments and proposals regarding the CAC test procedure (CAC TP: Docket No. EERE–2009–BT–TP–0004); and (2) stakeholder comments and proposals regarding the CAC energy conservation standard from the Working Group (CAC ECS: Docket No. EERE–2014–BT–STD–0048). Comments received through documents located in the test procedure docket are identified by ''CAC TP'' preceding the comment citation. Comments received through documents located in the energy conservation standard docket (EERE–2014–BT–STD–0048) are identified by ''CAC ECS'' preceding the comment citation. Further, comments specifically received during the CAC/HP ECS Working Group meetings are identified by ''CAC ECS: ASRAC Public Meeting'' preceding the comment citation.

(1) New higher external static pressure requirements for all units, including unique minimum external static pressure requirements for mobile home systems, ceiling-mount and wall-mount systems, low- and mid-static multi-split systems, space-constrained systems, and small-duct, high-velocity systems;

(2) A unique default fan power for rating mobile home coil-only units and new default fan power for all other coil-only units;

(3) Revisions to the heating load line equation in the calculation of the heating mode efficiency metric, HSPF2;

(4) Amendments to the test procedures for variable-speed heat pumps that change speed at lower ambient temperatures and add a 5 °F heating mode test option for calculating full-speed performance below 17 °F; and

(5) Establishment of a 4-hour or 8-hour delay time before the power measurement for units that require the crankcase heating system to reach thermal equilibrium after setting test conditions.

The test procedure amendments to appendix M for subpart B to 10 CFR part 430 established in this final rule pertaining to the efficiency of CAC/HP will be effective 30 days after publication in the **Federal Register** (referred to as the ''effective date''). Pursuant to EPCA, manufacturers of covered products are required to use the applicable test procedure as the basis for determining that their products comply with the applicable energy conservation standards. (42 U.S.C. 6295(s)) 180 days after publication of a final rule, any representations made with respect to the energy use or efficiency of CAC/HPs are required to be made in accordance with the results of testing pursuant to the amended test procedures. (42 U.S.C. 6293(c)(2))

The test procedures established in this final rule for appendix M1 to subpart B of 10 CFR part 430 pertaining to the efficiency of CAC/HP are effective 30 days after publication in the **Federal Register**. The appendix M1 procedures will be required as the basis for determining that CAC/HP comply with any amended energy conservation standards (if adopted in the concurrent CAC/HP energy conservation standards rulemaking) and for representing efficiency as of the compliance date for those amended energy conservation standards.

DOE revises the test procedure and requirements for certification, compliance, and enforcement in this final rule effective on February 6, 2017. The amended test procedure of appendix M is mandatory for representations of efficiency as of July 5, 2017. The new test procedure of appendix M1 is mandatory for representations of efficiency as of January 1, 2023.

III. Discussion

This section discusses the revisions to the certification requirements and test procedure that DOE adopts in this final rule.

A. Testing, Rating, and Compliance of Basic Models of Central Air Conditioners and Heat Pumps

1. Representation Accommodation

In the August 2016 SNOPR, DOE proposed to implement the following recommendations from the CAC/HP ECS Working Group regarding representations for split systems in 10 CFR 429.16 and 429.70:

○ DOE will implement the following accommodation for representative values of split system air conditioners and heat pumps based on the M1 methodology:

○ By January 1, 2023, manufacturers of single-split systems must validate an AEDM that is representative of the amended M1 test procedure by:

▪ Testing a single-unit sample for 20-percent of the basic models certified.

▪ The predicted performance as simulated by the AEDM must be within 5 percent of the performance resulting from the test of each of the models.

▪ Although DOE will not require that a full complement of testing be completed by January 1, 2023, manufacturers are responsible for ensuring their representations are appropriate and that the models being distributed in commerce meet the applicable standards (without a 5% tolerance).

○ By January 1, 2023, manufacturers must either determine representative values for each combination of single-split-system CAC/HP based on the M1 test procedures using a validated AEDM or through testing and the applicable sampling plan.

○ By January 1, 2023, manufacturers of multi-split, multi-circuit, or multi-head mini-split systems must determine representative values for each basic model through testing and the applicable sampling plan.

○ By July 1, 2024, each model of condensing unit of split system CAC/HP must have at least 1 combination whose rating is based on testing using the M1 test procedure and the applicable sampling plan. 81 FR at 58167 (Aug. 24, 2016)

Lennox and AHRI commented that they supported DOE's proposal, although AHRI noted it supported DOE's proposal with certain exceptions. (Lennox, No. 25 at p. 2; AHRI, No. 27 at p. 1) While AHRI did not note the exceptions, DOE assumes these may be related to their comments regarding test requirements for two-stage air conditioners (Id at p. 2), effective dates for appendix M in the June 2016 Final Rule and this final rule (Id at p. 8), and AEDM options for multi-split systems (Id at p. 20). These issues are discussed separately in III.D and III.E. As these exceptions are tangential to the original proposal, DOE has adopted the accommodations as proposed.

2. Highest Sales Volume Requirement

In the August 2016 SNOPR, based on recommendations by the CAC/HP ECS Working Group, DOE proposed removing the requirement for single-split-system air conditioners that the individual combination required for testing be the highest sales volume combination (HSVC). Specifically, DOE proposed that for every basic model, a manufacturer must test the model of outdoor unit with a model of indoor unit.[6] 81 FR at 58202 (Aug. 24, 2016)

ACEEE, NRDC, ASAP, and NEEA supported DOE's proposal to adopt the CAC/HP ECS Working Group recommendations regarding removing the HSVC, as described in the SNOPR. (ACEEE, NRDC, and ASAP, No. 33 at p. 8; NEEA, No. 35 at p. 1) DOE received no other comment on this issue. Therefore, DOE adopts this proposal in this final rule. DOE notes that some stakeholders commented on related items that were finalized in the June 2016 Final Rule. These are discussed in section III.E.1.

3. Determination of Represented Values for Multi-Split, Multi-Circuit, and Multi-Head Mini-Split Systems

In the August 2016 SNOPR, DOE proposed that multi-split, multi-head mini-split, and multi-circuit systems could be tested and rated with five kinds of indoor units: Non-ducted, low-static ducted, mid-static ducted, conventional ducted, or small-duct, high velocity (SDHV). DOE proposed that when determining represented values (including certifying compliance with amended energy conservation standards), at a minimum, a manufacturer must test and rate a ''tested combination'' composed entirely of non-ducted units. Under the proposed rule, if a manufacturer were to offer the model of outdoor unit with

[6] As adopted in the June 2016 Final Rule, for single-split-system air conditioners with single-stage or two-stage compressors, the model of indoor unit must be coil-only.

models of low-static, mid-static, and/or conventional ducted indoor units, the manufacturer would be required, at a minimum, also to test and rate a second ''tested combination'' with the highest static variety of indoor unit offered. The manufacturer would also be allowed to choose to test and rate additional ''tested combinations'' composed of the lower static varieties. In each case, the manufacturer would test with the appropriate external static pressure. DOE did not propose use of AEDMs for these systems. 81 FR at 58169 (Aug. 24, 2016)

DOE also proposed to maintain its requirement from the June 2016 final rule that, if a manufacturer also sells a model of outdoor unit with SDHV indoor units, the manufacturer must test and rate the SDHV system (*i.e.,* test a combination with indoor units that all have SDHV pressure capability). DOE also proposed to continue to allow mix-match ratings across any two of the five varieties by taking a straight average of the ratings of the individual varieties, and to allow ratings of individual combinations through testing. 81 FR at 58169 (Aug. 24, 2016)

NEEA commented that they supported DOE's proposals regarding certification of multi-split, multi-circuit, and multi-head mini-split systems. (NEEA, No. 35 at p. 1–2) Lennox and Nortek commented that they supported DOE's proposals regarding tested combinations for multi-split, multi-head mini-split, and multi-circuit systems. (Lennox, No. 25 at p. 3–4; Nortek, No. 22 at p. 3) AHRI commented that they supported DOE's proposals regarding tested combinations for multi-split and multi-circuit systems. (AHRI, No. 27 at p. 2)

AHRI and Mitsubishi commented that they were concerned with DOE's proposal to add low-static and mid-static testing requirements to appendix M. They commented that the ''low-static'' and ''mid-static'' terminology and the associated testing requirements were negotiated for appendix M1, and implementing this requirement before the effective date of the 2023 standard would not be in alignment with the Working Group's recommendation. (AHRI, No. 27 at p. 2–3; Mitsubishi, No. 29 at p. 2)

DOE notes that it intended the low-static and mid-static requirements to apply to appendix M1 only. In the August 2016 SNOPR, 10 CFR 429.16(a)(1) and (b)(2)(i) included tables regarding determining represented values and minimum testing requirements. In both of these tables, DOE only discussed the static variety in regards to testing in accordance with M1 or making representations on and after January 1, 2023. In addition, the definitions for the static varieties are only found in appendix M1. However, DOE acknowledges that 10 CFR 429.16(c)(3) may have included unclear language on this topic. DOE has modified this language in this final rule.

AHRI and Mitsubishi commented that multi-head mini-split systems do not belong in the requirements for multi-split and multi-circuit systems because they operate as 1-to-1 combinations, and it is not possible to turn off one indoor unit for testing. In addition, they stated that these systems do not have multiple-ducted and non-ducted combinations. AHRI and Mitsubishi requested that DOE remove multi-head mini-split systems from non-applicable testing requirements and other sections and instead include multi-head mini-split in the same line as ''Single-Split-System'' in the table in 10 CFR 429.16(b)(2). (AHRI, No. 27 at p. 2; Mitsubishi, No. 29 at p. 1–2; Mitsubishi, Public Meeting Transcript, No. 20 at p. 113–114)

In response, DOE notes that, though the August 2016 SNOPR proposed additional requirements regarding tested combinations, the certification and testing requirements for multi-head mini-split systems became associated with the testing requirements for multi-split and multi-circuit systems in the June 2016 final rule, and were not proposed in the August 2016 SNOPR. The only related change proposed in the August 2016 SNOPR pertains to requirements for different static varieties. Furthermore, although multi-head mini-split systems are grouped with multi-split and multi-circuit systems in the certification requirements, appendix M and M1 do not require this equipment to turn off any indoor units during testing. In addition, DOE does not believe, based on the information provided by AHRI and Mitsubishi, that the proposed language in 10 CFR 429.16 presents a problem for multi-head mini-split systems. The certification and testing requirements allow only non-ducted representations if that is all that is sold, or representations of only one kind of ducted combination, if that is all that is sold. The fact that multi-head mini-split systems are sold in few combinations should not preclude manufacturers from meeting these requirements. For these reasons, DOE is not removing multi-head mini-splits from its grouping with multi-split and multi-circuit systems in 10 CFR 429.16.

DOE received no other comment on the proposals in the August 2016 SNOPR for determining represented values for multi-split, multi-circuit, and multi-head mini-split systems and DOE adopts all of the proposed requirements in this final rule. DOE also notes that in the August 2016 SNOPR, DOE omitted mention in 10 CFR 429.16(a)(1) that non-SDHV multi-split, multi-circuit, and multi-head mini-split systems may also include space-constrained units, so DOE has clarified that in this final rule.

4. Service Coil Definition

In the June 2016 final rule, to distinguish newly installed cased and uncased coils from replacement cased and uncased coils, DOE added a definition for service coils and explicitly excluded them from indoor units in the indoor unit definition.

In the August 2016 SNOPR, DOE proposed to modify the adopted definition of service coil to more explicitly define what ''labeled accordingly'' meant. Specifically, DOE proposed that a manufacturer must designate a service coil as ''for indoor coil replacement only'' on the nameplate and in manufacturer product and technical literature. In addition, DOE proposed that the model number for any service coil must include some mechanism (*e.g.,* an additional letter or number) for differentiating a service coil from a coil intended for an indoor unit. 81 FR at 58169–58170 (Aug. 24, 2016)

AHRI, Nortek, and Ingersoll Rand commented that they support DOE's proposal. (AHRI, No. 27 at p. 3, Nortek, No. 22 at p. 3, Ingersoll Rand, No. 38 at p. 2) DOE received no other comments on this issue. Therefore, DOE is adopting this proposal in this final rule.

5. Efficiency Representations of Split-Systems for Multiple Refrigerants

DOE made numerous proposals in the August 2016 SNOPR regarding efficiency representations for multiple refrigerants, and they elicited voluminous and multi-faceted responses. The proposals themselves can be divided into three broad categories, including (1) representations for multiple refrigerants, (2) certification report requirements for outdoor units with no match, and (3) clarifying what outdoor units must have no-match efficiency representations. By far most of the responses addressed the third category—discussion thereof has been divided up into the following sub-topics: DOE authority, altering the measured efficiency, specific no-match criteria, and normalized gross indoor fin surface (NGIFS) (addressed in sections III.A.5.c through III.A.5.f).

a. Representations for Multiple Refrigerants

In the August 2016 SNOPR, to address instances in which the manufacturer indicates that more than one refrigerant is acceptable for use in a unit, DOE proposed that a split-system air conditioner or heat pump, including an outdoor unit with no match, must be certified as a separate individual combination for every acceptable refrigerant. Specifically, each individual combination would be certified under the same basic model. DOE's existing requirements for basic models would continue to apply; therefore, if an individual combination or an outdoor unit with no match fails to meet DOE's energy conservation standards using any refrigerant indicated by the manufacturer to be acceptable, then the entire basic model would fail. DOE also proposed that manufacturers must certify the refrigerants for every individual combination that is distributed in commerce. For models where the manufacturer only indicates one acceptable refrigerant, this proposal would simply entail certifying to DOE the refrigerant for which the model is designed. Finally, DOE proposed that any outdoor unit model that has certain characteristics (*e.g.,* if it is distributed in commerce without a specific refrigerant), a manufacturer must determine the represented value as an outdoor unit with no match. For some outdoor units, the proposal called for representations both as an outdoor unit with no match and as part of a combination, both as part of the same basic model. 81 FR at 58170 (Aug. 24, 2016).

The August 2016 SNOPR proposed that a refrigerant's acceptability for use in an outdoor unit would be based on its being covered under the unit's warranty, either explicitly or based on refrigerant characteristics. *Id.* at 58201.

AHRI, Nortek, Ingersoll Rand, and Carrier/UTC supported DOE's proposal that manufacturers should be required to certify efficiency ratings for all refrigerants that they have designed their equipment to use. (AHRI, No. 27 at p. 3; Nortek, No. 22 at p. 3; Ingersoll Rand, No. 38 at p. 2; Carrier/UTC, No. 36 at p. 3) AHRI, Nortek, and JCI suggested that DOE revise the requirement so that, if a manufacturer approves an air conditioner or heat pump for multiple refrigerants by listing them on the nameplate, such a product is subject to DOE certification and enforcement requirements for each approved refrigerant. AHRI, Nortek, and JCI commented that manufacturers should have the option to rate all compatible refrigerants as one basic model with the same efficiency rating, or to list different efficiencies for different refrigerants as separate basic models. AHRI, Nortek, and JCI contend that the determination of different efficiency ratings for different refrigerants should be allowed based on testing, or the appropriate use of AEDMs. (AHRI, No. 27 at p. 6; Nortek, No. 22 at p. 6; JCI, No. 24 at p. 9) Ingersoll Rand commented similarly. (Ingersoll Rand, No. 38 at p. 2)

ACEEE, NRDC, and ASAP commented that they support the proposed requirement to assign separate model numbers to systems designed for more than one refrigerant. (ACEEE, NRDC, and ASAP, No. 33 at p. 4; Lennox, No. 25 at p. 5)

Goodman commented that they agreed with DOE's proposal in principle, but were concerned that clarification regarding the refrigerants that are approved for use in a product may not always be clear, and that a refrigerant may be used in the field if information about approved refrigerants is weak or not readily identifiable. Goodman proposed regulatory text to address this issue, emphasizing reliance on a product's nameplate to indicate which refrigerants are approved. Specifically, the suggestion was that any refrigerant listed on the unit nameplate of any portion of the basic model be considered to be approved. Further, Goodman's suggestion also includes as ''approved for use'' those non-zero ozone-depleting refrigerants with similar thermophysical properties to a refrigerant listed on the nameplate, (Goodman, No. 39, p. 2–3)

In response to these comments DOE has revised the requirements so that indication of which refrigerants require certification of performance is based on the unit nameplate that is required by safety standards (*e.g.,* UL 1995) to list all approved refrigerants (see newly designated paragraph (a)(3) of section 10 CFR 429.16).

DOE does not understand Goodman's reference to ''any portion of the basic model''. If an individual combination of a basic model includes an indoor unit whose nameplate lists a refrigerant that is not listed on the outdoor unit's nameplate, such listing on the indoor unit's nameplate would not make the refrigerant approved for use in the outdoor unit. The refrigerant would therefore not be approved for use with that individual combination and presumably would not be required for certification with the basic model. Hence, if listing on the unit's nameplate is a sufficiently strong indication of which refrigerants are approved for use, it is not clear that any refrigerant listed on the indoor unit's nameplate but not on the outdoor unit's nameplate should be considered approved for use with the outdoor unit. Consequently, DOE has not included the ''any portion of the basic model'' language in its requirements. DOE has not adopted this language due to manufacturers' representations that the refrigerant listings on the nameplate are respected sufficiently that installers would not use a refrigerant in a system if it is not listed on the outdoor unit's nameplate.

DOE also is not convinced that the ''approved refrigerants'' need to include any non-zero ozone depletion potential refrigerant that has similar thermophysical properties to a refrigerant approved for use on the unit nameplate. DOE is only aware of HCFC-22 as a non-zero ozone depletion refrigerant that is used for split system air conditioners—no such alternatives are approved in the EPA SNAP list for residential and light commercial air conditioning and heat pumps.[7] HCFC-22 and refrigerants with properties similar to HCFC-22, whether non-zero ozone depletion or not, are addressed separately in the no-match requirements (see section III.A.5.e).

Additionally, in the August 2016 SNOPR, DOE did not intend to require testing of each refrigerant. In this final rule, DOE is clarifying the requirement to allow the manufacturer to test the unit with one refrigerant and to use an AEDM for other refrigerants. This clarification appears in paragraph (a)(3) of § 429.16, but DOE has also modified paragraph (c)(2) of this section to emphasize this clarification for outdoor units with no match. Additionally, in this final rule, DOE is adding a provision in paragraph (a)(3) of § 429.16 to allow grouping of refrigerants in reporting provided that the representative values represent the least efficient refrigerant. In response to ACEEE, NRDC, and ASAP, DOE does not believe the additional reporting burden of requiring that each refrigerant have its own model number and efficiency representation is justified if the rating represents the least efficient refrigerant. In response to AHRI and Nortek, DOE is requiring that all of the refrigerants for the given model of outdoor unit be part of the same basic model. This is consistent with the basic model definition adopted in the June 2016 final rule, which groups all combinations with a given model of

[7] *https://www.epa.gov/snap/acceptable-substitutes-residential-and-light-commercial-air-conditioning-and-heat-pumps.*

outdoor unit into the same basic model. 81 FR at 37053 (June 8, 2016).

b. Certification Report Requirements for Outdoor Units With no Match

DOE proposed to require reporting of additional non-public information for the indoor unit that is tested with an outdoor unit with no match. This would include the indoor coil face area, depth in the direction of airflow, fin density (fins per inch), fin material, fin style (*e.g.,* wavy or louvered), tube diameter, tube material, and numbers of tubes high and deep. These additional requirements would apply to outdoor units with no match, whether or not the outdoor unit was also certified as part of an individual combination. 81 FR at 58172 (Aug. 24, 2016).

Unico, Goodman, ACEEE, NRDC, and ASAP supported DOE in requiring that specific indoor coil descriptions be specified for outdoor units with no match. (Unico, Inc., No. 30 at p. 2; Goodman, No. 39 at p. 5; ACEEE, NRDC, and ASAP, No. 33 at p. 4)

AHRI generally did not support DOE's proposals for outdoor units with no match, but noted that the following fin styles are available as options in the AHRI Directory: Flat corrugated, high performance, lanced, louvered, and N/A. (AHRI, No. 27 at p. 7) Rheem commented that the proposed list of indoor unit details are insufficient as a measure of indoor coil performance. Rheem opposed reporting of additional non-public information for the indoor unit that is tested with an outdoor unit with no match. (Rheem, No. 37 at p. 2) Nortek similarly commented that DOE's attempt to have manufacturers describe a fin style and tube diameter is obsolete and that with the varying materials and technologies in the market, the burden of characterizing fins as ''lanced, flat, corrugated'', etc. is of no value. (Nortek, No. 22 at p. 7)

In response to the comments from AHRI, DOE will include options noted by AHRI for fin style in the certification template. In response to the comments from Rheem and Nortek, DOE notes that the reporting of information on the indoor unit is necessary for DOE's assessment and enforcement testing. DOE notes that, although Rheem indicated that the listed information is insufficient, they provided no recommendations regarding alternative ways that DOE can verify performance claimed for outdoor units with no match. Therefore, DOE adopts this requirement in this final rule.

c. DOE Authority

Per DOE's regulations in Appendix M established in the June 2016 final rule, the model of outdoor unit must be tested with an indoor unit meeting specified criteria. 81 FR at 37051 (June 8, 2016). 81 FR at 58171 (Aug. 24, 2016). Under the certification requirements proposed in the August 2016 SNOPR, DOE expanded the scope of outdoor units that would be required to be tested as outdoor units with no match. The specific criteria proposed to require such a rating are discussed in greater detail in section III.A.5.e, but they include having no designated refrigerant, a warranty that specifies refrigerant properties similar to those of HCFC-22 to define refrigerant acceptability (rather than or in addition to specific refrigerants), shipping without refrigerant or with a charge that requires addition of more than a pound of charge during setup, and shipping with any amount of R-407C. As proposed, any such unit would need to be certified as an outdoor unit with no match.

Multiple stakeholders commented on various aspects of DOE's authority to establish such requirements.

AHRI and Nortek commented that DOE has authority over manufacturers, but that DOE cannot expand that authority to make the manufacturer selling a legal product liable for the conduct of a distributor, contractor or individual consumer. They emphasized that an objective standard that could be the basis of DOE's certification and enforcement requirements will capture the conduct through which the manufacturer is distributing in commerce and marketing the equipment. (AHRI, No. 27 at p. 4; Nortek, No. 22 at p. 3–4)

DOE agrees that DOE has authority over manufacturers but notes that EPCA defines manufacture as ''to manufacture, produce, assemble, or import.'' (42 U.S.C. 6291(10))

AHRI and Nortek commented that the test requirements for outdoor units with no match represent design requirements and that DOE does not have authority to impose design requirements for central air conditioners. They noted that EPCA clearly states for some products that a standard may be a design requirement or a performance standard, but not both, and that EPCA does not even give DOE the option of considering design requirements for central air conditioners. AHRI and Nortek commented that when the use of a component with specific design requirements is mandated by the test procedure, it is in fact a design requirement for the product, since that test procedure must be used to determine the product's efficiency. (AHRI, No. 27 at p. 4–5; Nortek, No. 22 at p. 4)

In response, DOE does not agree that the test procedure imposes a design requirement as DOE does not impose any design restrictions on the outdoor unit. However, DOE must establish test procedures that are reasonably designed to measure energy efficiency during a representative average use cycle as determined by DOE (42 U.S.C. 6293 (b)(3)), which is why the indoor unit characteristics are specified. This requirement is analogous to the requirement to use higher external static pressure (ESP) when testing an SDHV system. DOE also notes that its delineation of outdoor units with no match is for units that are predominantly used to replace failed HCFC-22 outdoor units. As such, DOE has developed a straightforward approach to defining the characteristics of an indoor unit which is representative of such applications in order to allow the test procedure for these units to be representative of field installation. The extension of this concept to additional categories of outdoor units with no match (other than those designed for HCFC-22) does not invalidate this premise. For example, DOE has no evidence that outdoor units designed for use with R-407C are installed to a significant extent with new indoor units. Further discussion regarding the specific criteria to identify outdoor units with no match is in section III.A.5.e.

AHRI and Nortek commented that DOE's proposal for outdoor units with no match would be an expansion into technical and policy issues that are outside of DOE's authority under EPCA, were not within Congress' intent in granting DOE authority over energy efficiency standards, and are the jurisdiction of the EPA. They assert that the proposed approach would effectively ban the sale of otherwise legal products by requiring the very restrictive no match testing. (AHRI, No. 27 at p. 5; Nortek, No. 22 at p. 4–5) Similarly, JCI commented that DOE's R-407C proposal effectively bans the use of R-407C in split-system CACs and HPs by proposing to burden R-407C units with more stringent testing requirements than units designed for use with any other EPA–SNAP approved refrigerant, requiring testing with an inefficient indoor unit, and thus requiring outdoor unit efficiency that is either technically impossible or economically inviable to meet. JCI commented that this refrigerant-specific test procedure requirement constitutes back-door regulation of R-407C by DOE even though R-407C is already subject to

direct regulation by EPA under the Clean Air Act, and EPA has permitted the use of R-407C in split system CAC/HPs. In proposing to manipulate the CAC/HP test procedure in a way that would eliminate the use of R-407C in split-system CAC/HPs, JCI stated that DOE is acting beyond its legal authority under EPCA. (JCI, No. 24 at p. 3–4)

Ingersoll Rand agrees with AHRI's position that these proposed requirements exceed DOE's statutory authority. (Ingersoll Rand, No. 38 at p. 3)

On the other hand, ACEEE, NRDC, and ASAP commented that DOE regulates energy efficiency and has a legal obligation to ensure that manufacturers comply with its standards. According to ACEEE, NRDC, and ASAP, the August 2016 test procedure SNOPR does precisely that by ensuring that units intended as replacement units have to meet the same rules regardless of the refrigerant they are designed to use. ACEEE, NRDC, and ASAP commented that in the SNOPR, DOE clearly set out to close a loophole in its own regulations that, if left unaddressed, would result in the sale of units that do not meet existing standards, resulting in higher energy consumption. ACEEE, NRDC, and ASAP commented that closing that loophole is the purpose of DOE's ''no-match'' requirements for certifying these units. ACEEE, NRDC, and ASAP further commented that DOE is not banning the sale of R-407C units and that selling outdoor unit replacements using R-407C is and will continue to be perfectly legal—in fact, manufacturers may produce and sell outdoor units with no match using any refrigerant they want, including R-22 and R-407C. They commented that these units will need to meet the efficiency of DOE's existing minimum standards, rather than skate by with a certified value not achieved in the real world. They expressed the view that DOE's SNOPR effectively addresses the efficiency performance of products on the market today. (ACEEE, NRDC, and ASAP, No. 33 at p. 11) ACEEE, NRDC, and ASAP also indicated that some products, including the R-407C products introduced to the market in 2016, can only meet the existing standards by pairing the outdoor unit with an oversized indoor unit, even though the units are sold as replacements for outdoor units in which the existing indoor unit is not replaced. They further stated that other combinations in which the outdoor and indoor units are mismatched are unlikely to be sold in these combinations in any significant quantity. (ACEEE, NRDC, and ASAP, No. 33 at p. 4) Lennox also commented that ''a manufacturer'' rated an outdoor unit for R-407C by matching the outdoor unit with an unusually large indoor coil and sold it with one pound of refrigerant charge as a replacement for HCFC-22 units. (Lennox, No. 25 at p. 4)

Contrary to the comments of AHRI, JCI, Nortek, and Ingersoll Rand, EPCA requires DOE to establish appropriate test procedures with which to measure product efficiency for a representative average use cycle. (42 U.S.C. 6293(b)(3)) DOE's proposals regarding outdoor units with no match are based on efficiency considerations and supported by DOE's authority granted by EPCA to regulate product efficiency and to establish appropriate test procedures with which to measure product efficiency. JCI commented that when consumers are offered the option to use R-407C, as opposed to HCFC-22, they take advantage of it, citing that sales of R-407C are rising proportionately with JCI's sales of R-407C units, and pointing out that they are giving customers the opportunity to avoid HCFC-22 refrigerant without entirely replacing their CAC/HP systems. (JCI, No. 24 at p. 7) These statements support DOE's expectation that the sales of these R-407C units are primarily, if not entirely, for no-match installations in which the indoor unit is not replaced. Although JCI claims that DOE cannot extend its arguments made for HCFC-22 outdoor units (*i.e.,* that they are clearly no-match installations because there is no valid EPA-approved combination that includes an HCFC-22 outdoor unit (JCI, No. 24 at p. 5)), DOE asserts that the possibility that there are or could be a few valid R-407C combinations sold does not in itself make sales of combinations (rather than no-match sales) the representative efficiency value for R-407C.

JCI also claimed that DOE has no authority to regulate outdoor units with no match because they are not a central air conditioner or a heat pump as defined by EPCA. (JCI, No. 24 at p. 4) DOE notes that in the June 2016 Final Rule, DOE reasonably interpreted the statutory definition to specify the following: ''A central air conditioner or central air conditioning heat pump may consist of: a single-package unit; an outdoor unit and one or more indoor units; an indoor unit only; or an outdoor unit with no match. In the case of an indoor unit only or an outdoor unit with no match, the unit must be tested and rated as a system (combination of both an indoor and an outdoor unit).'' 81 FR at 37056 (June 8, 2016). In that rule, DOE noted that this interpretation did not change the scope of DOE's product coverage and is in line with the current certification requirements for CAC/HP. 81 FR at 36999.

d. Altering the Measured Efficiency

In the August 2016 public meeting, JCI commented that they offer a matched combination with R-407C, and that the tested combination is available in the AHRI database. JCI noted that the product has been available since spring 2016, and it is too early to say that there is no tested combination of this product. JCI also questioned how long after introduction of an outdoor unit product an assessment can be made whether there is or is not a highest sales volume combination. (JCI, Public Meeting Transcript, No. 20 at pp. 124–132) In written comments, JCI cited EPCA requirements that when amending test procedures, DOE must consider to what extent the amendments alter the measured efficiency of covered products, and then amend the applicable energy conservation standards if a determination is made that the test procedure amendment alters the measurement. (42 U.S.C. 6293(e)(1–2)) JCI commented that DOE has not done this for its amendments associated with no-match R-407C products. JCI explained that the no-match proposals would force manufacturers to re-test previously certified compliant products using a new testing standard that is technically impossible to meet, which would render the previously-compliant R-407C systems non-compliant. (JCI, No. 24 at p. 6)

This test procedure provides a mechanism of assessing the performance of no-match products, such as those that use R-407C, which can then be used to provide a reasonable level of assurance that all field-match combinations of the new, unmatched outdoor units will achieve the established efficiency levels. The current test procedure requires that single-stage split system air conditioners be tested using the highest sales volume tested combination. 10 CFR 429.16. It is DOE's understanding that condensing units utilizing R407C typically do not have a highest sales volume indoor unit that satisfy the requirements of the test procedure and thus, could not be tested under the current regulatory regime. Further, if the condensing units were to have a highest sales volume indoor unit for testing, DOE believes the results of such testing would overstate the performance of R407C systems as installed. DOE believes this is the case because R407C systems typically get installed with existing indoor units, which are not properly sized, in order

to achieve the system efficiency that would result from a new matched pair system. Thus, DOE believes that manufacturers of R407C condensing units should have sought a waiver for the current test procedure requirements pursuant to the procedures at 10 CFR 430.27. EPCA requires DOE to adopt test procedures that are reasonably designed to produce test results which measure energy efficiency of a covered product during a representative average use cycle or period of use. (42 U.S.C. 6293(b)(3)) To meet this requirement for outdoor units with no match, DOE is now adopting an alternative approach similar to the proposal with modification for testing and determining represented values for no-match R407C products based on stakeholder comments. DOE notes that under the approach adopted in this final rule, the testing method for no-match systems does not consider HSVC. In this rulemaking, the only proposal regarding HSVC was to remove the requirement for single-split system air conditioners, which DOE adopts as discussed in section III.A.2. The application of HSVC to current applicable regulations is not within the scope of this rulemaking. Therefore, DOE will not address its application in this rule.

JCI also questioned whether DOE performed any analysis on how the new requirements for units with R-407C refrigerant impact consumers. (JCI, Public Meeting Transcript, No. 20 at pp. 137–139)

In response, DOE does not evaluate impacts on consumers for test procedure amendments. The test procedure amendments are developed to provide efficiency representations for representative average use cycles. (42 U.S.C. 6293(a)(3)) As discussed in section III.A.5.d, DOE developed the test approach for outdoor units with no match on this basis. Thus, the energy conservation standard rulemaking's consideration of consumer impacts accounts for the impacts that might be associated with specific test procedure changes.

e. Specific No-Match Criteria

DOE proposed in the August 2016 SNOPR that manufacturers must determine efficiency representations for outdoor units as outdoor units with no match if they meet any of the following criteria: Having no designated refrigerant, a warranty that specifies refrigerant properties similar to those of HCFC-22 to define refrigerant acceptability (rather than or in addition to specific refrigerants), shipping without refrigerant or with a charge that requires addition of more than a pound of charge during setup, and shipping with any amount of R-407C. 81 FR at 58170–58172 (Aug. 24, 2016).

JCI and Goodman commented that there are other refrigerants, including MO-99 and NU-22, that are used as replacements for HCFC-22. JCI questioned why those refrigerants were not specifically called out in the proposed test procedure as R-407C was, while Goodman indicated that the proposal would do nothing to address these other HCFC-22 replacement refrigerants. (JCI, Public Meeting Transcript, No. 20 at p. 140; Goodman, No. 39 at p. 3)

JCI also stated that they have competitors that have published guidelines around the application of R-410A units into existing indoor applications, and questioned why those units would not have to be held to the same test approach for outdoor units with no match.

In response, it has always been the case that some outdoor units are installed as replacements for failed outdoor units. However, in most cases an outdoor unit model would also be sold in substantial numbers as a combination with indoor units. This is in contrast to R-407C units, which are predominantly sold in scenarios in which the outdoor unit is replaced, and the indoor unit is not replaced. Hence the test procedure is representative of an average use cycle for R-410A units without requiring that it be tested as a unit with no match.

JCI also commented that the benefits of R-407C will increase over time if products designed for this refrigerant based on ''additional valid matches'' are allowed to be sold, but that the proposed requirements would significantly limit any such possibility. JCI asserted that it can create a larger market for complete R-407C systems and that DOE should not limit the potential for such innovation. (JCI, No. 24 at p. 7)

ACEEE, NRDC, and ASAP and Lennox supported the proposed requirement that an outdoor unit distributed without a designated refrigerant must be tested and certified as an outdoor unit with no match. (ACEEE, NRDC, and ASAP, No. 33 at p. 4; Lennox, No. 25 at p. 5)

AHRI and Nortek commented that DOE's categorization of dry-ship units is overly-broad and does not necessarily equate to outdoor units with no match. AHRI and Nortek commented that units with long line sets require more than one pound of charge to be added in the field. AHRI and Nortek contended that it is also very realistic that manufacturers will not be able to ship units with mildly flammable refrigerants factory charged which will require adding refrigerants in the field during installation. (AHRI, No. 27 at p. 6; Nortek, No. 22 at p. 6) JCI, Ingersoll Rand, Goodman, Carrier/UTC also disagreed with DOE's proposal for similar reasons. Ingersoll Rand, Goodman, and Carrier/UTC gave examples of situations in which the entire charge required for a system could not be contained within the outdoor unit by itself as shipped from the factory, and would require more than a pound of refrigerant to be added, including for MicroChannel Heat Exchangers and long line sets. (JCI, No. 24 at p. 7–8; Ingersoll Rand, No. 38 at p. 2; Goodman, No. 39 at p. 3–4; Carrier/UTC, No. 36 at p. 3; JCI and Ingersoll Rand, Public Meeting Transcript, No. 20 at pp. 140–141) Goodman further commented that the regulatory text should restrict the one pound rule to laboratory tests and suggested regulatory text to address this issue as well as the small diameter tubing issue. (Goodman, No. 39 at p. 3–4) Lennox supported the intent of DOE's proposal but found it to be too restrictive because of the existence of products in which the internal volume of the product does not allow it to be fully charged from the factory. (Lennox, No. 25 at p. 5) Goodman, Lennox, and JCI were particularly concerned with potential unintended consequences and potentially impeding innovation as the industry moves toward lower global warming potential (GWP) refrigerants, in which cases the manufacturer may choose to ship split-system units designed for use with A2L refrigerants without the refrigerant factory-installed. (Goodman, No. 39 at p. 4) Lennox commented that the safety requirements and codes and standards required for a transition to A2L [8] refrigerants are not developed and that there is a high probability that some form of mitigation to ensure product safety will be required, for example, requiring that such units be dry-shipped, *i.e.* with a dry nitrogen charge rather than with refrigerant. Lennox commented that DOE should maintain a path that allows dry-shipping products (DOE understands this to mean not requiring no-match testing for these products) to ensure the most efficient transition to low-GWP products with the least

[8] A2L is a safety classification for refrigerants that have low toxicity and lower flammability. See *https://www.epa.gov/snap/refrigerant-safety*. Most refrigerants in current use (*e.g.* R-410A) have an A1 classification, indicating both low toxicity and no flame propagation.

negative consumer impacts. (Lennox, No. 25 at p. 5)

First Co. objected to the requirement to test an outdoor unit as a no-match outdoor unit if more than a pound of refrigerant would have to be added during set up. First Co. commented that the proposals are based on a single charge value when there are multiple charge values for different coils. First Co. requested DOE drop this requirement entirely. (EERE–2016–BT–TP–0029, No. 21 at p. 5)

In response to these comments DOE has revised the criteria for outdoor units with no match. Specifically, manufacturers must determine efficiency representations, and certify such representations, for outdoor units as an outdoor unit with no match if:

- The outdoor unit is approved for use with, determined by listing on the outdoor unit nameplate, HCFC-22 or refrigerants with similar thermophysical properties, as specified in § 429.16(a)(3) (the discussion below addresses similarity);
- There are no designations of approved refrigerants on the outdoor unit nameplate; or.
- The outdoor unit is shipped requiring more than two pounds of charge when tested according to the test procedure (*e.g.,* with 25 feet of interconnecting lines), unless (a) an A2L refrigerant is listed as approved on the nameplate, or (b) the factory charge listed on the nameplate is 70 percent or more of the outdoor unit's internal refrigerant circuit volume times the density for 95 °F refrigerant liquid.

DOE agrees with JCI and Goodman that outdoor units approved for use with refrigerants similar to HCFC-22 (other than R-407C) are likely to be intended for no-match use in the field. Hence, DOE is changing the criteria so that approval for use of any such refrigerant similar to HCFC-22 would make the outdoor unit subject to the no-match requirements. DOE does not find it likely that a large market for complete systems based on R-407C or other refrigerants similar to HCFC-22 would likely emerge in the near future given the initial trends associated with introduction of R-407C products, as discussed section III.A.5.c. As suggested by ACEEE, NRDC, and ASAP (ACEEE, NRDC, and ASAP, No. 33 at p. 3), R-410A is nearly universally used as the refrigerant that has replaced HCFC-22 in CAC/HP systems. Other refrigerants approved by the EPA in its SNAP listing for acceptable substitutes in residential and light commercial air conditioning and heat pumps [9] are rarely used in new split systems. DOE considered the approved refrigerants in the SNAP list and refrigerants understood to be suitable for use in HCFC-22 systems (''Refrigerants for R-22 Retrofits'', No. 46 at p. 1) and developed an HCFC-22 similarity criterion that would apply for these likely replacement options. DOE determined that the HCFC-22 replacement refrigerants would be selected and no other refrigerant that is likely to be approved for use in new split systems would be selected if the saturation pressure associated with 95 °F refrigerant temperature is within 18 percent of the pressure for HCFC-22. Hence, DOE adopts this as a criterion for no-match status of an outdoor unit. DOE recognizes that there may be A2L refrigerants that would themselves have similar pressures that in future may be approved on EPA's SNAP list for these products. To ensure that transition from global warming refrigerants is not restricted, DOE acknowledges that some revisions to these requirements may need to be developed as manufactures start to adopt such refrigerants in new split systems. DOE will consider such testing and certification revisions and propose options in a future rulemaking.

DOE is also revising the no-match criteria regarding dry shipping and required refrigerant addition as indicated above in response to manufacturer comments and additional research. First, DOE recognizes that where an installation requires long line sets, that a higher quantity of refrigerant may have to be added. DOE agrees with Goodman's suggestion to base this limit on a standardized scenario, specifically the addition of charge in a DOE test, for which 25 feet of refrigerant lines are specified. Second, DOE has adopted the exception associated with small-volume outdoor coils (factory charge 70 percent or more than the coil internal volume times refrigerant density) suggested by Goodman. However, DOE reviewed its own available test data for CAC/HP systems and determined that, for tests in which the added charge quantities were clearly recorded, a large percentage of tests required addition of 1 pound or more of refrigerant. Review of the data showed that nearly all of the tests could be conducted with the addition of less than 2 pounds of refrigerant. Hence, DOE is revising the charge addition requirement accordingly. First Company's comments addressed differences in indoor coil volumes, but did not provide specific information regarding the potential differences in charge that could be associated with different coil sizes—the additional pound doubles the allowed charge addition for a unit before requiring a no-match test and, based on DOE test experience, is sufficient to address nearly all tested systems. Because these systems were charged without consideration of this new requirement and would likely have required less charge addition if pre-charged with the limit in mind, and also considering that at least one manufacturer (Goodman) agreed with the one-pound limit on the basis of additional clarifications that DOE has adopted (the low-coil-volume exclusion and clarification that the limit applies for ratings testing), DOE believes that the finalized criteria are sufficiently flexible to avoid requiring no-match testing for any outdoor units that should not be tested this way.

DOE also acknowledges the issues associated with A2L refrigerants and small-volume heat exchanger technologies. DOE agrees with Goodman's suggestions for providing exceptions to the no-match requirements in these cases and has adopted the suggestions in this final rule.

f. NGIFS

In the July 2016 final rule, DOE set requirements for the indoor units that are used in tests of outdoor units with no match. 81 FR at 37065 (June 8, 2016). The August SNOPR proposed extension of this requirement to additional types of outdoor units with no match. 81 FR at 58170 (Aug. 24, 2016).

AHRI and Nortek commented that it will not always be the case that outdoor units with no match are a result of the phase-out of R-22 refrigerant and that in the future there will be a transition between nonflammable and mildly flammable refrigerants. They further suggested that when higher GWP refrigerants, such as R-410A are phased out, there will likely be a period of time when R-410A condensing units will be sold as outdoor units with no match, and that they will likely be shipped dry. AHRI and Nortek commented that while a NGIFS no higher than 1.0 sq.in./Btu/hr may be representative of R-22 units circa 2006, NGIFS of 1.0 makes no sense for R-410A, resulting in energy measurements that are not representative of the unit in the field. (AHRI, No. 27 at p. 5–6; Nortek, No. 22 at p. 5) Ingersoll Rand commented similarly. (Ingersoll Rand, No. 38 at p. 2) Ingersoll Rand further commented that the NGIFS definition is only appropriate for ⅜″ tube coils and cannot be used for coils with smaller

[9] *https://www.epa.gov/snap/acceptable-substitutes-residential-and-light-commercial-air-conditioning-and-heat-pumps.*

diameter tubes or with microchannel heat exchangers. Ingersoll Rand commented that NGIFS does not account for fin design or tube pattern which affects heat transfer, and its adoption will create the potential for testing loopholes in the future. Ingersoll Rand commented that it would be better to set a limit on coil cabinet volume based on coils sold in the 5 years prior to the elimination of a refrigerant. (Ingersoll Rand, No. 38 at p. 2)

DOE acknowledges that the old indoor units that are matched with no-match outdoor units in field installations will not always be old HCFC-22 indoor units. DOE will consider adjustments to the no-match requirements consistent with available information in a future rulemaking. However, DOE does not necessarily agree that a phaseout of high GWP refrigerants will by itself mean a step change of the existing population of indoor units to characteristics typical of more recent R-410A systems. Consideration will have to be given to whether the NGIFS value is allowed to rise to reflect representative field conditions or whether there are alternative approaches that would be more effective in addressing issues associated with installation of no-match outdoor units.

In response to Ingersoll Rand's comment regarding applicability of NGIFS, DOE responds that the vast majority of indoor units that are field-matched with no-match outdoor units have ⅜-in OD tubing. Further, DOE selected the NGIFS value based on the assumption that manufacturers would use enhanced fin surfaces (*e.g.,* lanced, louvered, wavy) for such tests. DOE also notes that such surfaces were in general use during the time period before phaseout of HCFC–22 for new systems. (See, *e.g.,* page 1–11 of the 1997 technical support document for room air conditioners, which indicates that such surfaces were in use for central air conditioners at the time, *https://www1.eere.energy.gov/buildings/appliance_standards/pdfs/tsdracv2.pdf.*)

6. Representation Limitations for Independent Coil Manufacturers

In the June 2016 final rule, DOE adopted language in 10 CFR 429.16 specifying that a basic model may only be certified as compliant with a regional standard if all individual combinations within that basic model meet the regional standard for which that basic model would be certified and that an ICM cannot certify a basic model containing a representative value that is more efficient than any combination certified by an OUM containing the same outdoor unit. 81 FR at 37050 (June 8, 2016).

Based on letters submitted by several stakeholders (Docket No. EERE–2016–BT–TP–0029–0006, –0005, and –0003), in the August 2016 SNOPR, DOE proposed to remove the sentence: ''An ICM cannot certify a basic model containing a representative value that is more efficient than any combination certified by an OUM containing the same outdoor unit.'' and replace it with the following language in 10 CFR 429.16(a)(4)(i): An ICM cannot certify an individual combination with a rating that is compliant with a regional standard if the individual combination includes a model of outdoor unit that the OUM has certified with a rating that is not compliant with a regional standard. Conversely, an ICM cannot certify an individual combination with a rating that is not compliant with a regional standard if the individual combination includes a model of outdoor unit that an OUM has certified with a rating that is compliant with a regional standard. 81 FR at 58172 (Aug. 24, 2016)

AHRI, Nortek, Unico, First Co., ADP, ACEEE, NRDC, and ASAP, Ingersoll Rand, Rheem, Carrier, Lennox, and JCI supported DOE's proposal. (AHRI, No. 27 at p. 7; Nortek, No. 22 at p. 7; Unico, Inc., No. 30 at p. 2; First Co, No. 21 at p. 3; ADP, No. 23 at p. 3; ACEEE, NRDC, and ASAP, No. 33 at p. 5; Ingersoll Rand, No. 38 at p. 3; Rheem, No. 37 at p. 2; Carrier/UTC, No. 36 at p. 4; Lennox, No. 25 at p. 11; JCI, No. 24 at p. 9; ADP, Public Meeting Transcript, No. 20 at p. 143) Therefore, in this final rule, DOE is adopting this language as proposed.

7. Reporting of Low-Capacity Lockout for Air Conditioners and Heat Pumps With Two-Capacity Compressors

In the August 2016 SNOPR, DOE proposed to require that the lock-out temperatures for both cooling and heating modes for CAC/HPs with two-capacity compressors be provided in the certification report. 81 FR 58163, 58172 (Aug. 24, 2016).

NEEA commented that they strongly support the proposed reporting requirement. (NEEA, No. 35 at p. 2) AHRI, Nortek, Ingersoll Rand, JCI, and Carrier/UTC commented that low-capacity lockout for air conditioners and heat pumps with two-capacity compressors is considered intellectual property, and that they are concerned about the possibility of reverse engineering products if this information is publicly reported. (AHRI, Public Meeting Transcript, No. 20 at p. 101; AHRI, No. 27 at p. 7; Nortek, No. 22 at p. 8; Ingersoll Rand, No. 38 at p. 3; JCI, No. 24 at p. 17–18; Carrier/UTC, No. 36 at p. 3)

In the existing requirements and the requirements proposed in the August 2016 SNOPR, DOE lists product-specific items that needs to be included in certification reports in 10 CFR 429.16(e), with subsection (2) listing public items, and subsection (4) listing additional items that would not be posted to DOE's public certification database. DOE notes that it included the proposal to require reporting the outdoor temperature(s) at which the unit locks out low capacity operation (where applicable) in proposed § 429.16(e)(4) of the August 2016 SNOPR. Because, under the proposal, the item would not be posted to DOE's public certification database, DOE is maintaining this requirement in this final rule.

8. Represented Values of Cooling Capacity

In the August 2016 SNOPR, DOE proposed to revise the regulatory text in three locations (10 CFR 429.16(b)(3), 10 CFR 429.16(d), 10 CFR 429.70(e)(5)(iv)) to allow a one-sided tolerance on cooling and heating capacity that allows underrating of any amount, but only overrating up to 5 percent (*i.e.,* the certified capacity must be no greater than 105 percent of the mean measured capacity or the output of the AEDM), as intended in the June 2016 final rule. As adopted in the June 2016 final rule, DOE would still use the mean of the measured capacities in its enforcement provisions.

AHRI, Mitsubishi, Rheem, Carrier, JCI, Nortek, Ingersoll Rand, ADP, Lennox, and Goodman opposed DOE's proposal for tolerance on cooling capacity. They commented that the same rules that apply to efficiency should be applied to capacity, where manufacturers should be permitted to rate cooling and heating capacity only as high as the tested value or AEDM output. (AHRI, No. 27 at p. 7; Mitsubishi, No. 29 at p. 2; Rheem, No. 37 at p. 2; Carrier/UTC, No. 36 at p. 4; JCI, No. 24 at p. 9; Nortek, No. 22 at p. 8; Ingersoll Rand, No. 38 at p. 3; ADP, No. 23 at p. 3–4; Lennox, No. 25 at p. 6; Goodman, No. 39 at p. 12; Carrier/UTC and Lennox, Public Meeting Transcript, No. 20 at p. 145) Additionally, Carrier commented that de-rating capacity would result in a consumer getting more capacity than expected but that overrating capacity as suggested in this proposal would result in a loss to the consumer. In addition, the double sided tolerance would statistically result in much higher risk for manufacturers. (Carrier/UTC, No. 36

at p. 4; Carrier/UTC, Public Meeting Transcript, No. 20 at p. 144)

ACEEE, NRDC, ASAP supported the use of one-sided tolerance tests where possible, stating that there may be legitimate business reasons to label and sell units that are more efficient than their certified values and that consumers can only be pleased if a product does better than claimed. (ACEEE, NRDC, and ASAP, No. 33 at p. 5)

Unico commented that they strongly support one-sided tolerance for capacity, without which a manufacturer cannot rate conservatively. Unico stated that it recognizes that, for some product classes other than small-duct high-velocity, there is a very small chance that a manufacturer could conservatively rate a system with the express intent to avoid testing with a slightly higher external static pressure. Unico believes the advantage that this provides is insignificant. (Unico, Inc., No. 30 at p. 2)

NEEA commented that they do not necessarily support the proposal, stating that they were not able to ascertain if DOE's one-sided tolerance for capacity reporting would result in a system being rated with a lower building load as a result of reporting an overly conservative value, and thus an overrated cooling and/or heating performance. (NEEA, No. 35 at p. 2)

First Co. agreed with DOE's proposal to allow one sided tolerance on represented values of cooling and heating capacity, but commented that the proposed language in § 429.70(e)(5)(iv) does not accurately reflect DOE's intention. First Co. believes that in the first sentence after the words ''. . . by more than 5 percent'' the text should read ''or tests worse than its certified cooling capacity by more than 5 percent.'' (First Co, No. 21 at p. 3)

DOE understands that overrating capacity could result in a loss to the consumer and could put the manufacturer at risk. In response to the comments received, in this final rule DOE is revising the tolerance on cooling capacity to be similar to the tolerance on efficiency, where the cooling capacity should be less than or equal to the lower of: (1) The mean of the sample and (2) the lower 90 percent confidence limit of the true mean divided by 0.95; or less than or equal to the AEDM output. DOE agrees with Unico that conservatively rating to gain some advantage is not a significant risk. In response to NEEA, DOE notes that the building loads, calculated by sections 4.1 and 4.2 of both appendix M and appendix M1 of the August 2016 SNOPR, use the tested heating and cooling capacities, not the rated capacities. Therefore, there is no concern of overrating cooling or heating performance.

In response to First Co.'s comments, DOE notes that the August 2016 SNOPR, § 429.70(e)(5)(iv), regarding AEDM verification testing, inadvertently stated that DOE would notify a manufacturer that a unit fails to meet its certified rating if the tested cooling capacity is greater than 105 percent of its certified cooling capacity. In this final rule, the section has been revised to indicate DOE will notify a manufacturer that a unit fails to meet its certified rating if the tested cooling capacity is lower than its certified cooling capacity. This is consistent with DOE's revisions to its tolerance on cooling capacity.

9. New Efficiency Metrics

During the August 2016 Public Meeting, EEI, PG&E, Goodman, Rheem, and Unico recommended renaming the efficiency metrics whose values will be altered as compared to the current metrics, which includes HSPF, SEER, and EER. The purpose of this would be to help avoid confusion in the marketplace and to allow more relevant utility incentive programs. (EEI, PG&E, Goodman, Rheem, and Unico, Public Meeting Transcript, No. 20 at pp. 85–91)

Additionally, EEI submitted a written comment suggesting that a new efficiency acronym be used under the revised test procedure in order to avoid market confusion and to ensure that consumers are aware that significant changes have been made in how heat pumps are tested and rated. EEI suggested the use of several specific acronyms. (EEI, No. 34, page 6) The California IOUs similarly commented that the proposed changes to appendix M1 efficiency ratings are so substantial that they should be given new descriptors. The California IOUs stated that value changes will cause confusion in the marketplace unless they are re-labeled as ''EER2,'' ''SEER2,'' and ''HSPF2,'' or with other labels determined by DOE to be appropriate. (California IOUs, No. 32 at p. 5)

In response to the comments, in this final rule, DOE is creating new efficiency metrics to represent cooling and heating performance whose values will be altered as compared to the current metrics. The new metrics include seasonal energy efficiency ratio 2 (SEER2), which will replace seasonal energy efficiency ratio (SEER); energy efficiency ratio 2 (EER2), which will replace energy efficiency ratio (EER); and heating seasonal performance factor 2 (HSPF2), which will replace heating seasonal performance factor (HSPF). These labels are consistent with those used in the CAC/HP ECS Working Group Term Sheet. New efficiency metrics SEER2, EER2, and HSPF2 reflect the changes in the test procedure in appendix M1 that result in change in the measured efficiency values. The definitions for these metrics are identical to those for the original metrics except that they are determined in accordance with appendix M1 instead of in accordance with appendix M.

B. Amendments to Appendix M Testing To Determine Compliance With the Current Energy Conservation Standards

Under EPCA, any test procedure that DOE prescribes or amends shall be reasonably designed to produce test results which measure energy efficiency and energy use of a covered product during a representative average use cycle or period of use. (42 U.S.C. 6293(b)(3)) In the August 2016 SNOPR, DOE proposed several revisions to appendix M to subpart B of 10 CFR part 430 to improve the test representativeness and repeatability. 81 FR 58164 (Aug. 24, 2016) In addition, DOE held a public meeting at DOE headquarters in Washington, DC, on August 26, 2016 (Public Meeting Transcript, Docket No. EERE–2016–BT–TP–0029–0020). Based on the comments DOE received from the August 2016 Public Meeting and from the August 2016 SNOPR comment period, DOE is modifying its approach and adopting revisions to its procedures in Appendix M, which is independent of Appendix M1.

1. Measurement of Off Mode Power Consumption: Time Delay for Units With Self-Regulating Crankcase Heaters

In the August 2016 SNOPR, DOE proposed revisions to the off-mode test procedure imposing time delays to allow self-regulating crankcase heaters to approach equilibrium before making measurements. DOE proposed a 4-hour time delay for units without compressor sound blankets and an 8-hour time delay for units with compressor sound blankets. 81 FR at 58173 (Aug. 24, 2016)

In the SNOPR public meeting, JCI commented that adding four or eight hour time delays is a substantial testing burden and requested that DOE consider developing an approach to predict the final values without much extra test time. They reiterated this request in written comments and suggested that a time-based correlation developed by manufacturers could be built into the AEDM for the off-mode metric. (JCI, Public Meeting Transcript, No. 20 at p. 31; JCI, No. 24 at p. 10)

AHRI and Nortek commented that they generally support establishing delay time but were concerned that manufacturers would have to retest all units again within 180 days of the publication of the final rule so soon after initiating off-mode testing after the June 2016 final rule first established the off-mode test procedures. AHRI asserted that this revision represents a significant and unnecessary testing burden. AHRI suggested that DOE should either allow the off-mode rating to be based on appendix M modifications finalized in the June 2016 Final Rule (DOE assumes this is a request to clarify that products tested within 180 days of the June 8 final rule need not be retested again using the time delays) or move this revision to appendix M1 (AHRI, No. 27 at p. 8; Nortek, No. 22 at pp. 8–9). Carrier commented that the estimated time to implement this change would be at least six additional months (Carrier, No. 36 at p. 5). Rheem disagreed with the implementation time frame because this change will double the testing time and supported moving the change to appendix M1 (Rheem, No. 37 at p. 2). Ingersoll Rand commented that completing all the required testing would extend beyond the effective date (Ingersoll Rand, No. 38 at p. 3).

ACEEE, NRDC, and ASAP commented that DOE's approach to the thermal response delay issue for self-regulating crankcase heaters seems reasonable and responsive, but also sub-optimal considering that the measured self-regulating heater's power at the end of the specified delay times could be higher or lower with compressors having more or less thermal mass. ACEEE, NRDC, and ASAP recommended that DOE allow manufacturers to select alternative delay times if shorter or longer delays are required for specific models. (ACEEE, NRDC, and ASAP, No. 33 at p. 6).

Lennox, the CA IOUs and NEEA supported DOE's proposal. (Lennox, No. 25 at p. 11; CA IOU, No. 32 at p. 4; NEEA, No. 35 at p. 2)

DOE agrees that this additional delay time requirement could change the off-mode power measurement for some tested combinations that manufacturers may have already tested using the test procedure of the June 2016 Final Rule. DOE does not intend to introduce unnecessary test burden due to the close timing between the June 2016 Final Rule and this final rule. Therefore, DOE has decided to remove this requirement from appendix M and adopt it only in appendix M1. As for JCI's suggestion to develop a time-based correlation to allow prediction of the final measurement based on the trend in the measurement over a limited time period, DOE does not have sufficient test data to be confident that such an approach would provide a predictable result. In fact, depending on the equation used to fit the curve created by the first few data points, the details of the particular compressor design, and the history of testing just prior to conducting an off-mode test, DOE is concerned that a wide range of results might be obtained for any given unit, including a prediction of infinite wattage. DOE understands JCI's concern and agrees that such an approach could be considered in the future with more analysis and testing to validate an approach. Hence, DOE will not adopt a shortened test using curve fitting to predict ultimate off-mode power input. Regarding JCI's mention of an AEDM for off-mode, DOE does not regulate what analytic evaluation can be used in an AEDM—there is nothing in the AEDM requirements that would prevent a manufacturer from adopting an AEDM that uses the results of a shortened test as its input, as long as the requirements in 10 CFR 429.16 and 429.70 are satisfied. Thus, this notice does not adopt a shortened test procedure using curve fitting and prediction to determine off-cycle power input for systems with self-regulating crankcase heaters.

DOE received no comment suggesting different time delays than those proposed by DOE. Hence, DOE has adopted in appendix M1 the proposed time delays for measurement of off-mode power for units with self-regulating crankcase heaters or heater systems in which the crankcase heater control is affected by the heater's heat.

In addition, DOE notes that the August 2016 SNOPR inadvertently included in the regulatory text a certification requirement for the duration of the crankcase heater time delay for the shoulder season and heating season, if such time delay is employed. DOE does not actually require this information and has not adopted this requirement in the final rule.

2. Refrigerant Pressure Measurement Instructions for Cooling and Heating Heat Pumps

In the August 2016 SNOPR, DOE proposed limiting the internal volume of the pressure measurement system (*i.e.* the pressure gauge or transducer and the capillary tube and tube fittings connecting the transducer to the refrigerant lines) at pressure measurement locations that may switch from liquid to vapor state when changing operating modes and for all locations for systems undergoing cyclic tests for cooling/heating heat pumps. Specifically, DOE proposed the limit to be 0.25 cubic inch per 12,000 Btu/h. DOE also proposed the default internal volumes to be assigned to pressure transducers and gauges of 0.1 and 0.2 cubic inches, respectively, if transducer or gauge datasheets do not provide their internal volume. 81 FR at 58174 (Aug. 24, 2016)

During the 2016 August Public Meeting, Carrier commented that manufacturers typically test with up to six pressure transducers and the proposed limit would prohibit the level of testing during manufacturers' development stage and limit the number of pressure transducers to two. Carrier requested a reconsideration of the tolerance. (Carrier, Public Meeting Transcript, No. 20 at pp. 70–75)

AHRI requested clarification of ''locations where the refrigerant state changes from liquid to vapor for different parts of the test.'' AHRI commented that it is standard industry practice to place pressure taps with capillary tubes at six locations and advised that one of its members reported that, in their test chambers, the average internal volume of each pressure line is 0.91 cubic inches. Hence, AHRI asserts that DOE's proposed limit is too tight, such that the allowed number of pressure transducers would be zero for a unit that has a capacity less than 3 tons, and only one for larger-capacity units. In addition, AHRI commented that, for a cyclic test, the refrigerant state change occurs so quickly during transient startup that the effects (if any) will be within the tolerance of the measuring equipment. According to AHRI, for steady-state tests of units with the cooling mode restrictor located in the outdoor unit, there are at most two locations where the refrigerant state changes from liquid to two-phase between heating and cooling. AHRI's comment provided a table showing the refrigerant states at the six typical measurement locations for a cooling/heating heat pump having two expansion devices (one each in the indoor and outdoor units) for four test scenarios: Cooling steady-state, cooling transient start-up, heating steady-state, and heating transient start-up. The comment provided a similar table showing the refrigerant states for a heat pump with a single expansion device in the outdoor unit. In these tables, the transient startup scenario entries were all ''two-phase''. In addition, the only differences in refrigerant state between steady-state heating and steady-state cooling were highlighted in the single-expansion-device table for the liquid

service valve and indoor coil inlet locations. AHRI commented that the refrigerant weight difference (*e.g.,* associated with transfer of refrigerant in and out of the pressure lines) is extremely small (particularly considering standard charging conditions in the field), and would have a negligible effect on the system performance. AHRI requested that DOE eliminate restrictions on pressure transducer internal volume or increase them significantly in order to ensure proper system analysis. (AHRI, No. 27 at pp. 8–11) JCI, Carrier, Ingersoll Rand and Goodman concurred with AHRI's comment. (JCI, No. 24 at p. 10–12; Carrier/UTC, No. 36 at p. 5–6; Ingersoll Rand, No. 38 at p. 3; Goodman, No. 39 at p. 9) Ingersoll Rand further requested that there be clarification that this requirement would apply only to assessment and enforcement testing, not for developmental testing. (Ingersoll Rand, No. 38 at p. 3)

Lennox commented that this proposal is not practical or in alignment with current practice for either manufacturer or audit testing, and requested DOE remove or extensively revise this requirement to align with current practices. (Lennox, No. 25 at p. 12) Rheem disagreed with DOE's proposal, and commented that the amount of refrigerant trapped in pressure measuring devices can be adequately accounted for through proper refrigerant charging instructions. (Rheem, No. 37 at p. 3) Unico agreed there should be volume limits but did not have a comment on the value. Unico commented that most systems have a high tolerance for charging while some systems, particularly systems with microchannel coils, have a very low tolerance. (Unico, No. 30 at p. 3) ACEEE, NRDC, and ASAP appreciated DOE's interest but stated that it could not judge whether the proposed volumetric limits are the right ones. (ACEEE, NRDC, and ASAP, No. 33 at p. 6) The CA IOUs agreed with DOE's proposal (CA IOU, No. 32 at p. 4)

DOE has considered all of the comments received and is making revisions based on those comments. First, DOE agrees that the transient startup phase of a cyclic test may be sufficiently short that any transfer of refrigerant in or out of the pressure lines at this time could have very little impact on measured cyclic performance. The scenario for cyclic test performance enhancement at the end of the on cycle discussed in the August 2016 SNOPR could still occur (see 81 FR at 58174 (Aug. 24, 2016)), but there is no data available to demonstrate that this effect is significant.

DOE notes that the tables provided in the AHRI comment showing refrigerant states at different refrigerant circuit locations represent states in the refrigerant lines and not in the pressure measurement systems, which could be different. For example, while the refrigerant state is always vapor at the discharge location during steady-state operation, the pressure measurement system is at a lower temperature than the saturation temperature associated with the prevailing pressure level. Hence, the vapor in the pressure line will condense. The condensed liquid may flow out of the capillary line back into the system, but this is unlikely if the pressure measurement system is lower than the measurement location. Also, it is somewhat unclear whether surface tension inside a small-diameter capillary tube would impede the flow of condensed liquid back into the system, or whether the vapor flowing into the system to replace the liquid would hold up the liquid's return flow. DOE considered the potential states within the pressure measurement systems rather than at the measurement locations when evaluating the potential for refrigerant transfer between steady-state operating modes. DOE made some reasonable assumptions for this assessment, making liberal assumptions where there is some doubt about what will occur—specifically, DOE did not assume that for the above scenario that liquid return flow to the system would be impeded. DOE's assessment of likely refrigerant states for a single-expansion-valve heat pump is summarized in Table III–1. The table adds a seventh potential refrigerant circuit location, between the outdoor coil and the expansion valve, which DOE expects that some manufacturers may monitor during developmental testing to determine subcooling achieved during cooling mode operation.

TABLE III–1—REFRIGERANT STATES IN PRESSURE MEASUREMENT SYSTEMS FOR A SINGLE-EXPANSION-VALVE HEAT PUMP

Operating mode	Steady-state cooling		Steady-state heating	
Pressure measurement system above or below tap location	Above	Below	Above	Below
1. Compressor Discharge	Vapor	Liquid**	Vapor	Liquid**.
2. Between Outdoor Coil and Expansion Valve	Liquid	Liquid	Vapor*	Two-phase.
3. Liquid Service Valve	Vapor*	Two-phase	Liquid	Liquid.
4. Indoor Coil Inlet	Vapor*	Two-phase	Liquid	Liquid.
5. Indoor Coil Outlet	Vapor	Vapor	Vapor	Liquid**.
6. Common Suction Port (*i.e.* vapor service valve)	Vapor	Vapor	Vapor	Liquid**.
7. Compressor Suction	Vapor	Vapor	Vapor	Vapor.

* Any liquid that enters the pressure measurement system will evaporate because the system is at a warmer temperature than the saturation temperature associated with the pressure.

** Liquid will condense in the pressure measurement system because the system is at a cooler temperature than the saturation temperature associated with the pressure, and will not drain back into the refrigeration circuit.

DOE notes that the liquid that might transfer out of one pressure measurement system as the operating mode switches from cooling to heating may transfer into another pressure measurement system and therefore not affect total charge operating within the refrigerant circuit. Also, because of the large density difference between liquid and vapor, DOE believes that the charge in the pressure measurement system would be negligible if the refrigerant within it is two-phase or vapor. Hence, the likely transfer of refrigerant out of the refrigeration circuit as the system switches from cooling to heating would be equal to the liquid density (calculated for 100 °F bubble point conditions) multiplied by the volume differential obtained by adding the volumes of the downward-run pressure measurement systems at locations 5 and 6 (as designated in Table III–1) to the volumes of any pressure measurement systems at locations 3 and 4 and subtracting the volume of any pressure measurement system at location 2. For

a system with two expansion valves, the transferred refrigerant would represent only the volumes of downward-run pressure measurement systems at locations 5 and 6.

DOE realizes the refrigerant transfer could be mitigated by complex phenomena occurring within the pressure measurement systems, some of which, for example surface tension, are mentioned above. Another mitigating phenomenon would be the filling of the pressure measurement system with compressor oil, which would displace any refrigerant that might transfer into it. Hence, DOE is relaxing the requirement proposed in the August 2016 SNOPR in new section 2.2.g (see 81 FR at 58207 (Aug. 24, 2016)) that the volume differentials listed above represent no more than 0.5 percent of refrigerant charge. DOE is instead adopting a requirement in section 2.2.g that the volume differential represent no more than 2 percent of the charge listed on the outdoor unit nameplate. Basing the limit on the outdoor unit nameplate charge will provide more flexibility for pressure measurement systems for those heat pumps that have more charge and would hence be less sensitive to this issue. However, due to the uncertainty regarding the actual potential behavior regarding refrigerant transfer, DOE also is imposing a pressure measurement system volume limit of 1 cu. in. for location 2 for single-expansion-device heat pumps, in order to prevent a test laboratory from using a very large volume for this location to offset the volumes of locations 3, 4, 5, and 6.

For a two-expansion-device heat pump with pressure measurement systems at locations 5 and 6 above the pressure tap locations, this approach imposes no volume limits. Also, for single-expansion-valve heat pumps with pressure measurement systems at locations 5 and 6 above the pressure tap locations and the volume at locations 2 offsetting the volumes at locations 3 and 4, there will also be no volume limit, other than the 1 cu. in. limit at location 2. DOE believes that these revisions to the proposal will allow manufacturers to make pressure measurements at the locations typically used for development and ratings testing while also providing some assurance that unforeseen impacts associated with refrigerant transfer between operating modes will be mitigated. However, DOE notes that the test procedure is for determining the performance of the product for the purpose of efficiency representations, not for development testing. DOE does not require pressure measurements installed at all 7 locations indicated in Table III–1. If manufacturers require use of pressure lines for development testing that exceed the volume requirements, they have the option of using isolation valves to isolate the tap locations not needed for ratings tests as the test transitions from development to determination of ratings for purposes of certifying compliance with applicable standards. Another option is to use pressure transducers that are more resistant to the temperature changes that occur in the test chamber. In any case, DOE may consider revisions to the requirements in the future if testing shows that they can be revised further to both improve test repeatability and allow more flexibility in making pressure measurements.

3. Revised EER and COP Interpolation Method for Units Equipped With Variable-Speed Compressors

In the August 2016 SNOPR, DOE proposed to require use of bin-by-bin interpolations for all variable-speed units (including variable-speed multi-split and multi-head mini-split systems), to calculate performance when operating at an intermediate compressor speed to match the building cooling or heating load. This method consists of using interpolation of EER or COP for each temperature bin based on the estimates of capacity and power input for the specific bin temperature. (EER is equal to cooling capacity divided by power input, while COP is proportional to heating capacity divided by power input.) 81 FR at 58175 (Aug. 24, 2016)

Nortek, JCI, Mitsubishi, Carrier, Rheem, Ingersoll Rand and AHRI expressed support for DOE's proposal but stated concerns that it would impact ratings and would, as a result, be more appropriate for inclusion in appendix M1 as opposed to Appendix M. (Nortek, No. 22 at p. 9; JCI, No. 24 at p. 12; Mitsubishi, No. 29 at p. 2; Carrier, No. 36 at p. 6; Rheem, No. 37 at p. 3; Ingersoll Rand, No. 38 at p. 4; AHRI, No. 27 at p. 11) AHRI also commented that its members were in the process of collecting data on the impact this proposed change would have on ratings and committed to providing additional information to the Department within 30 days of the close of the comment period. (AHRI, No. 27 at p. 11) DOE notes that the additional data were not provided. Goodman also requested DOE implement this change as part of appendix M1. (Goodman, No. 39 at p. 6) Unico recommended that this proposal be moved to appendix M1, and if it remains as an appendix M change, DOE should allow that the higher rating of both methods be used, but only if the bin-by-bin method results in a failure. (Unico, No. 30 at p. 3–4) Lennox, CA IOU, ACEEE, NRDC, and ASAP, and NEEA all supported DOE's proposal. (Lennox, No. 25 at p. 12; CA IOU, No. 32 at p. 4; ACEEE, NRDC, and ASAP, No. 33 at p. 6; NEEA, No. 35 at p. 2)

Central air conditioning heat pumps include single-speed, two-speed, and variable-speed products, all within the same product class that when tested in accordance with the DOE test procedure will have different measured efficiencies. Pursuant to 42 U.S.C. 6293(e), DOE is required to determine to what extent, if any, the proposed test procedure would alter the measured efficiency of the covered product. DOE proposed changes to the interpolation method for variable speed units only. For single-speed and two-speed products there would be no change in measured efficiency because they would not be impacted by this change in test procedure. However, variable-speed products would be impacted by this change in test procedure, so the measured efficiency would change.

Where an amended test procedure would alter measured efficiency, EPCA requires DOE to amend an energy conservation standard by measuring, under the amended test procedure, a sample of representative products that minimally comply with the standard. In this case, minimally compliant units are those with single-speed technology. Consistent with the statute, DOE has tested a representative sample of covered products that minimally comply with the existing standard. EPCA requires that the amended standard should constitute the average of the energy efficiency of those units, determined under the amended test procedure. As a result of that testing, DOE has determined that there is no change in measured average energy efficiency for single-speed units between the current test procedure and the amended test procedure. Thus, under 42 U.S.C. 6293(e)(2), the amended standard applicable to the amended test procedure and the current standard applicable to the amended test procedure are the same. As a result, DOE does not need to amend the existing standard to require that representations of variable-speed heat pumps be based on the amended test procedure in appendix M.

If DOE were to include this change in appendix M, Goodman requested that DOE allow industry up to two years to re-test and re-calculate SEER and HSPF, by either modifying the implementation date for this provision or by issuing a policy of non-enforcement for this provision. (Goodman, No. 39 at p. 6) DOE notes that this proposal would not

require additional testing. The proposed change only impacts how ratings are calculated based on the new interpolation method, not the data that is measured or how it is measured. If manufacturers have test data that is otherwise valid under the amended test procedure, there would be no reason to retest solely because of the change in the way represented values for variable speed heat pumps are calculated.

Several commenters suggested that because the change to bin-by-bin interpolation for variable speed heat pumps might cause changes in ratings, DOE should not require the new method in Appendix M. Commenters did not explain why a simple change in ratings would warrant a decision to postpone the change in method, but DOE has considered three possibilities. First, commenters may be concerned about the work to comply with the new method. However, as noted above, the new interpolation method is only a matter of calculation; it will require no new tests. DOE believes that the burden of recalculation using existing test data will be minimal; Appendix M will specify how to perform the bin-by-bin interpolation, and relatively simple revision to a spreadsheet would suffice to implement this method as a substitute for the quadratic method required under the prior test procedure. Second, commenters may be concerned about the cost of revising labels and other representation documents to reflect the new ratings. Third, some commenters may object because if the new method results in a decreased rating, that change will make the affected models appear less efficient to potential buyers.

With respect to these second and third concerns, DOE believes that the inaccuracy of the current method warrants the change. As the August 2016 SNOPR explained, the quadratic interpolation method can produce inaccurate results. For HSPF the quadratic method can produce a value up to 7.9% different from what the bin-by-bin method produces (and DOE regards the latter as more accurate). Thus, for some equipment the rated HSPF is overstated, with respect to a fair measure of efficiency, by as much as 7.9%. A buyer using such equipment would consume 7.9% more energy, at 7.9% more cost, than expected based on the rating. DOE believes that amount is a significant difference. By contrast, the regulation requires a represented cooling capacity to be within 5% of the average measured cooling capacities, and it permits rounding of figures to approximately 1% precision (200 Btu/h for a 20,000 Btu/h system). Using 1% and 5% as indicators of what amount of error in a rating is significant, DOE believes it is important to correct an interpolation method that generates, for some models, larger errors. Of course, if a rating based on the old method is still valid—including by being within the regulation's tolerances with respect to recalculated values—a manufacturer could choose whether or not to revise the rating.

For these reasons, DOE is adopting this proposal both in appendix M and appendix M1 in this final rule.

4. Outdoor Air Enthalpy Method Test Requirements

In the August 2016 SNOPR, DOE proposed modifications to requirements when using the outdoor air enthalpy method as the secondary test method, including that the official test be conducted without the outdoor air-side test apparatus connected. 81 FR at 58175–58176 (Aug. 24, 2016)

During the August 26, 2016 public meeting, Carrier suggested that the proposal to require a heat balance only for the full-load cooling test and, for a heat pump, the full-load heating test be extended to other secondary capacity measurement methods, including to use of the refrigerant enthalpy method. Carrier contended that it can be difficult to get an energy balance for some operating conditions, particularly for variable-speed systems, when there is insufficient subcooling or superheat.[10] (Carrier, Public Meeting Transcript, No. 20 at pp. 38–39) Ingersoll Rand agreed with this suggestion; Goodman also agreed and indicated that the issue applies for tests of single-stage, two-stage, and variable-speed systems for the heating mode test conducted in 17 °F outdoor temperature. (Ingersoll Rand, Public Meeting Transcript, No. 20 at p. 39; Goodman, Public Meeting Transcript, No. 20 at p. 40)

JCI, Lennox, Carrier, Ingersoll Rand, Goodman and AHRI agreed with DOE on this proposal but recommended that the ducted test be a 30-minute test. (JCI, No. 24 at p. 12; Lennox, No. 25 at p. 12; Carrier, No. 36 at p. 7; Ingersoll Rand, No. 38 at p. 4; Goodman, No. 39 at p. 13; AHRI, No. 27 at p. 11–12) Carrier, Ingersoll Rand, Goodman and AHRI also suggested DOE similarly only require balance checks for the A_2 and $H1_2$ (or $H1_N$) tests for the refrigerant enthalpy method. (Carrier, No. 36 at p. 7; Ingersoll Rand, No. 38 at p. 4; Goodman, No. 39 at p. 13; AHRI, No. 27 at p. 11–12) In addition, AHRI and Ingersoll Rand suggested DOE eliminate the five consecutive readings for verifying the primary capacity measurements. (AHRI, No. 27 at p. 11–12; Ingersoll Rand, No. 38 at p. 4) CA IOU and Rheem agreed with DOE's proposal. (CA IOU, No. 32 at p. 4; Rheem, No. 37 at p. 3)

DOE agrees that validation of proper capacity measurement for cooling and heating modes for full-load operation is sufficient to show that the indoor air enthalpy method is being applied properly and gives an accurate measurement. Hence, use of the secondary method and achieving an energy balance for all load levels in each operating mode is not necessary. DOE notes that systems with capacity greater than 135,000 Btu/h are tested without any requirement for a secondary capacity check. (American Society of Heating Refrigeration, and Air-Conditioning Engineers (''ASHRAE'') Standard 37–2009 (''ASHRAE 37–2009''), which is incorporated by reference into the DOE test procedures for both residential and commercial air conditioners, indicates in Table 1 that a single method is used for systems with a cooling capacity greater than 135,000 Btu/h.) Further, DOE believes this modification will help to reduce test burden. The situation discussed in the public meeting and written comments, in which, when using the refrigerant enthalpy method as the secondary test method, a heat balance cannot be calculated for some conditions due to subcooling or superheat being too low, would technically make completion of a valid test impossible, according to the current test procedure, without resorting to an alternative secondary method. DOE recognizes that use of different secondary methods for different parts of the test would significantly increase test burden. Hence, DOE is modifying the test procedure to require use of a secondary capacity measurement that agrees with the primary capacity measurement to within 6 percent only for the cooling full load test and, for heat pumps, for the heating full load test.

DOE has decided to change the names for ''ducted'' and ''non-ducted'' outdoor air enthalpy methods to avoid confusion with certain product types. Specifically, DOE is adopting the new name ''free outdoor air test'' for non-ducted outdoor air enthalpy test, and ''ducted outdoor air test'' for ducted outdoor air enthalpy test. In this final rule, DOE is also

[10] In this context, subcooling refers to the difference between the saturated temperature associated with the pressure of the refrigerant liquid exiting the outdoor unit (in cooling mode) and the temperature of the liquid. Similarly, superheat refers to the difference between the temperature of the refrigerant exiting the indoor unit (in cooling mode) and the saturated temperature associated with the pressure of this refrigerant. The enthalpy of the refrigerant at these locations generally cannot be determined if these values are zero.

adopting a 30-minute ducted outdoor air test with measurements at five-minute intervals, and eliminating from section 3.11.1.2 the requirement of five consecutive readings for verifying primary capacity measurements.

DOE's proposed changes to outdoor air enthalpy method requirements in the August 2016 SNOPR included revision to section 3.11.1.2 that removed the reference to section 8.6.2 of ASHRAE 37–2009. 81 FR at 58209 (Aug. 24, 2016). However, the key points of section 8.6.2 still apply for the revised approach for the outdoor air enthalpy method. The finalized test procedure retains the reference to this section.

5. Certification of Fan Delay for Coil-Only Units

In the August 2016 SNOPR DOE proposed to amend its certification report requirements to require coil-only ratings to specify whether a time delay is included, and if so, the duration of the delay used. DOE proposed to use the certified time delay for any testing to verify performance. 81 FR at 58176 (Aug. 24, 2016)

Nortek, Ingersoll Rand, Carrier, JCI, Rheem, Goodman and AHRI suggested that the certification of the indoor fan off delay should not be public information. (Nortek, No. 22 at p. 2; Ingersoll Rand, No. 38 at p. 3; Carrier, No. 36 at p. 7; JCI, No. 24 at p. 13; Rheem, No. 37 at p. 3; Goodman, No. 39 at p. 12; AHRI, No. 27 at p. 12) ADP agreed that the duration of the indoor fan time delay needs to be specified but should be a part of the public product-specific information. ADP commented that making this information public improves the accuracy of ICM AEDM ratings. (ADP, No. 23 at p. 4) Lennox and ACEEE, NRDC, and ASAP supported DOE's proposal. (Lennox, No. 25 at p. 12; ACEEE, NRDC, and ASAP, No. 33 at p. 6)

DOE understands that manufacturers want to keep fan delay setting information private. Given that DOE proposed to require this information in the section of additional product-specific information that would not be posted to DOE's public certification database, DOE has decided to adopt this proposal in this final rule. In response to ADP, DOE will address concerns regarding reporting for ICMs through a separate process.

6. Normalized Gross Indoor Fin Surface Area Requirements for Split Systems

To help ensure that the test procedure results in ratings that are representative of average use, in the August 2016 SNOPR DOE, proposed to include a provision that would prevent testing certain combinations that are not representative of single-split systems with coil-only indoor units that are commonly distributed in commerce. Specifically, DOE proposed to limit the normalized gross indoor fin surface (NGIFS) for the indoor unit used for single-split-system coil-only tests to no greater than 2.0 square inches per British thermal unit per hour (sq.in./Btu/hr). NGIFS is equal to total fin surface multiplied by the number of fins and divided by system capacity. 81 FR at 58177 (Aug. 24, 2016)

In the August 2016 Public Meeting, Ingersoll Rand commented that it did a rough calculation for a micro channel heat exchanger and determined the NGIFS to be 0.81. Ingersoll Rand commented that this indicates that there are problems with looking at today's technology and coming up with a value for NGIFS. Ingersoll Rand further commented that in coming up with a value for NGIFS, it needs to be ensured that doing so does not create issues or loopholes. (Ingersoll Rand, Public Meeting Transcript, No. 20 at p. 45) Rheem commented that there needs to be further study on the 2.0 value of NGIFS before making a decision in order to not limit future efficiencies. (Rheem, Public Meeting Transcript, No. 20 at p. 46) Carrier/UTC similarly commented that there may be unforeseen consequences of limiting design options that manufacturers will have to comply with the efficiency standards. (Carrier/UTC, Public Meeting Transcript, No. 20 at pp. 47–48) Rheem also commented that due to the complexity of the issue, the NGIFS criteria should go in appendix M1, not in appendix M. (Rheem, Public Meeting Transcript, No. 20 at p. 46) Johnson Controls commented that units that are above 2.0 today would need to be retested, and the ratings for these units would most likely change. JCI commented that for this reason, they believe that the proposal for NGIFS belongs in appendix M1, not in appendix M. (JCI, Public Meeting Transcript, No. 20 at pp. 50–51) Allied commented that the values that DOE is proposing are reasonable, but that there are further considerations associated with the different technologies that apply. Allied also commented that, based on their review, future standard levels could be even more stringent and still allow some latitude in design approaches. (Allied, Public Meeting Transcript, No. 20 at pp. 49–50) JCI also commented that usually normalized values do not have dimensions and questioned whether the proposal takes into account fin and tube spacing. (JCI, Public Meeting Transcript, No. 20 at pp. 56–59)

Nortek and AHRI opposed DOE's proposal and commented that DOE does not have the authority to regulate the design of residential central air-conditioners and heat pumps, so all NGIFS restrictions should be removed from both appendix M and M1. AHRI commented that AHRI would like to aid the Department to address this ''golden blower'' issue in a way which does not put restrictions on design and is both refrigerant and technology neutral. AHRI proposed to develop a solution within 30 days of the close of the August 2016 SNOPR comment period, but they did not provide additional input. (Nortek, No. 22 at p. 10; AHRI, No. 27 at p. 12)

JCI commented that while DOE stated in the SNOPR that the 2.0 limit of NGIFS does not affect 95% of tested combinations, this also showed there are current systems that will not be compliant. JCI expressed concern that if such changes are made to appendix M, standards adjustments would be required. JCI recommended that DOE limit NGIFS in M1 only and the DOE recommended value of 2.5 appears to be a valid target. (JCI, No. 24 at p. 13)

Lennox commented that while it is reasonable to use ⅜″ round tube, plate fin coil in the NGIFS definition for outdoor units with no match, DOE must revise the definition for other split system products because there are other tube diameters and technologies used across the industry. Lennox recommended that DOE expand the definition to include all tube types and fin surfaces. Lennox supported DOE's proposal on the NGIFS calculation and proposed limit. (Lennox, No. 25 at p. 6–8) Carrier opposed DOE's proposal to limit NGIFS for the indoor unit and preferred DOE not restrict design options as that could impact consumer choices when different refrigerants are used in the future or lessen a manufacturer's ability to optimize for hot dry climates. Additionally, Carrier commented that this proposal does not address microchannel coils or any other coil tube diameter besides ⅜″. (Carrier, No. 36 at p. 7)

Rheem objects to the limitation of a fixed value for NGIFS and proposed that indoor coil area should be determined by balancing with the outside coil area. (Rheem, No. 37 at p. 3–4) Ingersoll Rand opposed the proposed NGIFS limit because it is only appropriate for 3/8″ tube coils. Ingersoll Rand commented that it would be better to set a limit on coil cabinet volume based on coils sold in the 5 years prior to the elimination of a refrigerant. (Ingersoll Rand, No. 38

at p. 4) Goodman also expressed concern that this requirement on the tested combination may inhibit future designs and did not support the proposed restrictions. Goodman suggested that some requirements in cabinet width might be appropriate and that DOE and AHRI should work together to develop a reasonable restriction. (Goodman, No. 39 at p. 7–8)

ACEEE, NRDC, and ASAP supported DOE's proposal and also suggested DOE should consider the input of manufacturers who may have a few models designed for hot, dry climates where the apparent evaporator surface oversizing can improve rated performance. (ACEEE, NRDC, and ASAP, No. 33 at p. 6) CA IOU and NEEA agreed with DOE's proposal. (CA IOU, No. 32 at p. 4; NEEA, No. 35 at p. 3)

In response to JCI, valid normalized values may have units. For example, energy efficiency ratio is a normalized value representing capacity per electric power input with units of British thermal units (Btu) per Watt-hour (Btu/W-h). Additionally, the NGIFS does take into consideration the fin spacing—the number of fins, N_f, is a parameter in the equation to determine NGIFS. As an example, consider two indoor coils with the same finned length—the coil with the higher fin density will have more fins and thus a higher NGIFS. It is true, however, that NGIFS does not include the impact of tube spacing.

Addressing the Ingersoll Rand and Allied comments, DOE acknowledges that NGIFS does not provide as good a representation of the heat transfer performance of microchannel indoor coils as that of conventional tube-fin indoor coils, and the development of an appropriate equivalent value for this newer technology will be important in order to prevent loopholes in the requirement. However, DOE is not aware of any significant current market share of systems using microchannel indoor coils, and so good information to use as the basis for development of NGIFS limits for this technology is not yet available. Further, the likely lower value of NGIFS for microchannel coils will mean that imposing a limit based on conventional coil technology would not limit use of microchannel coils before a better approach is developed. DOE has not developed an appropriate approach at the moment, but could consider adopting an NGIFS approach for microchannel indoor coils in a future rulemaking.

Because DOE's NGIFS analysis for coil-only systems does not consider tube diameters other than ⅜ inches and fin types other than plate fins, as well as the units currently on the market that would not meet the 2.0 NGIFS limit (*e.g.* as indicated by the JCI comment), the proposed approach does not resolve DOE's concern while maintaining a reasonable test procedure for units with different designs. Accordingly, DOE is not adopting the NGIFS requirement in this final rule for either appendix M or appendix M1. DOE will consider how best to address this issue in the future.

7. Modification to the Test Procedure for Variable-Speed Heat Pumps

The August 2016 SNOPR proposed changes to the test procedure of appendix M for variable-speed heat pumps to allow more flexibility in the design and testing of these products. 81 FR at 58177–79 (Aug. 24, 2016). The June 2016 final rule imposed restrictions on the compressor speeds that could be used in testing, indicating that full speed must be the same speed for all heating mode operating conditions. DOE adopted this approach based on the observation that extrapolation of performance outside of the range of conditions used for testing can lead to unreasonable results if the speeds are allowed to be different for the different test conditions. 81 FR at 37029 (June 8, 2016). However, the final rule discussed stakeholder comments regarding heat pumps that improve heating mode performance by using different compressor speeds at lower ambient temperatures, and indicated that consideration would be given in the future to test procedure revisions that would better address their operation. *Id.* In the August SNOPR, DOE proposed a test procedure revision that would allow testing of heat pumps whose compressors operate at higher speeds in lower ambient temperatures. 81 FR at 58177–58179 (Aug. 24, 2016). Specifically, DOE proposed the following amendments for appendix M.

- A 47 °F full-speed test used to represent the heating capacity would be required and designated as $H1_N$. However, the 47 °F full-speed test would not have to be conducted using the same compressor speed (determined based on revolutions per minute (RPM) or power input frequency) as the full-speed tests conducted at 17 °F and 35 °F ambient temperatures, nor at the same compressor speeds used for the full-speed cooling test conducted at 95 °F. For appendix M, the compressor speed for the 47 °F full-speed test would be at the manufacturer's discretion, except that it would have to be no lower than the speed used in the 95 °F full-speed cooling test. Prior to the June 2016 final rule amendments, the heating capacity was represented either by the $H1_2$ test (for which the compressor speed guidance was not explicit), or, if a manufacturer chose to conduct what was then the optional $H1_N$ test, this latter test (using the same compressor speed as the full-speed cooling mode test) represented the heating capacity. Under the proposal in the August SNOPR, heating capacity would be represented only by the $H1_N$ test, which would be mandatory, while the compressor speed would be at the manufacturer's discretion within a range from the speed used for the 95 °F full-speed cooling test to the speed used for the full-speed 17 °F test.
- The full-speed tests conducted at 17 °F and 35 °F ambient temperatures would still have to use the same speed, which would be the maximum speed at which the system controls would operate the compressor in normal operation in a 17 °F ambient temperature, although the 35 °F full-speed test would remain optional.
- It would be optional to conduct a second full-speed test at 47 °F ambient temperature at the same compressor speed as used for the 17 °F test, if this speed is higher than the speed used for the $H1_N$ test described in this preamble. This test would be designated the $H1_2$ test. Because DOE does not expect that an $H1_N$ test would ever use a higher compressor speed than used for the full-speed 17 °F test, the proposed test procedure would not provide for this situation.
- If no 47 °F full-speed test were conducted at the same speed as used for the 17 °F full-speed test, standardized slope factors for capacity and power input would be used to estimate the performance of the heat pump for the 47 °F full-speed test point for the purpose of calculating HSPF.
- The capacity measured for the $H1_N$ test would be used in the calculation to determine the design heating requirement.

In addition, DOE proposed that the $H1_N$ test, at 47 °F ambient temperature, be conducted to represent nominal heat pump heating capacity, but that there would be no specific compressor speed requirement associated with it for appendix M, except that it be no lower than the speed used for the 95 °F full-speed cooling test. Under the proposal, if the $H1_N$ test did not use the same speed as is used for the 17 °F full-speed heating test, it would affect the HSPF calculation only through its influence on the design heating requirement, since the standardized slope factors would be used to represent full-speed heat pump performance. 81 FR at 58179 (Aug. 24, 2016)

A number of manufacturers and AHRI recommended the proposed changes should be part of appendix M1 rather than appendix M. (Rheem, Public Meeting Transcript, No. 20 at pp. 54–55; Rheem, No. 37 at p. 4; Carrier, No. 36 at p. 2; Nortek, No. 22 at p. 11; AHRI, No. 27 at p. 13; Mitsubishi, No. 29 at p. 2–3) Carrier commented at the public meeting that the proposals may be good, but that there had not been sufficient time to thoroughly review them, adding that a key concern is avoiding any potential need to retest products. (Carrier/UTC, Public Meeting Transcript, No. 20 at pp. 55). Unico recommended moving the slope factor change and the proposal for compressor speed at 47 °F test to appendix M1. (Unico, No. 30 at p. 4)

JCI recommended the proposal that the $H1_2$ test be conducted at maximum speed should be made optional, and the use of slope factors should be permitted if the test is not run. JCI commented that the standardized slope factors predict performance fairly closely, but can lower the HSPF by as much as 0.5 HSPF, and requested to move this change to M1. Additionally, JCI objected to DOE's proposal on $H1_N$ test and commented that if a manufacturer wishes to rate the heating capacity of their units at 47 °F at a speed above the A_2 speed, they should be permitted to do so. (JCI, No. 24 at p. 14)

Goodman supported DOE's proposal to require a full-speed test at 47 °F to be designated $H1_N$. However, Goodman does not support the proposal to mandate that the compressor speed for this test be equal to or higher than the cooling full compressor speed. In addition, although Goodman generally supported DOE's proposal regarding the standardized slope factors to be used if no 47 °F test is run using the same compressor speed as the $H3_2$ test, Goodman commented that the datasets DOE's contractor have used to set the standardized slopes are not appropriate. According to Goodman, developing ratios of capacity based on certified heating capacities can lead to errors because ratings might be conservative. Further, Goodman asserted that it would be possible for models to be counted more than once, or that a limited number of an appropriate cross section of representative models would be included. Additionally, according to Goodman, varying technologies could have different slopes. Goodman suggested that DOE work with AHRI and manufacturers to review real test data. Goodman also supported the optional 5 °F test and suggested DOE to take a further step to provide an optional 5 °F test for two-speed and single-speed heat pumps. (Goodman, No. 39 at p. 5–7)

AHRI suggested that a test procedure similar to triple-capacity heat pumps should be made an optional procedure for variable-speed heat pumps. (AHRI, No. 27 at p. 13)

EEI strongly recommended that the 5 °F test and any additional considered test should remain optional. EEI also suggested that DOE should require tests and information be published for all furnaces and boilers at the same temperatures as for heat pumps. (EEI, No. 34 at p. 2)

Carrier supported DOE's modification to allow the $H1_N$ speed to be any speed between the 17 °F full heating speed and 95 °F full cooling speed. (Carrier, No. 36 at p. 8)

Lennox, ACEEE, NRDC, and ASAP, and NEEA supported DOE's proposals for revising the variable-speed heat pump test methods in appendix M. (Lennox, No. 25 at p. 13; ACEEE, NRDC, and ASAP, No. 33 at p. 7; NEEA, No. 35 at p. 3)

DOE considered the requests to move the proposed variable-speed heat pump test method amendments to appendix M1 and other detailed comments regarding specific aspects of the amendments. DOE revised part of its proposal as discussed later in this section. DOE's intention with the changes to the variable-speed heat pump test procedure of appendix M was to allow the tests conducted previously (*i.e.,* prior to the effective date of the June 2016 final rule) to still be used to represent heat pump performance, while preventing use of extrapolation of the performance below 17 °F using the results of tests conducted at different speeds at 17 °F and 47 °F. For this reason, DOE is not finalizing some aspects of its proposal for appendix M, and instead is finalizing them only for appendix M1.

DOE believes that the standardized slope factors (or use of same-speed tests, if a manufacturer does prefer to retest rather than use the standardized slope factors) would provide more accurate representation of heat pump performance. As discussed in section III.B.3, pursuant to 42 U.S.C. 6293(e), DOE is required to determine to what extent, if any, the proposed test procedure would alter the measured efficiency of the covered product. DOE proposed changes to heating mode test procedure for variable speed units only. For single-speed and two-speed products there would be no change in measured efficiency because they would not be impacted by this change in test procedure. However, variable-speed products would be impacted by this change in test procedure, so the measured efficiency may change.

Where an amended test procedure would alter measured efficiency, EPCA requires DOE to amend an energy conservation standard by measuring, under the amended test procedure, a sample of representative products that minimally comply with the standard. In this case, minimally compliant units are those with single-speed technology. Consistent with the statute, DOE has tested a representative sample of covered products that minimally comply with the existing standard. EPCA requires that the amended standard should constitute the average of the energy efficiency of those units, determined under the amended test procedure. As a result of that testing, DOE has determined that there is no change in measured average energy efficiency for single-speed units between the current test procedure and the amended test procedure. Thus, under 42 U.S.C. 6293(e)(2), the amended standard applicable to the amended test procedure and the current standard applicable to the amended test procedure are the same. As a result, DOE does not need to amend the existing standard to require representations of variable-speed heat pumps to be based on the amended test procedure in appendix M. Therefore, DOE is finalizing aspects of its proposal for appendix M, including the use of standardized slope factors, which might require recalculation of HSPF for variable-speed unit.

DOE believes that Unico's comment about the ''changing the slope factors'' may have been a comment regarding the heating load line equation slope factor rather than the standardized slope factors associated with the appendix M variable speed heat pump proposal. If so, the change was proposed only for appendix M1. If not, DOE's discussion regarding the standardized slope factors in the above paragraph responds to Unico's comment.

Based on the comments received, DOE concluded that the proposal details that commenters believed would lead to a need to retest are (a) requiring the compressor speed for the $H3_2$ and $H2_2$ tests to be the maximum speed at which the system controls would operate the compressor in normal operation in a 17 °F ambient temperature, and (b) requiring the compressor speed for the $H1_N$ test to be no lower than the for the A_2 test.

To resolve the first of these issues, DOE is adopting this requirement in appendix M1, but not appendix M. However, for appendix M, DOE is amending the proposal to require that

the compressor speeds used for the $H3_2$ and $H2_2$ tests be the same (if the optional $H2_2$ test is conducted), and will require that the compressor frequency that corresponds to maximum speed at which the system controls would operate the compressor in normal operation in a 17 °F ambient temperature be provided in the certification reports. However, DOE will not post this information to DOE's public certification database. DOE has added this reporting requirement in 10 CFR 429.16(e).

To resolve the second issue, DOE is revising its proposal to allow the compressor speed used for the $H1_N$ test to be lower than used for the A_2 test, provided that the $H1_N$ capacity is no lower than the A_2 cooling capacity. Goodman's comment regarding this issue states that it is normally the case that products on the market today have heating full compressor speed equal to or higher than the cooling full compressor speed, but Goodman believes this does not necessarily have to be the case. (Goodman, No. 39 at p. 6) While DOE agrees that such a possibility could exist, this is not a very strong statement regarding the existence of heat pumps with lower heating speed. Goodman's comment continues with an explanation that achieving roughly equivalent capacity in heating mode at 47 °F as in cooling mode at 95 °F would likely provide better performance at lower ambient temperatures. *Id.* These statements suggest that a reasonable compromise would be to allow lower $H1_N$ speed than A_2 speed as long as the $H1_N$ capacity is no lower, which is the approach that DOE has adopted in this final rule.

Similarly, JCI's comment that the compressor speed for the $H1_N$ test be allowed to be higher than the A_2 speed is consistent with the previously-stated approach that DOE is adopting in this final rule.

As for Goodman's suggestion regarding an optional 5 °F test for two-speed and single-speed heat pumps, DOE discusses this in section III.C.4, as part of its discussion of amendments to appendix M1.

With regard to AHRI's suggestion to add an optional test procedure for variable-speed heat pumps that is similar to the test for triple-capacity heat pumps, DOE considered this suggestion, but is declining to adopt these optional tests in this final rule because stakeholders have not been given an opportunity to comment on them. However, DOE may consider such an option in the future. In response to EEI's comment on making the proposed 5 °F test and any additional test points optional, DOE notes that it has not proposed nor adopted any new heating mode tests for heat pumps that are not optional, either in the June 2016 final rule, the August 2016 SNOPR, or this rulemaking.

In response to JCI's comment that conducting the $H1_2$ test at maximum speed should be made optional, DOE notes that this was optional as proposed and is optional in the test procedure adopted in this final rule.

In response to Goodman's comment about rigorous review of test data to develop the standardized slope factors, DOE requested data or suggestions regarding how they should be changed. 81 FR at 58179 (Aug. 24, 2016). However, such data were not provided. DOE notes that the standardized slope factors, which DOE derived from different data sources, some of which must have represented test data, were remarkably consistent. Further, if capacities reported for both 17 °F and 47 °F test points are conservative, it is not clear that there would be a dramatic difference in the calculated slope. Therefore, DOE has adopted the standardized slope factors proposed in the August 2015 SNOPR.

Regarding EEI's comment that furnace performance should be provided at the same temperatures and for at least two temperatures for both furnaces and CAC/HP, DOE is reluctant to impose that additional reporting burden at this time. The capacity and steady-state efficiency for furnaces does not vary significantly as a function of outdoor temperature. Thus, DOE is not convinced that the additional information would be of significant value to consumers.

8. Clarification of the Requirements of Break-In Periods Prior to Testing

In the August 2016 SNOPR, DOE proposed modifications to the test procedure to clarify the use of break-in, generalizing the requirement so that it applies regardless of who conducts the test, indicating that the break-in requirement applies for each compressor of the unit, and clarifying that the compressor(s) must undergo the certified break-in period (which may not exceed 20 hours) prior to any test period used to measure performance. 81 FR at 58179 (Aug. 24, 2016)

During the August 2016 Public Meeting, Ingersoll Rand commented that DOE's proposed rule was unclear about whether a compressor change-out is required if the compressor of a unit operates longer than the certified break-in period during product development or operation associated with test set-up prior to making the first measurement used to determine an efficiency representation. (Ingersoll Rand, Public Meeting Transcript, No. 20 at pp. 27–29).

Many stakeholders commented that changing out compressors during testing is a significant burden. Nortek suggested that DOE extend the break-in period to 50 hours and allow the break-in to be conducted at ambient conditions. (Nortek, No. 22 at p. 11) ADP and Lennox commented that the 20 hour maximum should remain in place for any verification, enforcement or other non-development testing. ADP also suggested that the break-in period should be part of the public product-specific information so that ICMs can use this information for more accurate AEDM ratings. (ADP, No. 23 at p. 4; Lennox, No. 25 at p. 13) JCI suggested DOE allow up to 72 hours of break-in time and recommended allowing break ins to be conducted before installing the compressor in the unit, or to break in a system outside of the test cell. (JCI, No. 24 at p. 14) AHRI provided data from two compressor manufacturers and suggested DOE extend the allowed break-in period to 72 hours and permit the break-in to be conducted at ambient conditions. Rheem supported AHRI. (AHRI, No. 27 at p. 13–15; Rheem, No. 37 at p. 4) Unico supported a 72-hour minimum break-in period and commented that it is easy to run the unit outside the test chamber. (Unico, No. 30 at p. 5) Emerson commented that longer break-in will ensure repeatability and improve stability of compressor performance. Emerson also included data for several compressors. (Emerson, No. 31 at pp. 1–2) Carrier suggested that DOE allow a 72-hour break-in period and allow break in outside of test chamber while running tests on other units. (Carrier, No. 36 at p. 8–9) Ingersoll Rand, Goodman and the Joint Advocates commented that there is no technical reason to establish an upper limit for break-in. Goodman suggested to permit 72 hours of break-in. (Ingersoll Rand, No. 38 at p. 4; Goodman, No. 39 at p. 8–9; Joint Advocates, No. 33 at p.7) NEEA supported DOE's proposed modification of the test procedure. (NEEA, No. 35 at p. 3)

DOE does not intend to require a compressor change-out in the development test. Rather, the establishment of the 20-hour limit is to maintain test repeatability among labs regardless of who conducts the test. DOE notes that there is no requirement in the test procedure that the break-in has to be conducted in the psychrometric chamber, so manufacturers and technicians have an option, if needed, as to where break-in

is conducted. Finally, DOE adopted the 20-hour break-in limit in the June 2016 Final Rule, and the proposal in the August 2016 SNOPR was intended to clarify how this requirement applies for manufacturers and third party testing. Accordingly, DOE will not change the 20-hour limit in this final rule.

In response to ADP's comments, DOE will discuss concerns about reporting requirements for ICMs through a separate process.

9. Modification to the Part Load Testing Requirement of VRF Multi-Split Systems

In the August 2016 SNOPR, DOE proposed to remove the 5 percent tolerance for part load operation from section 2.2.3.a of appendix M when comparing the sum of nominal capacities of the indoor units and the intended system part load capacity for VRF multi-split units. 81 FR at 58179 (Aug. 24, 2016)

DOE received no objections on this proposal, and adopts it in this final rule.

10. Modification to the Test Unit Installation Requirement of Cased Coil Insulation and Sealing

In the August 2016 SNOPR, DOE proposed to remove the statement about insulating or sealing cased coils from appendix M, section 2.2.c, in order to avoid confusion regarding whether sealing of duct connections is allowed. 81 FR at 58180 (Aug. 24, 2016)

DOE received no objections on this proposal, and adopts it in this final rule.

11. Correction for the Calculation of the Low-Temperature Cut-Out Factor for Single-Speed Compressor Systems

Equation 4.2.1–3 in section 4.2.1 of appendix M, used for calculating the low-temperature cut-out factor for a blower coil system heat pump having a single-speed compressor and either a fixed-speed indoor blower or a constant-air-volume-rate indoor blower, or for a single-speed coil-only system heat pump, was incorrectly modified in the June 2016 final rule, in that the ''or'' initially in the equation was changed to an ''and''. 81 FR at 37107 (June 8, 2016). DOE was alerted to this issue in comments received in response to the notice of data availability (NODA) associated with the CAC/HP energy conservation standard rulemaking published October 27, 2016. 81 FR 74727. (Docket Number EERE–2014–BT–STD–0048, AHRI, No. 94 at p. 2; Unico, No. 95 at p. 1) The equation originally used ''or''. This modification could have changed the range of temperature bins for which it is assumed that the heat pump function has cut out. DOE has corrected this issue in this rulemaking in appendix M and also has adopted the correct equation in appendix M1.

12. Clarification of the Refrigerant Liquid Line Insulation

In the June 2016 Final Rule, DOE adopted clarifications for insulation requirements for the refrigerant lines in section 2.2(a) of appendix M. 81 FR at 37027 (June 8, 2016). In some cases, these requirements may indicate that the refrigerant lines should be uninsulated, exposed to the air. However, DOE notes that this requirement is not appropriate to apply for every inch of refrigerant line, particularly where it would conflict with the requirements in ASHRAE 41.1–1986 (RA 2006) (referenced in section 5.1.1 of ASHRAE 37–2009, which is incorporated by reference, see § 430.3). ASHRAE 41.1–1986 (RA 2006) requires in sections 8.2 and 8.3 that it is acceptable to use surface temperature measurement for the refrigerant liquid temperature, but that insulating material extending to at least 6 in. on each side of a surface temperature-measuring element should be installed on the line. The liquid temperature measurement may be essential, *e.g.* when the refrigerant enthalpy method is used as the secondary method (see section 2.10.3 of appendix M). Therefore, DOE has decided to clarify in the test procedure (in both appendices M and M1) that the refrigerant insulation requirement in section 2.2(a) does not apply for portions of the lines insulated according to the ASHRAE 41.1–1986 (RA 2006) requirements for temperature measurement.

Because this clarification simply addresses DOE's intention on how to correctly conduct the test procedure, DOE finds that there is good cause under 5 U.S.C. 553(b)(B) to not issue a separate notice to solicit public comment on this change.

C. Amendments to Appendix M1

The November 2015 SNOPR proposed to establish a new appendix M1 to Subpart B of 10 CFR part 430, which would be required to demonstrate compliance with any new energy conservation standards. 80 FR at 69397 (Nov. 9, 2015) In the August SNOPR, DOE continued to propose establishing a new appendix M1. Under DOE's proposal, the appendix would include all of the test procedure provisions in appendix M as finalized in the June 2016 final rule, all of the changes to appendix M that are finalized in this rulemaking as discussed in section III.B, and all of the additional changes discussed in this section III.C, which would be included only in the new appendix M1. DOE proposed to make appendix M1 mandatory for representations of efficiency starting on the compliance date of any amended energy conservation standards for CAC/HP (however, note the phase-in of testing requirements for certain proposed new requirements for split systems discussed in section III.A.1).

1. Minimum External Static Pressure Requirements

Most of the residential central air conditioners and heat pumps in the United States use ductwork to distribute air in a residence, using either a fan inside the indoor unit or housed in a separate component, such as a furnace, to move the air. External static pressure (ESP) for a CAC/HP is the static pressure rise between the inlet and outlet of the indoor unit that is needed to overcome frictional losses in the ductwork. The external static pressure imposed by the ductwork affects the power consumed by the indoor fan, and therefore also affects the SEER and/or HSPF of a CAC/HP.

a. Conventional Central Air Conditioners and Heat Pumps

The current DOE test procedure [11] stipulates that certification tests for ''conventional'' CACs and heat pump blower coil systems (*i.e.,* CACs and heat pump blower coil systems which are not small-duct, high-velocity systems) must be performed with an external static pressure at or above 0.10 in. wc. if cooling capacity is rated at 28,800 Btu/h or less; at or above 0.15 in. wc. if cooling capacity is rated from 29,000 Btu/h to 42,500 Btu/h; and at or above 0.20 in. wc. if cooling capacity is rated at 43,000 Btu/h or more.

DOE did not propose revisions to minimum external static pressure requirements for conventional blower coil systems in the June 2010 test procedure NOPR, stating that new values and a consensus standard were not readily available.[12] 75 FR 13223, 31228 (June 2, 2010). However, between the June 2010 test procedure NOPR and the November 2015 test procedure SNOPR, many stakeholders submitted comments citing data that suggested the minimum external static pressure requirements were too low and a value

[11] Table 3 of 10 CFR part 430 subpart B appendix M.

[12] In the June 2010 NOPR, DOE proposed lower minimum ESP requirements for ducted multi-split systems: 0.03 in. wc. for units less than 28,800 Btu/h; 0.05 in. wc. for units between 29,000 Btu/h and 42,500 Btu/h; and 0.07 in. wc. for units greater than 43,000 Btu/h. 75 FR at 31232 (June 2, 2010).

of 0.50 in. wc. would be more representative of field conditions. These comments are summarized in the November 2015 test procedure SNOPR. 80 FR at 69317–69318 (Nov. 9, 2015). Ultimately, in the November 2015 SNOPR, DOE proposed to adopt, for inclusion into 10 CFR part 430, subpart B, appendix M1, for systems other than multi-split systems and small-duct, high-velocity systems, minimum external static pressure requirements of 0.45 in. wc. for units with a rated cooling capacity of 28,800 Btu/h or less; 0.50 in. wc. for units with a rated cooling capacity from 29,000 Btu/h to 42,500 Btu/h; and 0.55 in. wc. for units with a rated cooling capacity of 43,000 Btu/h or more. DOE reviewed available field data to determine the external static pressure values it proposed in the November 2015 test procedure SNOPR. DOE gathered field studies and research reports, where publically available, to estimate field external static pressures. DOE previously reviewed most of these studies when developing test requirements for furnace fans. The 20 studies, published from 1995 to 2007, provided 1,010 assessments of location and construction characteristics of CAC and/or heat pump systems in residences, with the data collected varying by location, representation of system static pressure measurements, equipment's age, ductwork arrangement, and air-tightness.[13] 79 FR 500 (Jan. 3, 2014). DOE also gathered data and conducted analyses to quantify the pressure drops associated with indoor coil and filter foulants.[14] The November 2015 test procedure SNOPR provides a detailed overview of the analysis approach DOE used to determine an appropriate external static pressure value using these data. 80 FR at 69318–69319 (Nov. 9, 2015). DOE did not consider revising the minimum external static pressure requirements for SDHV systems in the November 2015 test procedure SNOPR. DOE did, however, propose to establish a new category of ducted systems, short duct systems, which would have lower external static pressure requirements for testing. DOE proposed to define ''short duct system'' to mean ducted systems whose indoor units can deliver no more than 0.07 in. wc. external static pressure when delivering the full load air volume rate for cooling operation. 80 FR at 69314. DOE proposed in the November 2015 SNOPR to require short duct systems to be tested using the minimum external static pressure previously proposed in the June 2010 NOPR for ''multi-split'' systems: 0.03 in. wc. for units less than 28,800 Btu/h; 0.05 in. wc. for units between 29,000 Btu/h and 42,500 Btu/h; and 0.07 in. wc. for units greater than 43,000 Btu/h. 75 FR at 31232 (June 2, 2010)

In response to the November 2015 SNOPR, the CAC/HP ECS Working Group members weighed in on appropriate minimum external static pressure requirements. (CAC ECS: CAC/HP ECS Working Group meeting, No. 86 at pp. 31–128) Recommendation #2 of the CAC/HP ECS Working Group Term Sheet states that the minimum required external static pressure for CAC/HP blower coil systems other than mobile home systems, ceiling-mount and wall-mount systems, low and mid-static multi-split systems, space-constrained systems, and small-duct, high-velocity systems should be 0.50 in. wc. for all capacities. (CAC ECS: ASRAC Term Sheet, No. 76 at p. 2)

In the August 2016 SNOPR, DOE proposed to adopt a minimum external static pressure requirement of 0.50 in. wc. for systems other than mobile home, ceiling-mount and wall-mount systems, low and mid-static multi-split systems, space-constrained systems, and small-duct, high-velocity systems based on DOE's analysis and consistent with the CAC/HP ECS Working Group Term Sheet. 81 FR at 58181 (Aug. 24, 2016)

During the August 2016 SNOPR public meeting and in written comments, many stakeholders expressed support for the new minimum external static requirements that DOE proposed. JCI, Goodman, Unico, AHRI, NEEA, Carrier/UTC, Lennox, Ingersoll Rand, and Nortek expressed support for DOE's proposal to require conventional systems to be tested at a minimum external static pressure of 0.5 in. wc. consistent with Recommendation #2 of the Term Sheet. (JCI, No. 24 at p. 15; Goodman, No. 39 at p. 13; Unico, No. 30 at p. 6; AHRI, No. 27 at p. 16; NEEA, No. 35 at p. 3; Carrier/UTC, No. 36 at p. 9; Lennox, No. 25 at p. 10; Ingersoll Rand, No. 38 at p. 5; Nortek, No. 22 at p. 11)

In light of DOE's analysis results, the Term Sheet recommendation, and support expressed in written comments, DOE is adopting a minimum external static pressure of 0.50 in. wc. for all capacities of conventional CAC/HP products in this final rule.

b. Non-Conventional Central Air Conditioners and Heat Pumps

In response to the November 2015 SNOPR and during the CAC/HP ECS Working Group negotiations, DOE also received comment regarding the minimum external static pressure requirements for mobile home systems, ceiling-mount and wall-mount systems, low and mid-static multi-split systems, space-constrained systems, and small-duct, high-velocity systems. 81 FR at 58181 (Aug. 24, 2016). The CAC/HP ECS Working Group included in its Final Term Sheet Recommendation #2, which is summarized in Table III–2. (CAC ECS: ASRAC Term Sheet, No. 76 at p. 2)

TABLE III–2—CAC/HP ECS WORKING GROUP RECOMMENDED MINIMUM EXTERNAL STATIC STATIC PRESSURE REQUIREMENT

Product description	Minimum external static pressure (in. wc.)
All central air conditioners and heat pumps except (2)–(7) below	0.50.
(2) Ceiling-mount and Wall-mount Blower Coil System	TBD by DOE.
(3) Manufactured Housing Air Conditioner Coil System	0.30.
(4) Low-Static System	0.10.

[13] DOE has included a list of citations for these studies in the docket for the furnace fan test procedure rulemaking. The docket number for the furnace fan test procedure rulemaking is EERE–2010–BT–TP–0010.

[14] Siegel, J., Walker, I., and Sherman, M. 2002. ''Dirty Air Conditioners: Energy Implications of Coil Fouling'' Lawrence Berkeley National Laboratory report, number LBNL–49757.

ACCA. 1995. Manual D: Duct Systems. Washington, DC, Air Conditioning Contractors of America.

Parker, D.S., J.R. Sherwin, et al. 1997. ''Impact of evaporator coil airflow in air conditioning systems'' ASHRAE Transactions 103(2): 395–405.

TABLE III–2—CAC/HP ECS WORKING GROUP RECOMMENDED MINIMUM EXTERNAL STATIC STATIC PRESSURE REQUIREMENT—Continued

Product description	Minimum external static pressure (in. wc.)
(5) Mid-Static System	0.30.
(6) Small Duct, High Velocity System	1.15.
(7) Space-Constrained	0.30.

Recommendation #1 of the CAC/HP ECS Working Group included suggested definitions for distinguishing the CAC/HP varieties included in Recommendation #2 (Table III–2) to enable the proper administration of the CAC/HP ECS Working Group's recommended minimum external static pressure requirements.

DOE agrees with the intent of Recommendation #1 and #2 of the CAC/HP ECS Working Group Term Sheet because DOE recognizes that the CAC/HP varieties included in these recommendations have unique installation characteristics that result in different field external static pressure conditions, and in turn, indoor fan power consumption in the field. Consequently, in the August 2016 test procedure SNOPR, DOE proposed to adopt definitions similar to those that the CAC/HP ECS Working Group recommended for space-constrained systems, low-static systems, and mid-static systems, as well as the recommended minimum external static pressure requirements for those products, to be more reflective of field conditions.

In the August 2016 SNOPR, DOE proposed to adopt the following definitions for the CAC/HP varieties included in Recommendations #1 and #2 in the CAC/HP ECS Working Group Term Sheet, which are slightly modified versions of those suggested in the Term Sheet, but reflect the same intent:

- *Ceiling-mount blower coil system* means a split system for which the outdoor unit has a certified cooling capacity less than or equal to 36,000 Btu/h and the indoor unit is shipped with manufacturer-supplied installation instructions that specify to secure the indoor unit only to the ceiling of the conditioned space, with return air directly to the bottom of the unit (without ductwork), having an installed height no more than 12 inches (not including condensate drain lines) and depth (in the direction of airflow) of no more than 30 inches, with supply air discharged horizontally.
- *Low-static blower coil system* means a ducted multi-split or multi-head mini-split system for which all indoor units produce greater than 0.01 in. wc. and a maximum of 0.35 in. wc. external static pressure when operated at the cooling full-load air volume rate not exceeding 400 cfm per rated ton of cooling.
- *Mid-static blower coil system* means a ducted multi-split or multi-head mini-split system for which all indoor units produce greater than 0.20 in. wc. and a maximum of 0.65 in. wc. when operated at the cooling full-load air volume rate not exceeding 400 cfm per rated ton of cooling.
- *Mobile home blower coil system* means a split system that contains an outdoor unit and an indoor unit that meet the following criteria: (1) Both the indoor and outdoor unit are shipped with manufacturer-supplied installation instructions that specify installation only in a mobile home with the home and equipment complying with HUD Manufactured Home Construction Safety Standard 24 CFR part 3280; (2) the indoor unit cannot exceed 0.40 in. wc. when operated at the cooling full-load air volume rate not exceeding 400 cfm per rated ton of cooling; and (3) the indoor unit and outdoor unit each must bear a label in at least ¼ inch font that reads ''For installation only in HUD manufactured home per Construction Safety Standard 24 CFR part 3280.''
- *Wall-mount blower coil system* means a split-system air conditioner or heat pump for which the outdoor unit has a certified cooling capacity less than or equal to 36,000 Btu/h and the indoor unit is shipped with manufacturer-supplied installation instructions that specify to secure the back side of the unit only to a wall within the conditioned space, with the capability of front air return (without ductwork) and not capable of horizontal airflow, having a height no more than 45 inches, a depth of no more than 22 inches (including tubing connections), and a width no more than 24 inches (in the direction parallel to the wall). 81 FR at 58181–58183 (Aug. 24, 2016)

In response to the August 2016 test procedure SNOPR, NEEA, Lennox, AHRI, Ingersoll Rand, Goodman, Nortek and UTC/Carrier expressed support for DOE's proposed minimum external static pressure requirements and definitions for all product types. (NEEA, No. 35 at p. 3; Lennox, No. 25 at p. 14; AHRI, No. 27 at p. 16; IR, No. 38 at p. 5; Goodman, No. 39 at p. 13; Nortek, No. 22 at p. 12; UTC/Carrier, No. 36 at p. 9)

In written comments, JCI, ADP and First Co. suggested that DOE modify its proposed definition for wall-mount blower coil system. JCI, ADP, and First Co. pointed out that these systems have common installations that do not meet DOE's proposed definition. JCI, ADP and First Co. stated that wall-mount units are not exclusively installed by securing the back of the unit to a wall within the conditioned space. Instead, wall-mount units are often mounted to adjacent wall studs or within an enclosure (*e.g.,* a closet) such that the front side of the unit is flush with the wall of the conditioned space. JCI, ADP, and First Co. recommended that DOE modify the definition of wall-mount blower coil system to allow for these types of installations. (JCI, No. 24 at p. 15; ADP, No. 23 at pp. 4–5; First Co., No. 21 at p. 4–5) ADP provided an example installation manual for an ADP wall-mount blower coil that provided instructions for the installation options mentioned. ADP suggested adding ''the ability'' and remove ''only'' from the proposed definition. (ADP, No. 23 at p 4) Mortex echoed ADP's suggested modifications to DOE's proposed definition for wall-mount blower-coil systems. (Mortex, No. 26 at p. 4)

DOE recognizes that wall-mount units are often installed as JCI, ADP, Mortex, and First Co. describe in their comments. In this final rule, DOE is modifying the definition proposed in the August 2016 test procedure SNOPR to maintain the intent of the Term Sheet but also allow for the ''flush-mount'' installations described by JCI, ADP, Mortex and First Co. DOE is adopting the following modified definition for ''wall-mount blower coil system'':

Wall-mount blower coil system means a split-system air conditioner or heat pump for which (a) the outdoor unit has a certified cooling capacity less than or equal to 36,000 Btu/h; (b) the indoor unit(s) is/are shipped with manufacturer-supplied installation instructions that specify mounting only by (1) securing the back side of the unit to a wall within the conditioned space, or (2) securing the unit to adjacent wall studs or in an enclosure, such as a closet, such that the indoor unit's front face is flush with a wall in the conditioned space; (c) has front air return without ductwork and is not capable of horizontal air discharge; and (d) has a height no more than 45 inches, a depth (perpendicular to the wall) no more than 22 inches (including tubing connections), and a width no more than 24 inches (parallel to the wall).

In response to the August 2016 test procedure SNOPR, DOE received comment on its proposed definition for ceiling-mount blower coil system. In its comments, First Co. stated that these systems have common installations that do not meet DOE's proposed definition. According to First Co., ceiling-mount indoor units are often installed in a furred down space, which requires that return air comes into the back of the unit either through a duct or through the furred down space. DOE understands a furred down space to be an area below ceiling level that is enclosed and finished (*e.g.,* using drywall and paint). First Co. also identified another common installation practice for ceiling-mount indoor units used in applications with dropped ceilings in which the indoor unit is equipped with an insulated box that is suspended such that the bottom of the unit is flush with the ceiling and return air comes into the bottom of the unit. First Co. recommended modifications to DOE's proposed definition for ceiling-mount blower coil system to allow for these other common installation types. (First Co., No. 21 at pp. 4–5)

DOE recognizes that ceiling-mount units are often installed as First Co. describes. In this final rule, DOE is modifying the definition proposed in the August 2016 test procedure SNOPR to maintain the intent of the Term Sheet but also allow for the installations described by First Co. DOE is adopting the following modified definition for ''ceiling-mount blower coil system'':

Ceiling-mount blower coil system means a split system for which (a) the outdoor unit has a certified cooling capacity less than or equal to 36,000 Btu/h; (b) the indoor unit(s) is/are shipped with manufacturer-supplied installation instructions that specify to secure the indoor unit only to the ceiling, within a furred-down space, or above a dropped ceiling of the conditioned space, with return air directly to the bottom of the unit without ductwork, or through the furred-down space, or optional insulated return air plenum that is shipped with the indoor unit; (c) the installed height of the indoor unit is no more than 12 inches (not including condensate drain lines) and the installed depth (in the direction of airflow) of the indoor unit is no more than 30 inches; and (d) supply air is discharged horizontally.

The CAC/HP ECS Working Group tasked DOE with determining the appropriate minimum external static pressure for ceiling-mount and wall-mount systems. During the CAC/HP ECS Working Group meetings, manufacturers of these systems suggested a minimum external static pressure requirement of 0.30 in. wc. (CAC ECS: CAC/HP ECS Working Group meeting, No. 88 at p. 31) However, the CAC/HP ECS Working Group did not adopt this as a recommendation primarily due to lack of time to thoroughly review the subject. In the August 2016 test procedure SNOPR, DOE proposed to specify a minimum external static pressure requirement of 0.30 in. wc. for ceiling-mount and wall-mount systems, consistent with manufacturers' recommendations.

In response to the August 2016 SNOPR, First Co. disagreed with DOE's proposed minimum external static pressure requirements for ceiling-mount and wall-mount blower coil systems. First Co. claimed that the minimum external static pressure requirement for these products should be no greater than 0.20 in. wc. According to First Co., ceiling-mount and wall-mount systems typically use limited length or short run duct work, which produces lower static pressure. First Co. contested that 0.30 in. wc. is unreasonably high for representing such ductwork and that the requirement will result in reductions in product ratings and negative impacts on small manufacturers and product availability. (First Co., No. 21 at pp. 3–4) NEEA, Lennox, AHRI, Ingersoll Rand, Goodman, and UTC/Carrier expressed support for DOE's proposed minimum external static pressure requirement of 0.30 in. wc. for these products. (NEEA, No. 35 at p. 3; Lennox, No. 25 at p. 14; AHRI, No. 27 at p. 16; IR, No. 38 at p. 5; Goodman, No. 39 at p. 13; UTC/Carrier, No. 36 at p. 9).

DOE recognizes that ceiling-mount and wall-mount systems use shorter duct runs than conventional systems, which will result in lower static pressure. For this reason, DOE proposed a lower minimum external static pressure requirement for these products relative to its proposed minimum external static pressure requirement for conventional systems. DOE disagrees with First Co. that 0.30 in. wc. is not representative of field-installed ceiling-mount and wall-mount systems because manufacturers of these products recommended 0.30 in. wc. during the CAC/HP ECS Working Group Negotiations. (Docket EERE–2014–BT–STD–0048, CAC/HP ASRAC Working Group Meeting, October 13, 2015, No. 88 at p. 21) In addition, publicly-available product literature for these products include airflow data tables that include performance at 0.30 in. wc. (Wall Mount Blower Coil Literature Example, No. 41 at p. 3) DOE understands that higher minimum external static pressure requirements will result in reductions to rated performance. These impacts will be considered and accounted for in the energy conservation standard levels set by the concurrent energy conservation standard rulemaking. Therefore, DOE is adopting 0.30 in. wc. as the minimum external static pressure requirement for ceiling-mount and wall-mount blower coil systems in this final rule.

Recommendation #2 of the Term Sheet includes a recommended minimum external static pressure for ''space-constrained'' products. The Term Sheet does not differentiate between space-constrained outdoor units paired with conventional indoor units from those paired with non-conventional indoor units. In the August 2016 SNOPR, DOE proposed that when space-constrained outdoor units are paired with conventional indoor units, the minimum external static pressure requirement for space-constrained systems recommended by the CAC/HP ECS Working Group, 0.30 in. wc., would not be appropriate. Consequently, DOE proposed to apply the minimum external static pressure requirement included for space-constrained products in the Term Sheet only to single- package space-constrained products or space-constrained outdoor units paired with space-constrained indoor units. 81 FR at 58163, 58182 (Aug. 24, 2016).

In written comments, AHRI and Nortek expressed concern with DOE's proposal to modify the external static pressure requirements when space-constrained outdoor units are paired with conventional indoor units. AHRI and Nortek stated that there is no definition of a ''space-constrained indoor unit'' (air handler). AHRI and Nortek added that a space-constrained

condensing unit rated using a conventional air handler at 0.5 in. wc would not be able to meet existing efficiency standards. According to AHRI and Nortek, size restrictions of space-constrained products require rating with an efficient conventional air handler as a matched system to meet existing standards. AHRI and Nortek submit that, by definition, space-constrained condensing units are all under 30,000 Btu/h, with limited applications. AHRI and Nortek concluded that the minimum external static pressure requirement for space-constrained systems recommended by the CAC/HP Working Group, 0.30 in. wc., was not only appropriate for these installations; they are required in order for manufacturers to offer these niche products, *i.e.* that DOE should not require use of 0.5 in. wc. for space-constrained system combinations using conventional air handlers. (AHRI, No. 27 at pp. 16–17; Nortek, No. 22 at p. 13).

In response to AHRI's and Nortek's comments, DOE understands that split-system space-constrained systems that comprise a space-constrained outdoor unit and conventional indoor unit are typically installed in homes with size restrictions that are different than homes in which conventional split-systems (*i.e.,* conventional outdoor and indoor unit) are typically installed. Space-constrained systems (regardless of whether paired with a conventional or non-conventional indoor unit) are more commonly installed in homes in which the system is installed in closer proximity to the conditioned space. Ductwork is typically shorter and less restrictive as a result. As such, the CAC/HP ECS Working Group recommended minimum external static pressure of 0.30 in. wc. is more representative. DOE is adopting 0.30 in. wc. for all space-constrained products in this final rule. DOE is adopting this provision because it will result in a test procedure that produces test results that measure the energy efficiency, energy use, or estimated annual operating cost of space-constrained products during a representative average use cycle. DOE is adopting this provision irrespective of comments regarding its implications on products' ability to meet standards. DOE will account for impacts to rated values in the concurrent energy conservation standard rulemaking.

In the August 2016 SNOPR, DOE proposed to adopt the CAC/HP ECS Working Group recommendations for minimum external static pressure requirements for low-static and mid-static systems. 81 FR at 58182–58183 (Aug. 24, 2016).

As mentioned, many stakeholders agreed with DOE's proposed minimum external static pressures and definitions for all product types. (NEEA, No. 35 at p. 3; Lennox, No. 25 at p. 14; AHRI, No. 27 at p. 16; IR, No. 38 at p. 5; Goodman, No. 39 at p. 13; Nortek, No. 22 at p. 12; UTC/Carrier, No. 36 at p. 9) Unico supported DOE's proposal, but voiced one concern. Unico recommended that DOE eliminate the mid-static product class, change the range for low static from 0.01 to 0.49 in. wc. so as not to overlap with the range for normal ducted systems, and to test those products as low-static (unless DOE would plan to establish a separate standard for mid-static systems). According to Unico, the mid-static products would be able to meet the low-static requirements without difficulty, so Unico would not separate these products into a separate class. Unico recommended that DOE add a requirement to the test procedure that both low and mid-static products should be labeled as ''low static'' with the maximum static clearly written on the product rating label, so that a manufacturer would be able to list the mid-static pressure on their literature and labels, while the product would still considered a low-static system (Unico, No. 30 at p. 5).

DOE does not agree with Unico's recommendation. Based on discussions during the CAC/HP ASRAC Working Group Negotiations, and as reflected in the Term Sheet recommendations, DOE understands that there are ducted multi-split and multi-head mini-split systems that are designed and installed to produce between 0.20 in. wc. and 0.65 in. wc. Testing these systems at 0.10 in. wc., as Unico recommends, would not be representative of field performance because they are typically installed in more restrictive applications, which results in higher fan energy consumption. In addition, testing these ''mid-static'' systems, at the same external static pressure as ''low-static,'' would not produce results reflective of relative performance. In the field, a ''mid-static'' system, which is typically installed in more restrictive applications, is expected to have higher fan energy consumption than a ''low-static'' system. Testing both types of systems at the same external static pressure would ignore this difference and would not reflect the increased fan energy consumption of the ''mid-static'' system compared to the ''low-static'' system. DOE is not establishing a separate product class or a separate standard for ''mid-static'' systems, as Unico infers. DOE is only establishing a differing test conditions for ''low-static'' and ''mid-static'' systems to reflect the differences in their application and resulting differences in field performance.

The CAC/HP ECS Working Group did not recommend changing the current minimum external static pressure required (1.15 in. wc.) for SDHV systems with a cooling or heating capacity between 29,000 to 42,500 Btu/h. However, the CAC/HP ECS Working Group recommended that 1.15 in. wc. also be used as the minimum external static pressure requirement for SDHV systems of all other capacities. Using a single minimum external static pressure value for all capacities of a given CAC/HP variety is consistent with the approach recommended by the Working Group for all CAC/HP varieties. In the August 2016 SNOPR, DOE proposed to adopt the Working Group recommendation for the minimum external static pressure requirement for SDHV systems. 81 FR at 58183 (Aug. 24, 2016).

DOE did not receive any negative comments regarding its August 2016 test procedure SNOPR proposed minimum external static pressure requirements for SHDV systems, and DOE is adopting these requirements in this final rule.

Table III–3 summarizes the minimum external static pressure requirements that DOE is adopting in this final rule.

TABLE III–3—MINIMUM EXTERNAL STATIC PRESSURE REQUIREMENTS

CAC/HP variety	Minimum external static pressure (in. wc.)
Conventional (*i.e.*, all central air conditioners and heat pumps not otherwise listed in this table)	0.50
Ceiling-mount and Wall-mount	0.30
Mobile Home	0.30

TABLE III–3—MINIMUM EXTERNAL STATIC PRESSURE REQUIREMENTS—Continued

CAC/HP variety	Minimum external static pressure (in. wc.)
Low-Static	0.10
Mid-Static	0.30
Small Duct, High Velocity	1.15
Space-Constrained (indoor and single-package units only)	0.30

c. Certification Requirements

In the August 2016 SNOPR, DOE proposed to establish the certification requirements for appendix M1 to require manufacturers to certify the kind(s) of CAC/HP associated with the minimum external static pressure used in testing or rating (*i.e.,* ceiling-mount, wall-mount, mobile home, low-static, mid-static, small duct high velocity, space-constrained, or conventional/not otherwise listed). In the case of mix-match ratings for multi-split, multi-head mini-split, and multi-circuit systems, manufacturers would be allowed to select two kinds. In addition, models of outdoor units for which some combinations distributed in commerce meet the definition for ceiling-mount and wall-mount blower coil system, would still be required to have at least one coil-only rating (which uses the 441W/1000 scfm default fan power value) that is representative of the least efficient coil distributed in commerce with the particular model of outdoor unit. Mobile home systems would also be required to have at least one coil-only rating that is representative of the least efficient coil distributed in commerce with the particular model of outdoor unit. Further, DOE proposed to specify a default fan power value of 406W/1000 scfm, rather than 441W/1000 scfm, for mobile home coil-only systems. Details of this proposal are discussed in detail in section III.C.2. 81 FR at 58183 (Aug. 24, 2016).

DOE did not receive any comments on the certification requirements regarding minimum external static pressure or default fan power. Comments on the minimum external static pressure requirements and default fan power are included in sections III.C.1 and III.C.2, respectively.

d. External Static Pressure Reduction Related to Condensing Furnaces

In the November 2015 SNOPR, DOE requested comment on its proposal to implement a 0.10 in. wc. reduction in the minimum external static pressure requirement for air conditioning units tested in blower coil (or single-package) configuration in which a condensing furnace is in the airflow path during the test. This issue was also discussed as part of the CAC/HP ECS Working Group negotiation process. In response to the November 2015 SNOPR, stakeholders commented that they did not support DOE's proposed reduction in the minimum external static pressure requirement because it would result in test results that are less representative of field energy use. (CAC TP: ADP, No. 59 at p. 12; Lennox, No. 61 at p. 20; NEEA and NPCC, No. 64 at p. 8; California IOUs, No. 67 at p. 6; Rheem, No. 69 at p. 17; ACEEE, NRDC, ASAP, No. 72 at p. 4) Recommendation #2 of the CAC/HP ECS Working Group Term Sheet reflects this sentiment, stating that DOE should not adopt its proposed reduction in minimum external static pressure required for units paired with condensing furnaces. (CAC ECS: CAC/HP ECS Working Group Term Sheet, No. 76 at p. 2).

In the August 2016 SNOPR, in light of public comments and the consensus of the CAC/HP ECS Working Group, DOE did not propose to adopt a reduced minimum external static pressure requirement for air conditioning units tested in blower coil (or single-package) configuration in which a condensing furnace is in the airflow path during the test. 81 FR at 58184 (Aug. 24, 2016).

In response to the August 2016 SNOPR, ADP agreed with removing the reduced ESP as it is not representative of actual installed performance. ADP also commented there were other more suitable means to drive the adoption of condensing furnaces. (APD, No. 23 at p. 4) NEEA, the Joint Advocates, UTC, Goodman, JCI, and Ingersoll Rand also supported this proposal. (NEEA, No. 35 at p. 3; Joint Advocates, No. 33 at p. 7; UTC, No. 36 at p. 10; Goodman, No. 39 at p. 11; JCI, No. 24 at p. 15; Ingersoll Rand, No. 38 at p. 5) Rheem also agreed with removing the reduced ESP, stating that its use could cause the representation of cooling efficiency to become similar to that with a non-condensing furnace, which would not reflect how the system would operate in the field. (Rheem, No. 37 at p. 5).

DOE did not receive any comments in favor of a reduced minimum external static pressure for systems tested with a condensing furnace. In light of stakeholder comments, DOE did not include a reduced minimum external static pressure requirement for these products in this final rule.

2. Default Fan Power for Rating Coil-Only Units

The default fan power value (hereafter referred to as ''the default value'') is used to represent fan power input when testing coil-only air conditioners, which do not include their own indoor fans.[15] In the current test procedure, the default value is 365 Watts (W) per 1,000 cubic feet per minute of standard air (scfm) and there is an associated adjustment to measured capacity to account for the fan heat equal to 1,250 British Thermal Units per hour (Btu/h) per 1,000 scfm (10 CFR part 430, subpart B, appendix M, section 3.3.d). The default value was discussed in the June 2010 NOPR, in which DOE did not propose to revise it due to uncertainty on whether higher default values would better represent field installations. 75 FR 31227 (June 2, 2010). In the November 2015 SNOPR, DOE proposed to update the default value to be more representative of field conditions (*i.e.,* consistent with indoor fan power consumption at the minimum required external static pressures proposed in the November 2015 SNOPR). In the November 2015 SNOPR, DOE used indoor fan electrical power consumption data from product literature, testing, and exchanges with manufacturers collected for the furnace fan rulemaking (79 FR 506, January 3, 2014) to determine an appropriate default value for coil-only products.[16] (80 FR 69318) DOE calculated the adjusted default fan power to be 441 W/1000 scfm. In the November 2015

[15] See 10 CFR part 430, subpart B, appendix M, section 3.3.d.

[16] For a complete explanation of DOE's methodology, see 80 FR at 69319–69320 (Nov. 9, 2015).

SNOPR, DOE proposed to use this value in appendix M1, while keeping the current default fan power of 365 W/1000 scfm in appendix M.

In response to the November 2015 SNOPR, many stakeholders supported raising the coil-only test default fan power to 441 W/1000 scfm to allow for more representative ratings of units. (CAC TP: NEEA and NPCC, No. 64 at p. 8; ACEEE, NRDC, and ASAP, No. 72 at p. 4; California IOUs, No. 67 at p. 2)

The CAC/HP ECS Working Group also discussed the default value as part of the negotiation process. Ultimately, the Working Group came to a consensus on a recommendation for the default value. Recommendation #3 of the CAC/HP ECS Working Group Term Sheet states that the default fan power for rating the performance of all coil-only systems other than manufactured housing products be 441W/1000 scfm. (CAC ECS: ASRAC Working Group Term Sheet, No. 76 at p. 3)

Consistent with the CAC/HP ECS Working Group Term Sheet, DOE maintained its previous proposal to use a default value of 441 W/1000 scfm for split-system air conditioner, coil-only tests in the August 2016 SNOPR. DOE also proposed to adjust measured capacity to account for the fan heat by 1,505 Btu/h per 1,000 scfm, consistent with 441W/1000 scfm. 81 FR at 58184 (Aug. 24, 2016). DOE proposed to use these values in appendix M1 of 10 CFR part 430 subpart B in place of the default fan power of 365 W/1000 scfm that had been used previously in appendix M.

Recommendation #3 of the CAC/HP ECS Working Group Term Sheet also stated that DOE should calculate an alternative default fan power for rating mobile home air conditioner coil-only units based on the minimum external static pressure requirement for blower coil mobile home units (0.30 in. wc.) suggested in recommendation #2 of the Term Sheet. (CAC TP: ASRAC Working Group Term Sheet, No. 76 at p. 3) As discussed in section III.C.1, the CAC/HP ECS Working Group included this recommendation because HUD requires less restrictive ductwork for mobile homes than for other types of housing, which reduces electrical energy consumption of the indoor fan. The default value used to rate coil-only mobile home systems should reflect this difference in field energy consumption to improve the field representativeness of the test procedure.

In the August 2016 test procedure SNOPR, DOE used the same aforementioned furnace fan power consumption data and methodology to calculate the appropriate default value for mobile home fan power consumption, which DOE found to be 406 W/1000 scfm. DOE proposed to use 406 W/1000 scfm and adjust cooling capacity by 1,385 Btu/h per 1,000 scfm for mobile home coil-only tests in the August 2016 test procedure SNOPR. 81 FR at 58163, 58183 (Aug. 24, 2016).

In response to the August 2016 SNOPR, AHRI, Nortek, Lennox, Ingersoll Rand, JCI, ACEEE, NRDC, ASAP, and Rheem supported DOE's proposal to use a default value of 441 W/1000 scfm for split-system air conditioner, coil-only tests. These stakeholders also supported a unique default fan power of 406 W/1000 scfm for rating mobile home coil-only units. (AHRI, No. 27 at p. 17; Nortek, No. 22 at p. 13; Lennox, No. 25 at p. 8; Ingersoll Rand, No. 38 at p. 5; JCI, No. 24 at p. 16; ACEEE, NRDC, and ASAP, No. 33 at p7; Rheem, No. 37 at p. 3) Carrier/UTC also expressed support for a default fan power value of 441 W/1000 scfm for split-system air conditioner, coil-only tests. (Carrier/UTC, No. 36 at p. 10) ADP and Lennox also expressed support for 406 W/1000CFM as a default fan power value for coil-only mobile home applications. (ADP, No., 23 at p.5, Lennox, No. 25 at p. 8) DOE did not receive any negative comments regarding the use of 441 W/1000 scfm or 406 W/1000 scfm as the default fan power values for conventional split-system or mobile home coil-only tests, respectively. DOE also did not receive any additional data to validate these values.

In light of stakeholder support and no adverse comments, DOE is adopting a default fan power value of 441 W/1000 scfm and capacity adjustment of 1,505 Btu/h/1000 scfm for non-mobile home coil-only systems and a default fan power value of 406 W/1000 scfm and capacity adjustment of 1,385 Btu/h/1000 scfm for mobile home coil-only systems.

In the August 2016 test procedure SNOPR, DOE proposed a definition for a mobile home coil-only system to appropriately apply the proposed default value for these kinds of CAC/HP. DOE proposed the following:

- *Mobile home coil-only system* means a coil-only split system that includes an outdoor unit and coil-only indoor unit that meet the following criteria: (1) The outdoor unit is shipped with manufacturer-supplied installation instructions that specify installation only for mobile homes that comply with HUD Manufactured Home Construction Safety Standard 24 CFR part 3280, (2) the coil-only indoor unit is shipped with manufacturer-supplied installation instructions that specify installation only in a mobile home furnace, modular blower, or designated air mover that complies with HUD Manufactured Home Construction Safety Standard 24 CFR part 3280, and (3) the coil-only indoor unit and outdoor unit each has a label in at least ¼ inch font that reads, ''For installation only in HUD manufactured home per Construction Safety Standard 24 CFR part 3280.'' 81 FR at 58163, 58185 (Aug. 24, 2016).

In written comments, Rheem, JCI, ACEEE, NRDC, and ASAP expressed support for DOE's proposed definition for mobile home coil-only system. (Rheem, No. 37 at p.5; JCI, No. 24 at p.16, ACEEE, NRDC, and ASAP, No. 33 at p.7)

Some stakeholders offered suggested improvements to the definition to better differentiate mobile home coil-only systems from other types of systems. ADP explained that indoor units are often installed in attics, basements, closets and other areas of limited access, so most consumers would not see a label, limiting the usefulness of a label. (ADP, No., 23 at p.6) Lennox and ADP recommended that DOE add the following physical indoor coil characteristics to the definition of mobile home coil-only system in addition to labeling requirements to limit the definition to products exclusively manufactured for mobile homes:

(1) Downturned refrigerant connections
(2) refrigerant connections on left hand side of coil (when viewed from the front)
(3) down-flow capable
(4) maximum size of 20″ wide, 32″ high and 21″ deep (Lennox, No. 25 at p. 8; ADP, No., 23 at p.6)

ADP added that these features are shared by products marketed as mobile home coils and collectively are not present in coils marketed for other applications. Mortex commented that mobile home furnaces have a unique footprint and are only compatible with indoor coils that have a drain pan footprint of 18.5″ wide by 21″ long. Mortex suggests that the definition for mobile home coil-only should include these dimension restrictions for indoor coils. (Mortex, No. 26 at p. 3)

DOE appreciates the suggestions from ADP, Lennox, and Mortex. DOE agrees that a definition that includes descriptions of physical characteristics unique to indoor and outdoor units and combinations that are installed in mobile homes will better distinguish mobile home coil-only systems from other systems. DOE reviewed public product literature for mobile home indoor coils to evaluate the additional criteria suggested by stakeholders.

DOE's search confirmed many of the suggestions, but not all. DOE could not confirm with confidence that all mobile home indoor coils include downturned refrigerant connections on the left hand side when viewed from the front. DOE also found mobile home indoor units that slightly exceeded the height limit that ADP and Lennox recommend. For these reasons, DOE is modifying its proposed definition to include some, but not all, of the physical characteristics that interested parties recommend. In this final rule, DOE is adopting the following definition for mobile home coil-only system:

Mobile home coil-only system means a coil-only split system that includes an outdoor unit and coil-only indoor unit that meet the following criteria: (1) The outdoor unit is shipped with manufacturer-supplied installation instructions that specify installation only for mobile homes that comply with HUD Manufactured Home Construction Safety Standard 24 CFR part 3280, (2) the coil-only indoor unit is shipped with manufacturer-supplied installation instructions that specify installation only in or with a mobile home furnace, modular blower, or designated air mover that complies with HUD Manufactured Home Construction Safety Standard 24 CFR part 3280, and has dimensions no greater than 20″ wide, 34″ high and 21″ deep, and (3) the coil-only indoor unit and outdoor unit each has a label in at least ¼ inch font that reads ''For installation only in HUD manufactured home per Construction Safety Standard 24 CFR part 3280.''

As discussed in detail in section III.C.1.b, in response to stakeholder comment, DOE is adopting a lower minimum external static pressure requirement for space-constrained products to better reflect their field-installed conditions. Similar to mobile home coil-only units, space-constrained coil-only tests should use a default fan power value and capacity adjustment representative of operation at the minimum external static pressure. Recommendation #2 of the Term Sheet includes 0.30 in. wc. as the suggested minimum external static pressure for both mobile home and space-constrained products. As discussed earlier in this section, DOE has determined, with stakeholder support, that a default fan power value of 406 W/1000 scfm and capacity adjustment of 1,385 Btu/h/1000 scfm are consistent with operation at 0.30 in. wc. For this reason, DOE is adopting a default fan power value of 406 W/1000 scfm and capacity adjustment of 1,385 Btu/h/1000 scfm for space-constrained products in this final rule.

3. Revised Heating Load Line Equation

a. Revision of the Heating Load Line Analysis and Proposals

DOE initially proposed revisions to the heating load line equation used in the calculation of heating season performance factor (HSPF) in the November 2015 SNOPR. 80 FR at 69320–69322 (Nov. 9, 2015) The proposals were based on a 2015 Oak Ridge National Laboratory (ORNL) study [17] that examined the heating load line equation for cities representing the six climate regions of the HSPF test procedure in appendix M. DOE received comments on its heating load line equation proposals both in written form in response to the November 2015 SNOPR and verbally during the CAC/HP ECS Working Group meetings. DOE considered the comments received, worked with ORNL on re-examination of certain aspects of the analysis described in the 2015 study, and revised its proposals for revision of the heating load line equation. The revised proposal presented in the August 2016 SNOPR included the following test procedure amendments.

- The zero-load temperature would vary by climate region according to the values provided in Table III–4, but remain at 55 °F (as proposed in the November 2015 SNOPR) for Region IV;
- The heating load line equation slope factor for single- and two-stage heat pumps would vary by climate region, as shown in Table III–4, and be 1.15 for Region IV; and
- For variable-speed heat pumps, the heating load line equation slope factor would be 7 percent less than for single- and two-stage heat pumps. It would vary by climate region, as shown in Table III–4, and be 1.07 for Region IV; 81 FR at 58189 (Aug. 24, 2016)

DOE also revised the heating load hours based on the new zero-load temperatures of each climate region. The revised heating load hours are also given in Table III–4.

TABLE III–4—CLIMATE REGION INFORMATION PROPOSED IN THE AUGUST 2016 SNOPR NOTICE

	Region Number					
	I	II	III	IV	V	VI *
Heating Load Hours	493	857	1247	1701	2202	1842
Zero-Load Temperature, T_{zl}, °F	58	57	56	55	55	57
Heating Load Line Equation Slope Factor, C	1.10	1.06	1.30	1.15	1.16	1.11
Variable-speed Slope Factor, C_{VS}	1.03	0.99	1.21	1.07	1.08	1.03

* Pacific Coast Region.

Note: Some of the values in this table for Region III differ from those presented in the SNOPR. See discussion of these corrections below.

Following from this proposed heating load line equation change, DOE also proposed in the August 2016 SNOPR to require cyclic testing for variable-speed heat pumps be run at 47 °F, rather than using the 62 °F ambient temperature that is required by the current test procedure (see appendix M, section 3.6.4 Table 11). The test would still be conducted using minimum compressor speed. The modified heating load line cyclic test at 47 °F would be more representative of the conditions for which cycling operation is considered in the HSPF calculation. 81 FR at 58190 (Aug. 24, 2016)

In addition, for variable-speed heat pumps, the SEER would be calculated using a building load that is adjusted downwards by 7 percent, consistent with the heating load adjustment.

Heating Load Line Zero-Load Temperature and Slope Factor

A number of commenters disagreed with the zero-load temperature and/or the slope factor proposed for the heating load line equation.

EEI commented that the zero-load temperatures appeared to be too low in light of the predominance of older houses in the building stock, and that the approach may be missing many

[17] ORNL, Rice, C. Keith, Bo Shen, and Som S. Shrestha, 2015. *An Analysis of Representative Heating Load Lines for Residential HSPF Ratings,* ORNL/TM–2015/281, July. (Docket No. EERE–2009–BT–TP–0004–0046).

heating load hours between 55 °F and 65 °F outdoor temperatures. (EEI, Public Meeting Transcript, No. 20 and pp. 82–83) In written comments, EEI reiterated objection to a 55 °F zero-load temperature, asserting that house temperature would fall to 55 °F if the heating system provided no heat at warmer temperatures. They stated most houses are not insulated as well as newer houses, and assuming zero heating system operation between 55 °F and the indoor thermostat settings (*e.g.,* 68 °F) is not realistic and results in lowering the estimated seasonal efficiency of heat pumps. EEI suggested using a zero-load temperature of 65 °F. EEI suggested using a slope of 0.77 or 1.02. (EEI, No. 34 at pp. 2–6)

In its comments, AHRI did not agree with the zero load point of 55 °F. AHRI commented that DOE's proposal was solely based on computer modeling and that AHRI members had submitted real world data from across the entire country during the negotiations to support AHRI's position. AHRI recommended keeping the existing zero-load temperature as 65 °F, and a single heating load line for all products with a 1.02 slope. (AHRI, No. 27 at p. 18) Mitsubishi, Carrier, Lennox, Nortek, Ingersoll Rand, and Goodman all submitted comments agreeing with AHRI's recommendation to use a 65 °F zero-load temperature and a 1.02 slope factor. (Mitsubishi, No. 29 at pp. 3–4; Carrier, No. 36 at p. 10; Lennox, No. 25 at pp. 9–10; Nortek, No. 22 at p. 14; Ingersoll Rand, No. 38 at p. 5; Goodman, No. 39 at p. 9–10)

JCI commented that the ORNL analysis was flawed in that it did not measure the heating load in homes in which human occupants were present. JCI expressed belief that a good survey would find heating load occurring even into the 70 °F–75 °F range in certain regions of the country for certain demographics, and recommended DOE use the 65 °F value for the zero-load temperature.

Bruce Harley Energy Consulting (BHEC) provided field monitoring data and analysis of heating loads conducted at the request of PG&E. The work addressed heating load data of seven homes covering regions I/II,[18] IV, and V that were monitored to measure heating system operation. The data sets and analysis for these houses were not explained extensively in the BHEC comment, but DOE understands that average heating loads were determined by 5 °F-wide temperature bins for hours representing at least a full heating season for each location. Linear curve fits to the binned loads as a function of temperature were determined. The zero-load temperatures for the linear fits lie within a range between 57 °F and 61 °F. Based on this study, BHEC suggested DOE use a value of 60 °F for the zero-load temperature for all climate regions. BHEC also pointed out that these homes are likely to be somewhat less efficient than the 2006 IECC. (BHEC, No. 28 at pp. 2–3)

BHEC's initial comparison of the regional heating load lines with the load lines determined for the seven monitored locations led to the conclusion that the heating load line equation in the August 2016 SNOPR incorrectly included the term T_{OD} (the regional outdoor design temperature) in the denominator. The comment provided analysis showing that the value T_{OD} should be replaced with 5 °F, which is the outdoor design temperature for Region IV. (BHEC, No. 28 at pp. 3–6) With this change, and use of 60 °F as the zero-load temperature, the comment showed that the field data provided good agreement with the calculated heating load lines using the 1.15 slope factor proposed in the August 2016 SNOPR for all but one of the seven monitored locations. This location, ''Site W'', has an unusually high heating load, as indicated by the comment. BHEC concluded that DOE should consider adopting a heating load line with a 60 °F zero-load temperature and a 1.15 slope factor. (BHEC, No. 28 at pp. 6–8)

PG&E commented during the public meeting that the August 2016 SNOPR proposals were not consistent with recent field data not available during the CAC/HP ECS negotiations, and that more details would be provided later. (PG&E, Public Meeting Transcript, No. 20 at p. 84) These additional details presumably are provided by the BHEC comment. The CA–IOUs (which includes PG&E) reiterated some of the discussion of the BHEC comment and supported the 60 °F zero-load temperature and the 1.15 slope factor, although indicating that the selection of zero-load temperature has less impact on measured efficiency. (CA IOU, No. 32 at pp. 1–4)

NEEA supported BHEC's comments on zero-load temperature and slope factor. (NEEA, No. 35 at p. 3)

ACEEE, ASAP, and NRDC supported the heating load line equation proposal of the August 2016 SNOPR but suggested that a more thorough review and revision of the test method for determining heat pump efficiency should be conducted in future. (ACEEE, NRDC, and ASAP, No. 33 at pp. 2, 7–8)

DOE agrees with BHEC's comment regarding appearance of T_{OD} in the denominator of the heating load line equation. This is a mistake that initially appeared in the November 2015 SNOPR. The correct form of the equation, shown in the initial ORNL Report, indicates that the T_{OD} should be replaced with 5 °F (Docket No. EERE–2009–BT–TP–0004, An Analysis of Representative Heating Load Lines for Residential HSPF Ratings, No. 46 at p. B–1).

Regarding several comments pointing to operation of heating systems in temperatures well above 55 °F, DOE does not dispute that this occurs. The ORNL analysis, in fact, shows that heating loads exist at higher temperatures, as illustrated in Figure 2 of the initial report (Docket No. EERE–2009–BT–TP–0004, An Analysis of Representative Heating Load Lines for Residential HSPF Ratings, No. 46 at p. 5) The zero-load temperature is not intended to be the highest temperature at which the heating system would operate. Instead, it is the zero-load intercept of the best-fit line representing the average loads calculated for each bin. The field data that were provided during the CAC/HP ECS negotiations, cited in the AHRI comment and also provided in the Ingersoll Rand comment (Ingersoll Rand, No. 38 at p. 6), represent many locations and likely represent a wide range of house characteristics and occupancy patterns. DOE does not believe that this type of aggregation of the data of all of the monitored locations is very useful to provide an understanding of building heating loads. For example, much of the operation of the heating systems above 55 °F outdoor temperature could be associated with recovery from night setback. Also, it is not known how the supplemental electric resistance heat compares with the heat pump capacity, or whether any of the locations have supplemental heat other than the electric resistance heat built into the monitored heat pumps—to the extent that such alternative supplemental heating (*e.g.* supplied by a separate space heater, furnace, or wood stove) occurs at different temperatures than heating provided by the heat pump—would affect the results by flattening the apparent load line slope. DOE initially requested additional details of this

[18] The comment indicates that three of the monitored homes are located in Stockton, CA and are in Region ''I/II''. Based on comparison of the location of Stockton with the climate zone map (Figure 1 in Appendix M), it is not clear that ''I/II'' clearly represents Stockton's climate zone—it would appear to be more likely in Region III. In contrast, the other locations mentioned in the comment are much more clearly in their listed zones, *e.g.* V for Southern Vermont, and IV for New York/New Jersey.

study to allow more careful analysis, but such information was not readily available. DOE points out similar issues associated with the aggregation of the field data provided by Lennox. (Lennox, No. 25 at p. 9) In contrast, the data provided by BHEC provides a clearer indication of how the load varies with ambient temperature for specific locations, because the data were provided separately for each location and the heating loads were more directly measured than for the data sets provided by Ingersoll Rand and Lennox.

DOE reviewed the work by BHEC, and believe that, while these data suggest use of a zero-load temperature higher than 55 °F, they do not show that DOE's 55 °F proposal is inappropriate. First, the best-fit zero-load temperatures of the monitored locations ranges from 57 °F to 61 °F. However, the 61 °F value is associated with Site W, which has unusually high loads, suggesting that this location is an outlier not consistent with most houses. Second, as suggested by the comment, these homes are likely less efficient than the 2006 IECC housing characteristics used in the ORNL analysis. During the CAC/HP ECS negotiations, Working Group members commented that, in developing test procedures, DOE should be looking further towards the future than represented by IECC 2006 (see, *e.g.,* Docket EERE–2014–BT–STD–0048, 2015–09–28 Working Group Meeting Transcript; Ingersoll Rand, No. 86 at p. 187; Carrier, No. 85 at p. 112) Hence, DOE believes consideration of house models representative of earlier building codes is not appropriate and maintains its selection of the IECC 2006 building models. DOE notes that there is variation in the existing housing stock and that some houses may have higher zero load slopes than others. Also, when considering all of the locations of the BHEC comment other than Site W, the heating load calculated using the 60 °F zero temperature is slightly higher than the field-correlated line for 5 locations. For these locations, reducing the zero-load temperature to 60 °F would slightly improve the fit of the calculated heating load line to the field data. DOE also considered the impact of a 60 °F zero-load temperature as opposed to the proposed 55 °F zero-load temperature on the differentiation between variable-speed and two-stage products. Using data provided by AHRI during the CAC/HP Working Group meetings, DOE determined that use of 60 °F would make little change to the differences in HSPF values calculated for heat pumps with different characteristics. The HSPF is roughly 2.4 percent higher when using the 60 °F zero-load temperature, and there are no significant difference in trends for products with different characteristics. For all these reasons, DOE has decided not to revise the heating load line using a 60 °F zero-load temperature.

In response to JCI's comment suggesting that the heating loads of the ORNL study did not include the impacts of human occupants, this is not true—the load analysis did include load contributions for human occupants. In response to EEI's comment that the house temperature would fall to 55 °F if the heating system did not operate at warmer temperature, DOE reiterates that the 55 °F zero-load temperature does not imply that there is no heating system operation at warmer temperatures and that the EEI statement ignores the impacts of internal heat loads and solar gain that raise the internal temperature above the exterior temperature even when there is no heating system operation.

Heat Pump and Furnace Load Lines

Ingersoll Rand (p. 6) and EEI (p. 4) commented that the heating load line equation for heat pumps should not be different than the equation used for furnaces in order to maintain neutrality between different heating products in performance information provided to consumers. In response, DOE first notes that neither the capacity nor the steady-state efficiency for furnaces varies significantly for different outdoor air temperatures (see, *e.g.,* Investigation of High Efficiency Furnace SSE Measurements versus AFUE, No. 42 at p. 1), which is not true for capacity and COP of heat pumps. Consequently, the load line does not affect the furnace efficiency metric, AFUE; in other words, the AFUE would not be significantly different if calculated for any of the alternative load lines proposed in the CAC/HP rulemaking notices and discussed in stakeholder comments. In contrast, the capacity of a heat pump varies greatly with ambient temperature. For example, the heating capacity at 7 °F for a single speed heat pump is about 50% of its capacity at 47 °F. (Docket No. EERE–2009–BT–TP–0004, An Analysis of Representative Heating Load Lines for Residential HSPF Ratings, No. 46 at p. 21) The much greater sensitivity to outdoor temperature of a heat pump suggests strongly that use of representative load profiles for calculating seasonal efficiency is much more important for them than for furnaces. DOE has based its proposal and final rule on a recent comprehensive assessment of heating loads, *i.e.* the ORNL analysis. (*Id*) The furnace test procedure has not recently been reviewed from the perspective of a similar assessment of heating loads. DOE acknowledges that the proposed change to the heating load line for heat pumps does change the seasonal heating load that is the basis of the annual operating cost calculation. However, due to the greater importance of using a representative load line for heat pumps, DOE believes that modification of the furnace test procedure to align with the heat pump test procedure is the appropriate resolution. DOE may consider in a future rulemaking whether the seasonal heating load for the furnace test procedure should be adjusted to match that of the heat pump test procedure.

Variable-Speed Slope Factor

Numerous comments addressed the different slope factor proposed for variable-speed products. JCI disagreed with DOE's proposal to modify the heating load line slope such that it varies with technology type. JCI stated they would be willing to adopt a 1.02 slope for all product types as proposed by industry in the CAC/HP ECS negotiations. (JCI, No. 24 at p. 16)

AHRI asserted that a single heating load line equation slope factor is appropriate for all products, because the building load is independent of the installed system. (AHRI, No. 27 at pp. 17–18) Several other commenters made identical arguments. (Goodman, No. 39 at p. 9; Carrier/UTC, No. 36 at p. 10; Lennox, No. 25 at p. 9; Ingersoll-Rand, No. 38 at p. 6; Nortek, No. 22 at p. 12) Rheem commented that different slope factors should not be used for single and two-stage products, further commenting that building load is not determined by the installed HVAC equipment. (Rheem, No. 37 at p. 5) Although DOE has not proposed different slope factors for single and two-stage equipment, DOE understands that the same argument might apply to variable-speed products, for which DOE did propose a different slope factor.

Emerson commented that DOE did not support the different oversizing factor for variable-speed products with any field installation data and noted that the May 2016 workshop on residential CAC/HP installation highlighted field installation inconsistencies including improper sizing and lack of data. Emerson stated that a misrepresentation of HSPF in ''variable capacity'' systems should be corrected by modifying the HSPF calculation, for example, by changing the run time. (Emerson, No. 31 at p. 2) However, Emerson also stated that variable speed allows oversizing in

installation and suggested that the variable-speed slope factor also be allowed for use with other technologies that modulate capacity, including two-stage, tandem, vapor injection, and digital. (Emerson, No. 31 at p. 2)

BHEC supported a lower slope factor for variable-speed products than for single-speed, indicating further that the proposal to use the ratio of allowed cooling oversize factors in ACCA Manual S for these types of equipment (leading to a proposed slope factor of 1.07 for Region IV) is reasonable, and in the current test procedure is likely to be a conservative adjustment.

The CA IOUs, NEEA, and ACEEE, NRDC, and ASAP supported the lower slope factor for variable-speed products. (CA IOU, No. 32 at p. 4; NEEA, No. 35 at p. 3; ACEEE, NRDC, and ASAP, No. 33 at pp. 7–8)

In response to comments that the building load does not change with selection of heat pump technology, DOE notes that the proposal does not suggest any difference in building load when using different technology. The slope factor represents the ratio of building load to heat pump capacity. DOE acknowledges that variable-speed products are a bit more oversized in comparison to the building heating load than are single-speed and two-stage products. Keeping the building load constant and increasing the variable-speed heat pump capacity reduces the building load/capacity ratio; hence DOE selected a lower slope factor. Given that publicly available data regarding sizing trends is not available, and in response to comments pointing out the lack of data to support the lower slope factor for variable-speed products, DOE understands that ACCA Manual S is the best available indication of what sizing guidelines contractors and others may be using to select heat pumps, due to widespread citation of the ACCA manuals for use in calculating loads and sizing HVAC systems, including required use of Manual S for sizing of systems in ENERGY STAR certified homes. (''Why ACCA Manual S Means Superior Equipment Sizing'', No. 40; ''HVAC Design Report, ENERGY STAR Certified Homes'', No 43; ''What Exactly is Manual S in HVAC Design and Why Is It Important?'', No. 44; ''Residential Mechanical Equipment Loads and Sizing'', No. 45)

In response to Emerson's comment that potential HSPF misrepresentation for variable-speed products should be addressed by adjusting run time, it is not clear what Emerson's suggested approach is. DOE notes that the lower slope factor for variable-speed products leads directly to calculation of lower percentage run time for variable-speed products in the HSPF calculation when meeting loads lower than the minimum-speed capacity. If Emerson's comment was intended to address the cycle times used for variable-speed products during the cyclic test, DOE notes that the cycle times for variable-speed products are longer for variable-speed than for single-speed or two-stage products (see, *e.g.,* appendix M, section 3.5.b).

In response to Emerson's comment that the test procedure should allow variable-capacity technologies other than variable speed to use the lower slope factor, DOE declines to adopt that approach in this final rule because there were no data either provided by Emerson, or found by DOE that show how such systems would be sized and/or differences in how such systems would operate. For example, two-stage products currently on the market do not allow as wide a range of capacity modulation as do variable-speed products, so it is not clear that similar oversizing is justified for them. In fact, ACCA manual S recommends only slightly more oversizing for two-stage products than for single-stage. The modulation range of vapor-injection compressors is also not as wide as for variable-speed. Finally, DOE is not aware of any CAC/HP products on the market that use digital technology, so it is not clear how the modulation range of future products using this technology will compare, and it is also not clear whether alternative sizing guidelines will be extended to them. DOE is not against consideration of use of the lower slope factor for other variable-capacity technologies, but prefers to consider such a step when more is known about the products using these technologies.

Therefore, DOE is adopting the appendix M1 test procedure with the heating load line equation slope factors (1.15 for single- and two-stage heat pumps and 1.07 for variable-speed heat pumps) and zero-load temperature (55 °F) proposed in the August 2016 SNOPR.

Corrections

In the August 2016 SNOPR, DOE inadvertently included the incorrect values for the representative heating load hours for each generalized climatic region in Table 20 of appendix M1. 81 FR at 58268 (Aug. 24, 2016) The preamble also provided incorrect values for heating load hours, the slope factor, and the variable-speed slope factor for Region III. 81 FR at 58189–90. The corrected values were determined as described and reported in the ORNL report addendum. (CAC TP: ORNL Report Addendum, No. 2 at p. 8) Therefore in this final rule, DOE is adopting the corrected values in the test procedure, including the correct heating load hours for all of the climatic regions in Table 20, which in this notice has become Table 21.

DOE also notes that, in the August 2016 SNOPR, the heating load hours depicted in Figure 1 are not consistent with the new heating load line analysis. 81 FR at 58267 (Aug. 24, 2016) However, the figure is still helpful for depicting the climate zones. Therefore, in this final rule, DOE is renaming Figure 1 to indicate that the figure depicts climate zones rather than heating load hours. In addition, Figure 2, which depicts cooling load hours, is not referenced by any part of the test procedure as modified by the June 2016 final rule and the August 2016 SNOPR proposals. 81 FR at 37119 (June 8, 2016) and 81 FR at 58267 Hence, DOE is removing this figure to reduce potential confusion regarding its applicability to the test procedure and calculations.

Clarification Regarding Negative Heating Loads

DOE's proposed changes to the test procedure did not include removing fractional bin hour data for the temperature bins with temperature higher or equal to the new zero-load temperatures—this included data in Table 19 (number as proposed in the August 2016 SNOPR) for the 62 °F bin for Region I and both the 57 °F and 62 °F bins for all other regions. 81 FR at 58254–55 (Aug. 24, 2016)

DOE notes that for these bins with temperatures higher than the zero-load temperatures, a negative heating load would be calculated according to equation 4.2–1 as proposed. Unico raised this issue in comments submitted in response to the notice of data availability (NODA) associated with the CAC/TP energy conservation standard rulemaking which was published October 27, 2016 (see 81 FR 74727). (Docket Number EERE–2014–BT–STD–0048, Unico, No. 95 at p. 1) However, these negative-load contributions were not intended to be included in HSPF calculation, because they would incorrectly reduce the calculated total seasonal heating load and heating season energy use. In order to exclude the negative-load contributions in the HSPF calculation, DOE has set the fractional bin hours to zero for the 62 °F bin for Region I and both the 57 °F and 62 °F bins for all other regions.

b. Impact of DOE Proposal on Current HSPF Ratings and Model Differentiation

DOE provided in the August 2016 SNOPR a summary of the impacts of the

revised heating load line equation proposal on HSPF ratings based on test results provided by AHRI for 2, 3, and 5-ton two-stage and variable-speed heat pumps. 81 FR at 58190 (Aug. 24, 2016) These impacts are reproduced in Table III–5.

TABLE III–5—EFFECT OF REGION IV SLOPE FACTORS ON HSPF OF TWO-STAGE (TS) AND VARIABLE-SPEED (VS) MODELS

	Region IV slope factors				
	Current: 0.77	1.02	1.15	1.30	August 2016 SNOPR *
Avg. TS HSPF	9.49	8.47	8.17	7.80	8.17
Avg. VS HSPF	10.93	9.44	8.95	8.44	9.26
Avg. HSPF Differential	1.44	0.97	0.79	0.64	1.09

* Slope factor for two-stage equipment: 1.15. Slope factor for variable-speed equipment: 1.07.

EEI commented in the public meeting that the change in HSPF associated with the test procedure proposal was so great that there should be consideration of changing the name of the heating mode efficiency metric. (EEI, Public Meeting Transcript, No. 20 at p. 86) PG&E seconded this point. (PG&E, Public Meeting Transcript, No. 20 at p. 87, 88) Other stakeholders mentioned that the working group in the CAC/HP negotiations had settled on calling the new efficiency metric HSPF2 and voiced support for this term—Goodman also indicated that it would be beneficial to use both ''HSPF'' and ''HSPF2'' for a period of time before the new test procedure becomes mandatory, to help consumers understand the differences between the old and new ratings. (Goodman, Rheem, Public Meeting Transcript, No. 20 at p. 87–88)

Consistent with the comments, and as discussed in section III.A.1, DOE is renaming the heating mode efficiency metric ''HSPF2.''

EEI also commented that the new slope has a significant impact on estimated energy usage. EEI commented many two-speed units would not qualify for Energy Star or even meet the minimum DOE HSPF with the new slope. EEI contended that the revision could take many high efficiency units off of the market. (EEI, No. 34 at p. 4) DOE notes that these comments do not take into consideration the changes in the standard levels that would be made to account for the measurement changes. In response, DOE expects that the Energy Star program will set new levels for ''HSPF2'' consistent with the measurement change associated with the test procedure change, as DOE has proposed to do with the new HSPF standard levels selected based on the current test procedure by the CAC/HP ECS Working Group.

No stakeholders stated that the heating load line slope factors proposed in the August 2016 SNOPR result in overly diminished differentiation of variable-speed heat pumps as compared with two-stage heat pumps. Therefore, concerns regarding insufficient product differentiation that had been raised regarding the slope factors proposed in the November 2015 SNOPR appear to be removed, thus strengthening the arguments for heating load line slope factors proposed in the August 2016 SNOPR, which are adopted in this final rule. Thus, DOE is adopting the new heating load line slope factors for variable speed heat pumps in this final rule.

c. Translation of CAC/HP ECS Working Group Recommended HSPF Levels Using Proposed Heating Load Line Equation Changes

Recommendation #9 of the CAC/HP ECS Working Group Term Sheet included two sets of recommended national HSPF standard levels. The Working Group based these levels on heating load line equation slope factors of 1.02 and 1.30 to reflect the two factors primarily discussed during the negotiations. The Working Group designated these levels as ''HSPF2'' to indicate that they are not equivalent to current HSPF ratings. Table III–6 includes the Working Group's recommended HSPF levels:

TABLE III–6—CAC/HP ECS WORKING GROUP RECOMMENDED HSPF LEVELS BASED ON PREVIOUSLY PROPOSED HEATING LOAD LINE EQUATIONS

Product class	HSPF2–1.02	HSPF2–1.30
Split-System Heat Pumps	7.8	7.1
Single-Package Heat Pumps	7.1	6.5

Because the August 2016 SNOPR proposed a heating load line equation with a slope factor of 1.15 for baseline systems, DOE calculated the expected HSPF2 standard levels for this intermediate slope factor—these values are presented in Table III–7.

TABLE III–7—CAC/HP ECS WORKING GROUP RECOMMENDED HSPF LEVELS BASED ON HEATING LOAD LINE EQUATION PROPOSED IN THE AUGUST 2016 SNOPR

Product class	HSPF2–1.15
Split-System Heat Pumps	7.5
Single-Package Heat Pumps	6.8

DOE requested comment on the adjusted values of minimum HSPF2. During the public meeting, Goodman expressed provisional support of the values but indicated that some analysis would be conducted to confirm. (Goodman, Public Meeting Transcript, No. 20 at pp. 89–90) However, several commenters indicated in written comments that the 6.8 HSPF2 value for single-package heat pumps was too high.

AHRI expressed concern with the HSPF2 value determined for single-package heat pumps, indicating that of

six such products with current-test HSPF of 8.0 and slightly higher that were evaluated, the results for five indicate that the crosswalk from HSPF of 8.0 to HSPF2 of 6.8 is not accurate using the 1.15 slope factor. AHRI indicated that it was in the process of collecting additional data and will provide a suggestion for an appropriate crosswalk for this class within 30-days of the comment submittal deadline. (AHRI, No. 27 at p. 18) Nortek submitted a nearly identical comment, but claimed that three of the six evaluated units would not be compliant with the 6.8 HSPF2 level, and indicated that more data would be collected and provided within 30 days. (Nortek, No. 22 at p. 15)

Goodman performed simulation analysis, from which it concluded that the proposed HSPF2 values for split system heat pumps is realistic, but that the crosswalk value for single package heat pumps is higher than it should be. Goodman requested a crosswalk HSPF2 value of 6.6 or 6.7 but indicated they would be providing more information. (Goodman, No. 39 at p. 10)

Rheem commented that, based on initial analysis of the HSPF to HSPF2 crosswalk, some of their products would become obsolete if the cross-walk is adopted—however, they did not clarify which type of product. Rheem commented that it was working with AHRI to determine appropriate cross-walk metrics, which would be reported to DOE. (Rheem No. 37 at p.7)

Ingersoll Rand also expressed concerns about the HSPF to HSPF2 crosswalk, and indicated they would be providing data to AHRI. (Ingersoll RandNo. 38 at p. 7)

JCI commented that residential single-package units will be more severely affected than the crosswalk currently reflected and requested more time for the industry to evaluate and confirm the HSPF to HSPF2 crosswalk. (JCI, No. 24 at p. 17)

ACEEE, NRDC, and ASAP supported the values assigned, commenting that without better information, the linear interpolation is an appropriate way to determine the adjusted minimum HSPF2 values for the heating load line equation slope factor proposed in the August 2015 SNOPR. (ACEEE, NRDC, and ASAP, No. 33 at p.2) Carrier/UTC supported the adjusted values of minimum HSPF2 as they are consistent with the CAC/HP ECS Working Group term sheet recommendation. (Carrier/UTC, No. 36 at p. 11)

Lennox supported the 7.5 HSPF2 value determined by DOE for split systems but did not support the 6.8 HSPF2 value for single package products. Lennox commented that an HSPF2 level of 6.5 would be appropriate for single package heat pumps under the M1 Appendix test procedure proposed in the August 2015 SNOPR. Lennox indicated that it was working to expand the sample of the data used in this determination to provide DOE evidence that supports this recommendation. Lennox expected this data collection to be complete within 30 days of the end of the comment period. (Lennox, No. 25 at p. 10)

Unico requested that the DOE defer action until AHRI presents additional data, since the crosswalk is a complex issue and requires additional time to determine the effect that the proposed adjustments will have on HSPF. (Unico, No. 30 at p.6)

DOE will consider these recommendations and any additional data provided in a timely fashion when it considers the final HSPF2 values to be set for single-package heat pumps in the energy conservation standard rulemaking.

d. Consideration of Inaccuracies Associated With Minimum-Speed Extrapolation for Variable-Speed Heat Pumps

DOE discussed in the November 2015 SNOPR potential inaccuracies associated with the use of test data conducted at minimum speed in 47 °F and 62 °F ambient temperature to estimate heat pump performance below 47 °F. 80 FR at 69322–23 (Nov. 9, 2015). Specifically, for heat pumps that increase compressor speed as ambient temperature drops below 47 °F, the extrapolation of performance based on the 47 °F and 62 °F minimum-speed tests over-estimates efficiency. However, for the 1.3 slope factor proposed in the November 2015 SNOPR, DOE found that the impact on HSPF for the available heat pump data was too small to justify modifying the test procedure. The higher slope factor reduced the impact of the issue because the higher heating load reduced the weighting of the HSPF on minimum-speed performance. DOE did not propose a resolution but indicated that it might reconsider this possibility if a lower heating load line equation slope factor were adopted. Id. In the August 2016 SNOPR, DOE proposed to reduce the heating load line equation slope factor to 1.07 for variable-speed heat pumps. DOE's analysis suggested that, with the lower slope factor, the HSPF may be overestimated by as much as 16 percent as a result of the inaccuracy associated with the minimum-speed extrapolation. Hence, DOE also proposed revision to the estimation of minimum-speed performance to reduce the impact of the error. Specifically, for heat pumps that vary the minimum speed when operating in outdoor temperatures that are in a range for which the minimum-speed performance factors into the HSPF calculation, DOE proposed the following.

- Adoption of a definition, ''minimum-speed-limiting variable-speed heat pump,'' to refer to such heat pumps.
- Minimum-speed performance between 35 °F and 47 °F would be estimated using the intermediate-speed frosting-operation test at 35 °F and the minimum-speed test at 47 °F, and minimum-speed performance below 35 °F would be equal to intermediate-speed performance.
- Including in certification reports for such variable-speed heat pumps whether this alternative approach was used to determine the rating.

81 FR at 58191 (Aug. 24, 2016)

Rheem, Unico, Nortek, Mitsubishi, AHRI, Ingersoll Rand, ACEEE, NRDC, and ASAP, and Lennox supported DOE's proposal to use alternative HSFP rating approach as part of M1. (Rheem, No. 37 at p. 6; Unico, No. 30 at p. 7; Nortek, No. 22 at p. 16; Mitsubishi, No. 29 at p.4; AHRI, No. 27 at p.19; Ingersoll Rand, No. 38 at p. 7; ACEEE, NRDC, and ASAP, No. 33 at p. 8; Lennox, No. 25 at p. 15) Carrier/UTC supported the methodology to account for variable-speed heat pumps that limit the low stage speed at lower ambient conditions by not requiring additional testing. (Carrier/UTC, No. 36 at p. 12) JCI essentially agreed with the proposal, commenting that additional tests would offer minimal improvement in HSPF accuracy, and are not worth the additional test burden. JCI also commented that if DOE adopts this change, it should be in appendix M1 and not in appendix M. (JCI, No. 24 at p. 17)

Carrier also commented that DOE should invest in creating an alternative load based (or some other) test method that simplifies the test procedure and accounts for all of the benefits of variable-speed technology, allowing a true comparison to other technologies. (Carrier/UTC, No. 36 at p. 12)

Goodman did not specifically comment on the proposed test procedure change for variable-speed products, but instead suggested a significantly revised test procedure for these products that would include two tests each at two different outdoor temperatures for each of the relevant compressor speeds (low, intermediate, high, and boost), where boost speed would be optional for testing and would

be used for very low temperatures, *e.g.* 17 °F and below. In Goodman's scheme, the manufacturer would determine at which speed the heat pump would be operating for each temperature bin, and would certify (a) the temperature bin at which the variable-speed heat pump begins to increase above minimum speed, (b) the temperature bin at which full speed is achieved, and (c) in which temperature bin the boost speed is achieved. (Goodman, No. 39 at p. 11)

In response to Carrier and Goodman, DOE would support development by the industry and interested stakeholders of a blank-slate revision of the test procedure for variable-speed products with consideration of load-based methods as suggested by Carrier, but since these alternative methods are not fully defined, and certainly have not be made available for public comment, DOE cannot finalize any such test procedure with this final rule.

In this final rule, DOE adopts the proposal for the alternative method for variable-speed heat pumps that raise the compressor speed above the minimum speed at ambient temperatures below 47 °F. In response to JCI, this alternative method was proposed only for appendix M1 and is adopted in this final rule only for appendix M1.

4. Revised Heating Mode Test Procedure for Units Equipped With Variable-Speed Compressors

In the November 2015 SNOPR, DOE revisited the heating season ratings procedure for variable-speed heat pumps found in section 4.2.4 of appendix M of 10 CFR part 430 subpart B. DOE proposed as part of appendix M1 an optional approach for testing variable-speed heat pumps that included a test conducted at 2 °F outdoor temperature (or at the low cutoff temperature, whichever is higher). The proposal would have allowed manufacturers to choose to conduct one additional steady-state test, at maximum compressor speed and at a low temperature of 2 °F or at a low cutoff temperature, whichever is higher. 80 FR at 69322–23 (Nov. 9, 2015).

DOE received comments on this proposal, both in written form in response to the November 2015 SNOPR, and in the CAC/HP ECS negotiations. Working group members ultimately agreed that the optional test should be conducted at 5 °F rather than 2 °F—this is Recommendation #5 in the Term Sheet. (CAC ECS: ASRAC Term Sheet, No. 76 at p. 3)

The revised variable-speed heat pump test procedure proposed in the August 2016 SNOPR included the following changes in appendix M1.

- If the optional 5 °F full-speed test (to be designated $H4_2$) is conducted, full-speed performance for ambient temperatures between 5 °F and 17 °F would be calculated using interpolation between full-speed test measurements conducted at these two temperatures, rather than the current approach, which uses extrapolation of performance measured at 17 °F and 47 °F ambient temperatures. For all heat pumps for which the 5 °F full-speed test is not conducted, the extrapolation approach would still be used to represent performance for all ambient temperatures below 17 °F.
- A target wet bulb temperature of 3.5 °F for the optional 5 °F test.
- If the optional 5 °F full-speed test is conducted, performance for ambient temperatures below 5 °F would be calculated using the same slopes (capacity vs. temperature and power input vs. temperature) as determined for the heat pump between 17 °F and 47 °F. Specifically, the extrapolation would be based on the 17 °F-to-47 °F slope rather than the 5 °F-to-17 °F slope. If the 47 °F full-speed test is conducted at a different speed than the 17 °F full-speed test, the extrapolation would be based on the standardized slope discussed in section III.B.7.
- Manufacturers would have to indicate in certification reports whether the 5 °F full-speed test was conducted.
- As proposed for appendix M and discussed in section III.B.7, a 47 °F full-speed test, designated the $H1_N$ test, would be used to represent the heating capacity. However, for appendix M1, this test would be conducted at the maximum speed at which the system controls would operate the compressor in normal operation in a 47 °F ambient temperature.
- If the heat pump limits the use of the minimum speed (measured in terms of RPM or power input frequency) of the heat pump when operating at ambient temperatures below 47 °F (*i.e.* does not allow use of speeds as low as the minimum speed used at 47 °F for any temperature below 47 °F), a modified calculation would be used to determine minimum-speed performance below 47 °F (this proposal is discussed in section III.C.3.d).

81 FR at 58192–93 (Aug. 24, 2016).

DOE also requested comment regarding whether the 2 °F test for triple-capacity northern heat pumps should be changed to a 5 °F test. 81 FR at 58193. (Aug. 24, 2016).

Carrier/UTC, Lennox, the Joint Advocates, JCI, Ingersoll Rand, Goodman, Nortek, Unico, NEEA, Rheem, CA IOU, AHRI, and Mitsubishi agreed with DOE's proposal to adopt a very low temperature test for heat pumps, at the 5 °F temperature agreed to by the CAC/HP ECS Working Group, rather than the 2 °F initially proposed. (Carrier/UTC, No. 36 at p. 12; Lennox, No. 25 at p. 15; ACEEE, NRDC, and ASAP, No. 33 at p. 8, JCI, No. 24 at p. 17; Ingersoll Rand, No. 38 at p. 7, Goodman, No. 39 at p. 11; Nortek, No. 22 at p. 16; Unico, No. 30 at p. 7; NEEA, No. 35 at p. 3; Rheem, No. 37 at p. 6; CA IOU, No. 32 at p.4; AHRI, No. 27 at p.19; Mitsubishi, No. 29 at p.4) Rheem and the Joint Advocates commented that if the 5 °F full-speed test is conducted, the full-speed performance should be calculated using interpolation, rather than extrapolation. (Rheem, No. 37 at p. 6; ACEEE, NRDC, and ASAP, No. 33 at p. 8)

Goodman further suggested that an optional 5 °F test also be allowed for two-stage and single-speed heat pumps. In addition, Goodman recommended that for all of these products for which the optional 5 °F test is conducted, performance for all ambient conditions below 17 °F be based on the 5 °F and 17 °F tests, using linear interpolation between these temperatures and linear extrapolation below 5 °F, explaining that the potential inaccuracy of the extrapolation below 5 °F is not so important because less than 1% of heating performance for the HSPF in Region IV occurs at temperatures less than 5 °F. Goodman clarified that its support for this approach, including extension to single-speed and two-stage products, is contingent on the 5 °F test being optional. (Goodman, No. 39 at pp. 5–6)

Unico suggested that DOE consider establishing a cold climate heat pump product class with different test methods both for heating and cooling performance and different energy conservation standards for both operating modes in order to incentivize development of such products, claiming that they do not rate well using the current HSPF and SEER metrics because they are optimized for heating in lower ambient temperatures. (Unico, No. 30 at p. 7)

In response to stakeholders' comments, DOE has adopted the optional 5 °F test for variable-speed heat pumps. DOE notes that the Joint Advocate's suggestion to require use of interpolation, rather than extrapolation based on tests conducted in 47 °F and 17 °F temperatures, when the 5 °F test is conducted, is fully consistent with the proposal and is how the test procedure is adopted in this rule.

In response to Goodman's comments, DOE has extended 5 °F testing as an

optional test to HSPF rating for single-speed and two-stage heat pumps. For single-speed, two-stage, and variable-speed heat pumps that are tested using the optional 5 °F full-speed test (to be designated $H4_2$), full-speed performance for ambient temperatures between 5 °F and 17 °F will be calculated using interpolation based on full-speed test measurements conducted at these two temperatures, rather than the current approach, which uses extrapolation of performance measured at 17 °F and 47 °F ambient temperatures. Full speed-performance for temperatures lower than 5 °F will be calculated for single-speed and two-stage heat pumps using extrapolation based on the tests conducted at 5 °F and 17 °F, rather than using the 17 °F-to-47 °F slope that was proposed and is adopted for variable-speed heat pumps. DOE considers extrapolation below 5 °F for these products to be acceptable because the 5 °F and 17 °F tests will be conducted at the same compressor speed. For all heat pumps for which the 5 °F full-speed test is not conducted, the extrapolation approach using test results for 17 °F and 47 °F temperatures (or the standardized slope factors for variable-speed heat pumps which do not use the same speed for these tests) would be used to represent performance for all ambient temperatures below 17 °F.

DOE considered Unico's suggestion to create a separate product class with a different test standard and test procedure for products designed for cold climate. However, because other stakeholders have not had the opportunity to comment, DOE cannot adopt that suggestion in this final rule.

In response to DOE's proposal of a target wet bulb temperature of 3.5 °F for the optional 5 °F test, ACEEE, NRDC, and ASAP agreed with the proposed 3.5 °F target wet bulb temperature. (ACEEE, NRDC, and ASAP, No. 33 at p. 8) Carrier/UTC, Lennox, JCI, Ingersoll Rand, Goodman, Nortek, NEEA, Rheem, the CA IOUs, AHRI, and Mitsubishi all recommended that the target wet bulb temperature for the 5 °F test should be 3 °F or less, rather than the proposed 3.5 °F target. The commenters indicated that holding tight tolerances on the wet bulb temperature at such low temperatures is very challenging, but that the frost loading for this temperature is so low that the variation in moisture up to the 3 °F wet bulb temperature level would not affect the test significantly. Unico made a similar recommendation, but suggested a maximum of 4 °F wet bulb temperature. (Carrier/UTC, No. 36 at p. 12; Lennox, No. 25 at p. 15; JCI, No. 24 at p. 17; Ingersoll Rand, No. 38 at p. 7, Goodman, No. 39 at p. 11; Nortek, No. 22 at p. 16; Unico, No. 30 at p. 7; NEEA, No. 35 at p. 3; Rheem, No. 37 at p. 6; CA IOU, No. 32 at p.4; AHRI, No. 27 at p.19; Mitsubishi, No. 29 at p.4). DOE agrees that the amount of moisture in 5 °F air would be sufficiently low that imposing a maximum wet bulb temperature of 3 °F would be adequate to ensure test repeatability; hence, DOE adopts the suggestion to set a maximum level of 3 °F in this final rule.

JCI, Goodman, Unico, UTC, AHRI, ACEEE, NRDC, and ASAP supported testing triple-capacity northern heat pumps at 5 °F to be consistent with other heat pumps. In addition, AHRI suggests that DOE modify the test procedure for triple-capacity northern heat pumps, and allow variable speed heat pumps to be tested like the triple-capacity northern heat pumps in heating mode. Unico also suggested that triple-capacity systems should also be tested at 17 °F at the third (boost) capacity to allow for extrapolation (H33), thus adding a capacity curve at the third capacity. (JCI, No.24, at p 17; Goodman, No. 39, at p 14; Unico, No. 30 at p 7; Carrier/UTC No. 36 at p. 12; AHRI, No. 27 at p. 19; ACEEE, NRDC, and ASAP, No. 33 at p. 8)

In response to those comments, DOE adopts testing of triple-capacity northern heat pumps at 5 °F in both appendix M and appendix M1. DOE considered AHRI's suggestion of modifying the testing of triple-capacity northern heat pumps and allowing testing variable-speed heat pumps using the procedure, and decided not to make the changes in this final rule. More discussion regarding this issue is in section III.B.7. In response to Unico's suggestion on adding a 17 °F test at the 3rd capacity to allow for extrapolation (H33), DOE notes that the current triple-capacity test procedure already requires the requested test.

As discussed in section III.B.7, many stakeholders responded to DOE's proposal of modification to the test procedure for variable-speed heat pumps in appendix M, recommending that the proposed changes, if adopted, should be part of appendix M1 rather than appendix M. In response to these comments, DOE has removed from appendix M the requirement that the $H3_2$ test be conducted at the highest speed that would normally be used in 17 °F ambient conditions—this change is adopted, however, in appendix M1.

D. Effective Dates and Representations

1. Effective Dates

DOE finalized some appendix M requirements in the June 2016 Final Rule, and representations must be made in accordance with appendix M, as adopted in that Final Rule, starting 180 days after it was published (December 6, 2016). DOE proposed additional changes to appendix M in the August 2016 SNOPR, some of which are adopted in this final rule, and representations must be made in accordance with this revised version of appendix M 180 days after this final rule is published. Representations must be made in accordance with the adopted appendix M1 when compliance with amended energy conservation standards is required.

Carrier and Mortex requested that the effective date of appendix M, including the changes published in the June 2016 final rule, be made 180 days from when this rule is finalized. (Carrier/UTC, No. 36 at p. 2; Mortex Products, Inc, No. 26 at p. 2) Ingersoll Rand recommended that all changes to M be made effective at the same time. (Ingersoll Rand, No. 38 at p. 3)

Mortex commented that if that is not possible, then the appendix M changes in the August 2016 SNOPR should be moved to appendix M1. (Mortex Products, Inc, No. 26 at p. 2) AHRI commented similarly. (AHRI, No. 27 at p. 8) JCI also recommended that all of the proposed test procedure changes in the August 2016 SNOPR in appendix M and all updated sections of 10 CFR 429 become effective at the same time that appendix M1 and the corresponding standard revision become effective. (JCI, No. 24 at p. 18) Goodman requested for multiple changes to variable-speed heat pumps be moved from appendix M to appendix M1 and requested that for those changes not moved to appendix M1, DOE exercise its authority under 42 U.S.C. 6293(c)(3) to extend the effective date another 180 days, for a total of 360 days in order to permit manufacturers a more appropriate time period to address the required changes. (Goodman, No. 39 at p. 12)

DOE notes that appendix M, as adopted in the June 2016 Final Rule, is already effective, and that the date by which representations must be in accordance with appendix M, as so adopted, is mandated by statute. (42 U.S.C. 6293(c)(2)) DOE maintains that appendix M revisions adopted in the final rule do not require re-testing as compared with appendix M as adopted in the June 2016 Final Rule (*i.e.,* DOE does not expect the revisions to change the ratings). In certain cases where commenters expressed specific concern, such as for the time delay requirement for off mode power consumption, DOE has moved items to appendix M1. As noted by Goodman, 42 U.S.C. 6293(c)(3)

does allow individual manufacturers to request an additional 180 days for representations. This request cannot be made through a rulemaking public comment submission and must be done through petition separately. (42 U.S.C. 6293(c)(3))

2. Comment Period Length

JCI commented that Under Section 323(b)(2) of EPCA, the public's opportunity to comment ''shall be not less than 60 days and may be extended for good cause shown to not more than 270 days.'' 42 U.S.C. 6293(b)(2) JCI commented that given the nature of the proposals in the August 2016 SNOPR, DOE is required to provide a minimum 60-day comment period. JCI commented that test procedure revisions are frequently complex and technical, and Section 323(b)(2) can only reasonably be read to provide a new comment period to ensure that the public has an adequate opportunity for public comment on each discrete test procedure proposal.

In response, DOE notes that this was the fifth round of comments on this particular test procedure rulemaking. Further, DOE made available the pre-publication notice to stakeholders 3 weeks in advance of the actual **Federal Register** publication, effectively allowing for almost a two-month review period. Third, DOE received comments on both sides of the issue both requesting an extension and urging the Secretary to finalize the test procedure as expeditiously as possible. Lastly, there is a statutory maximum comment period for which DOE must be mindful, which DOE was close to reaching. Consequently, DOE did not extend the comment period for the CAC/HP TP SNOPR.

3. Representations From Appendix M1 Before Compliance Date

Lennox recommended that representations in accordance with appendix M1 be permitted 12 months prior to the compliance date of the 2023 amended energy conservation standards. They stated that while there must be a clear differentiation between the current appendix M and new appendix M1 efficiency descriptors associated with the amended standards, permitting representations 12 months prior to adoption helps avoid market disruption on the compliance date. They added that one year allows contractors, distributors and manufacturers adequate time to plan and educate the supply chain in advance of the standard change. (Lennox, No. 25 at p. 2–3) ADP made a similar suggestion, except without setting a time limit on when the representations in accordance with appendix M1 could begin. (ADP, No. 23 at p. 3) Carrier strongly suggested that manufacturers not have any repercussion or penalties from DOE for choosing to comply early with appendix M1. (Carrier/UTC, No. 36 at p. 4)

DOE has guidance in place that allow manufacturers to use the appendix M1 test procedure early as long as they are following the guidelines outlined therein. More information regarding early compliance can be found at: *https://www1.eere.energy.gov/buildings/appliance_standards/pdfs/tp_earlyuse_faq_2014-8-25.pdf.*

E. Comments Regarding the June 2016 Final Rule

1. Determination of Represented Values for Single-Split Systems

In the June 2016 final rule DOE adopted provisions for determining the represented values of single-split system air conditioners based on recommendations from the CAC/HP ECS Working Group. The recommendations from the CAC/HP ECS Working Group (Recommendation #7 of the Term Sheet, see CAC ECS, No. 76 at p. 4) read as follows:

- Every combination distributed in commerce must be rated.
  - Every single-stage and two-stage condensing unit distributed in commerce (other than a condensing unit for a 1-to-1 mini split) must have at least 1 coil-only rating that is representative of the least efficient coil distributed in commerce with a particular condensing unit.
- Every condensing unit distributed in commerce must have at least 1 tested combination.
  - For single-stage and two-stage condensing units (other than condensing units for a 1-to-1 mini split), this must be a coil-only combination.
- All other combinations distributed in commerce for a given condensing unit may be rated based on the application of an AEDM or testing in accordance with the applicable sampling plan.

81 FR at 37002–03 (June 8, 2016)

In the June 2016 final rule, DOE adopted the first and third recommendations. DOE did not relax the HSVC requirement for tested combinations as intended as part of the second recommendation, but did explicitly codify the requirement to test a coil-only combinations for single-stage and two-stage condensing units (including SDHV and space-constrained systems).

AHRI commented that the CAC/HP ECS ASRAC Working Group's recommendations were made in the context of appendix M1, including the proposed requirement for two-stage condensing units (other than condensing units for a 1-to-1 mini split) to be a coil-only combination and have at least one tested combination. AHRI commented that implementing this requirement before the effective date of the 2023 standard would be contradictory to the Working Group's recommendation and that would be an excessive burden on manufacturers to retest products, specifically two-stage air conditioners, in a short period of time. AHRI requested that DOE modify the test procedure so this requirement would be implemented January 1, 2023. Nortek, Carrier/UTC, Lennox, and Ingersoll Rand commented similarly. (AHRI, No. 27, p. 2; Nortek, No. 22 at p. 2–3; Carrier/UTC, No. 36 at p. 2–3; Lennox, No. 25 at p. 3; Ingersoll Rand, No. 38 at p. 1–2)

Additionally, Nortek commented that the requirement that two-speed products be tested with a coil-only combination has the potential to change ratings derived previously using a blower coil or the ARM. Nortek commented that this was part of the consensus agreement of the negotiated rulemaking for the appendix M1 test procedure, and that implementing this in the appendix M test procedure may provide unintended consequences, namely that some high efficiency products may be removed from the market as a result of regional standards. Nortek suggested it would be best to implement this change in tested combination requirements with the appendix M1 test procedure. (Nortek, No. 22 at p. 19–20)

Nortek commented that it did not agree with DOE requiring a coil-only match for two-stage equipment, which they believed should be optional. Nortek commented that to provide the rated efficiency, multiple capacity systems require a matched indoor blower system to provide the correct air-flows at the different stages, and that a blower-coil match is appropriate for these systems. Nortek commented that they do not wish to market a match they believe is inconsistent with providing the rated efficiency. Nortek strongly encouraged DOE to reconsider requiring manufacturers to rate a hypothetical two-stage match that the manufacturer does not intend to market, and that it believes that unintended consequences will occur if they are forced to do so. (Nortek, No. 22 at p. 19–20)

First Co. commented that space-constrained thru-the-wall units are sold

and designed for installation with indoor air handlers fitted with ECM motors, meeting the applicable 12 SEER standard when matched with blower coil units. If the ''coil only'' testing requirement is enforced, most of these units will be unable to meet the 12 SEER standard because the default value for wattage in ''coil only'' testing exceeds the actual wattage of the high efficiency motors used in the blower coils with First Co. products. First Co. commented that their understanding is that the Working Group did not include a member that manufactures space-constrained units, but includes members that may benefit from the elimination of these products. (First Co, No. 21 at p. 2–3)

Lennox recommended that DOE further define the requirements for single and two-stage AC systems to test the ''least efficient'' combination and recommended that the ''least efficient'' combination be defined as the up-flow coil match with the lowest NGIFS. Lennox commented that it is common practice for manufacturers to rate several coils of various geometries at the base (*i.e.,* the least efficient level) for that product with the up-flow configuration being the most common, and that requiring a test of the lowest NGIFS up-flow coil clarifies which coil is required as the basis for testing. (Lennox, No. 25 at p. 3)

All of these comments address language adopted in the June 2016 Final Rule and for which no proposals were made in the August 2016 SNOPR. DOE notes that numerous coil-only two-stage combinations have been listed in DOE's CCMS and AHRI's database for years. For example, DOE identified 2,400 such combinations of two-stage split system air conditioners in a version of the database dating to late 2014. DOE also notes that the test procedure has specific provisions for setting air volume rate when testing such units (*i.e.* section 3.1.4.2.c of Appendix M), which correspond to how these units are typically installed in the field. These observations counter claims that multiple capacity systems require a matched indoor blower system and render this assertion false.

In response to First Co.'s comment regarding the required coil-only test for testing of space constrained products, DOE asserts that an exclusion for coil-only testing of space-constrained products was never established. DOE notes that prior to the effective date of the June 2016 final rule, paragraph (a)(2)(ii) of 10 CFR 429.16 still included text that stated that an exclusion for the coil-only test requirement applied for through-the-wall units that were sold and installed with blower coil indoor units. On January 23, 2010, all of the products meeting the definition for the product class of through-the-wall class of split system air conditioners were reclassified as part of the space constrained product class, for which a 12–SEER standard was set for cooling mode and a 7.4 HSPF standard was set for heat pump heating mode in a final rule published August 17, 2004. 69 FR 50997, 51001. Subsequently, the American Energy Manufacturing Technical Corrections Act (AEMTCA), which was signed into law on December 8, 2012, reintroduced definitions of through-the-wall air conditioners and through-the-wall heat pumps, which DOE subsequently codified into its regulations in a final rule published April 11, 2014. As part of that final rule, DOE made clear that products that meet the definition of through-the-wall air conditioners and heat pumps would be considered part of the space constrained air conditioner product class for regulatory purposes, regardless of whether they also met the definition of through-the-wall air conditioner. 79 FR 20091. Thus in DOE's view, First Company's assertion that the coil-only testing requirement did not apply to its through-the-wall products is invalid. Notwithstanding the requirement of all space constrained split system air conditioners that are single stage must be tested as coil-only, First Company explains in their own comment that their space-constrained through-the-wall condensing units are sold and designed for installation with indoor air handlers fitted with ECM motors. However, DOE notes the exclusion previously in 10 CFR 429.16(a)(2)(ii) for units that were sold and installed with blower coil indoor units would not have encompassed the circumstances that First Company describes. Thus, First Company would have always been subject to the coil-only requirement. While the language being adopted in this final rule removes the exclusion for through-the-wall units that were sold and installed with blower coil units from the coil-only testing requirement, this should have no effect on First Company's ratings if rated in accordance with current regulations. If a manufacturer believes that coil-only testing of a product is not appropriate because the basic model is only sold and installed exclusively with blower coil indoor units, the manufacturer may petition DOE for a test procedure waiver showing that installation is exclusively blower coil and requesting a blower coil test. To date, DOE has not received any petitions of this kind.

2. Alternative Efficiency Determination Methods

In the June 2016 Final Rule, DOE adopted alternative efficiency determination method (AEDM) requirements for central air conditioner and heat pumps in place of the previously used alternative rating methods (ARMs). 81 FR at 37054 (June 8, 2016). DOE did not allow the use of AEDMs for multi-split systems. 81 FR at 37052.

First Co. commented that ICMs, including First Co., have used DOE approved Alternative Rating Methods (ARMs) for many years, and converting from using an ARM to an ADEM requires extensive engineering time and laboratory testing. First Co. contends that DOE's claim that it is not requiring ICMs to conduct additional testing for AEDM validation fails to recognize that additional testing beyond certification testing is necessary for ICMs to develop a new AEDM. First Co. commented that compliance by the deadline will be nearly impossible for ICMs that lack their own testing facility and that the extensive time and engineering that ICMs must devote to the meet the new regulations deprives them of the opportunity to innovate or improve existing product lines. (First Co, No. 21 at p. 1)

AHRI commented that the ''tested combination'' requirements for multi-split systems require manufacturers to test at least two samples of a ''tested combination'' for non-ducted indoor units and at least another two samples of a ''tested combination'' for ducted indoor units. AHRI commented that as an AEDM cannot be used to rate a Basic Model, this causes more burden on the multi-split manufacturer than the non-multi-split manufacturer, and is not in line with the fact that other products can have two samples of a single tested combination tested with unlimited number of non-tested combinations rated by AEDM. AHRI commented that performing all required tests in six months is not achievable by some manufacturers. AHRI requested that DOE reconsider the option to apply the AEDM for multi-splits <65,000 Btu/h in the same manner as applied for VRFs ≥65,000 Btu/h. (AHRI, No. 27 at p. 20)

All of these comments address language adopted in the June 2016 Final Rule and for which no proposals were made in the August 2016 SNOPR. As a result, DOE is declining to modify these requirements in this final rule.

3. NGIFS Limit for Outdoor Unit With No Match

In the June 2016 Final Rule, DOE adopted the required NGIFS for an indoor unit tested with an outdoor unit with no match to be 1.0. 81 FR at 37009–10 (June 8, 2016)

Nortek and AHRI commented that the NGIFS limitation of 1.0 as finalized in the June 2016 Final Rule is only applicable to coils with ⅜-inch diameter tubes and is not applicable to either microchannel, 5⁄16″, or 7mm diameter tubes, or any other diameter tubes. (Nortek, No. 22 at p. 5–6; AHRI, No. 27 at p. 6)

DOE responds that the vast majority of indoor units that are field-matched with no-match outdoor units have ⅜-in OD tubing, which was used almost exclusively for CAC/HP evaporators before 2010. Further, as stated previously, this requirement was not part of the August 2016 SNOPR, and as such, DOE cannot modify this requirement in this final rule. Section III.A.5.f addresses concerns about the applicability of the requirements (such as for tube styles) of indoor units to be tested with no-match outdoor units.

4. Definitions

In the June 2016 Final Rule, DOE adopted definitions for multi-split system. 81 FR at 37059 (June 8, 2016).

Mitsubishi, AHRI and Nortek commented that DOE had previously agreed to remove coil-only from the multi-split definition. (Mitsubishi, No. 29 at p. 5; AHRI, No. 27 at p. 22; Nortek, No. 22 at p. 19) Mortex commented that there will be applications for coil-only indoor units and thus there is no reason to remove coil-only from the proposed definition. (EERE–2016–BT–TP–0029, No. 26 at p. 3) As stated previously, this requirement was not part of the August 2016 SNOPR, and as such, DOE cannot modify this requirement in this final rule. Additionally, DOE agrees with Mortex that it is a possible application that coil-only indoor units are used in a multi-split system, so keeping coil-only in the multi-split definition is reasonable and there is no need to modify the definition.

5. Inlet Plenum Setup

In the June 2016 Final Rule, DOE clarified the indoor unit air inlet geometry and specifically made revision to avoid inlet plenum being installed upstream of the airflow prevention device. 81 FR at 37037 (June 8, 2016).

AHRI and Nortek commented that DOE's clarification of inlet plenum brings concern that an overall height will exceed the current height limit of many psychrometric rooms. AHRI and Nortek requested DOE to consider allowing an alternative approach, included in ASHRAE's research project 1581. Specifically, AHRI and Nortek requested that DOE approve the use of the 6″ skirt coupled with the 90° square vane elbow and the appropriate leaving duct as being an alternative to the configuration. ASHRAE Standards Policy Committee (SPC) is currently working to add the details of RP 1581 to the standard and has a Work Statement for a project investigating the damper box/inlet duct to provide an improved recommendation for that as well. (AHRI, No. 27 at p. 21; Nortek, No. 22 at p. 17–18)

As stated previously, this requirement was not part of the August 2016 SNOPR, and as such, DOE cannot modify this requirement in this final rule. However, DOE is willing to consider this change in a future rulemaking after ASHRAE Standards Policy Committee has published standard revision to reflect this recommendation.

6. Off-Mode Power Consumption

In the June 2016 Final Rule, DOE adopted the off-mode test procedure and the method of calculation. In addition, DOE required that the calculated P1 and P2 should be rounded to the nearest watt. 81 FR at 37095–97 (June 8, 2016).

AHRI and Nortek commented that the accuracy of 0.5% for all watt-hour measurement in section 2.8 is not feasible for off-mode power measurement because it can be very close to zero. So AHRI suggested that the accuracy requirement in section 2.8 be 0.5% or 0.5 W, whichever is greater. (AHRI, No. 27 at p. 22; Nortek, No. 22 at p. 18) Ingersoll Rand recommended that the accuracy for the off mode power consumption measurement be 0.5 watts. (Ingersoll Rand, No. 38 at p. 5)

As stated previously, this requirement was not part of the August 2016 SNOPR, and as such, DOE cannot modify this requirement in this final rule. Mitsubishi expressed concern that multi-split systems were not fully considered in the development of off-mode tests, and requested that DOE review the off-mode power requirements to ensure that multi-split systems are not inadvertently disadvantaged. (Mitsubishi, No. 29 at p. 5)

Although DOE cannot modify this requirement in this final rule, DOE has reviewed the off-mode requirements and believes that multi-split systems should follow the same procedure—thus no change to the test procedure to specifically address multi-split systems is needed. DOE understands that the off-mode testing for multi-split system may be more complicated, but manufacturers have the option to develop an AEDM for most off-mode ratings if additional test requirements are necessary.

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Order 12866

The Office of Management and Budget (OMB) has determined that test procedure rulemakings do not constitute ''significant regulatory actions'' under section 3(f) of Executive Order 12866, Regulatory Planning and Review, 58 FR 51735 (Oct. 4, 1993). Accordingly, this action was not subject to review under the Executive Order by the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of a final regulatory flexibility analysis (FRFA) for any final rule, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. A required by Executive Order 13272, ''Proper Consideration of Small Entities in Agency Rulemaking,'' 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the DOE rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's Web site: *http://energy.gov/gc/office-general-counsel*.

DOE reviewed this final rule under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003. This final rule establishes two sets of test procedure changes: One set of changes to DOE's already-existing test procedure, appendix M; and another set of changes to create a new appendix M1 that would be used for testing to demonstrate compliance with any amended energy conservation standards. DOE has estimated the impacts of both sets of test procedure changes on small business manufacturers.

1. Description and Estimate of the Number of Small Entities Affected

For the purpose of the regulatory flexibility analysis for this final rule, DOE adopts the Small Business Administration (SBA) definition of a

small entity within this industry as a manufacturing enterprise with 1,250 employees or fewer. DOE used the SBA's size standards to determine whether any small entities would be required to comply with the rule. The size standards are codified at 13 CFR part 121. The standards are listed by North American Industry Classification System (NAICS) code and industry description are available at: *https://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf*. CAC/HP manufacturers are classified under NAICS 333415, ''Air Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing.'' 70 FR 12395 (March 11, 2005)

To estimate the number of small business manufacturers of equipment affected by this rulemaking, DOE conducted a market survey using available public information. DOE's research involved industry trade association membership directories (including AHRI), individual company Web sites, and market research tools (*e.g.,* Hoovers reports) to create a list of companies that manufacture products applicable to this rulemaking. DOE presented its list to manufacturers in MIA interviews and asked industry representatives if they were aware of any other small manufacturers during manufacturer interviews and ASRAC Working Group meetings. DOE reviewed publicly-available data and contacted companies on its list, as necessary, to determine whether they met the SBA's definition of a small business manufacturer. DOE screened out companies that do not offer products applicable to this rulemaking, do not meet the definition of a small business, or are foreign-owned and operated.

DOE identified 22 manufacturers of residential central air conditioners and heat pumps that would be considered domestic small businesses with a total of less than 3 percent of the market sales.

2. Discussion of Testing Burden and Comments

a. Testing Burdens

Potential impacts of the amended test procedure on all manufacturers, including small businesses, come from impacts associated with the cost of additional testing. DOE expects that many of the provisions in this notice will result in no increase to test burden. DOE's mandate to use new heating load line equation provisions to calculate HSPF for heat pumps, new default values for indoor fan power consumption, and a new interpolation approach for COP of variable-speed heat pumps are changes to calculations and do not require any additional time or investment from manufacturers. Similarly, DOE's mandate to require certification of the time delay used when testing coil-only units does not affect testing. DOE's mandate to test at new minimum external static pressure conditions would require manufacturers to test at different, but not additional test points using the same equipment and methodologies required by the current test procedure. DOE's mandate for single-package units to make the official test the test that does not include the secondary outdoor air enthalpy method measurement also does not require any additional testing. Similarly, DOE's mandate to include an optional test at 5 °F for variable-speed heat pumps does not require manufacturers to do any additional testing. However, other provisions may increase test burden. DOE anticipates that changes to provisions for mini-split refrigerant pressure lines may cause labs and manufacturers to relocate pressure transducers or in a worst case scenario, build a separate satellite test instrumentation console for pressure measurements closer to the test samples. DOE estimates that building such a satellite console would constitute a one-time cost on the order of $1,000 per test room. DOE's mandate to modify the off mode test for units with self-regulated crankcase heaters could result in more significant increases to test burden, but for a small number of models. DOE estimates that the new provisions could add 8 hours per test for units with self-regulated crankcase heaters and an additional 8 hours for those units with self-regulated crankcase heaters that also have a compressor sound blanket. Sound blankets are premium features. DOE estimates that less than 25 percent of all units have self-regulated crankcase heaters and less than 5 percent have self-regulated crankcase heaters and sound blankets. DOE estimates the additional cost of testing to be $250 for units with self-regulating crankcase heaters and $500 for units with self-regulating crankcase heaters and sound blankets. DOE also estimates that testing of basic models may not have to be updated more than once every five years, and therefore the average incremental burden of testing one basic model may be one-fifth of these values when the cost is spread over several years.

DOE mandates labeling requirements for the indoor and outdoor units of mobile home blower coil and coil-only systems and is also requiring that manufacturers include a specific designation in the installation instructions for these units. DOE estimates the additional cost to manufacturers associated with meeting the labeling requirement to be marginal as compared to the total production cost and the overall impact to be small.

As discussed in this preamble, DOE identified 22 domestic small business manufacturers of residential central air conditioners and heat pumps. Of these, only OUMs that operate their own manufacturing facilities (*i.e.,* are not private labelers selling only models manufactured by other entities) and OUM importing private labelers would be subject to the additional requirements for testing required by this proposed rule. DOE identified 12 such small businesses but was able to estimate the number of basic models associated only with nine of these.

DOE requires that only one combination associated with any given outdoor unit be laboratory tested. 10 CFR 429.16(b). The majority of residential central air conditioners and heat pumps offered by a manufacturer are split-system combinations that are not required to be laboratory tested but can be certified using an AEDM that does not require DOE testing of these units. DOE reviewed available data for the nine small businesses to estimate the incremental testing cost burden those firms might experience due to the revised test procedure. These manufacturers had an average of 35 models requiring testing. DOE determined the numbers of models using the AHRI Directory of Certified Product Performance, *www.ahridirectory.org/ahridirectory/pages/home.aspx*. As discussed, DOE estimates that less than 25 percent of models have self-regulating crankcase heaters and less than 5 percent have self-regulating crankcase heaters with blankets. Applying these estimates to the average 35 models for each small manufacturer results in an estimated two models with $500 per model in additional test costs and nine models with $250 per model in additional test costs as a result of the proposed changes. The additional testing cost for final certification of these models was therefore estimated at $3,250. Meanwhile, these certifications would be expected to last the residential central air conditioner and heat pump life, estimated to be at least five years based on the time frame established in EPCA for DOE review of central air conditioner efficiency standards. Hence, average annual additional costs for these small business manufacturers to perform the tests is $650.

DOE does not expect ICMs to incur any additional burden as a result of the amended changes because the changes for which DOE estimates there will be increased burden do not apply to ICMs. Only outdoor units include self-regulating crankcase heaters with or without blankets, and DOE assumes that ICM manufacturers do not produce indoor units that have components with off mode power consumption. Consequently, ICMs would be able to use the off mode power measurements acquired and certified by OUMs to meet the test procedure requirements for off mode. Regarding the changes for mini-split refrigerant lines, DOE is not aware of any ICMs that maintain in-house test facilities. Consequently, the one-time cost associated with the amended changes for mini-split refrigerant lines would not be incurred by the ICM. DOE also anticipates that the one-time cost is low enough that the per-test cost charged by independent labs that provide testing services to ICMs would not increase as a result of this change.

b. Comments on the SNOPR Regulatory Flexibility Analysis

Manufacturers commented that DOE's analysis does not accurately address the negative impacts of M and M1 test procedure changes that small manufacturers and ICMs may face. Particularly, Advanced Distributor Products (ADP) noted that DOE's small business impacts focused solely on the cost of these test procedure changes and do not take cumulative regulatory burden into consideration. A few manufacturers stated that residential central air conditioner and heat pump regulations threaten their ability to compete in the market, which in turn will reduce competition and consumer choices. According to ADP, these negative impacts are primarily due to the requirement to report data that ICMs do not possess. (ADP, No. 23 at p. 6) Mortex attributes these negative impacts to cumulative regulatory burden. (Mortex, No. 26 at p. 4) First Co. cites excessive testing and unreasonable deadlines as drivers of disproportionate impacts that may reduce competition. First Co. attributes these negative impacts to the provisions finalized in the June 2016 test procedure final rule. (First Co., No. 21 at p. 5)

DOE acknowledges the commenters' concerns that manufacturers may face cumulative regulatory burdens and disproportionate impacts. As discussed throughout this notice, DOE recognizes ADP's concern related to data reporting for ICMs and will address these issues through a separate process. Regarding Mortex's concerns with cumulative regulatory burden, DOE conducts an analysis of cumulative regulatory burden as part of the concurrent energy conservation standards rulemaking. Regardless of the findings of that analysis, DOE concludes with this FRFA that the burdens associated only with this rulemaking are not significant. DOE also understands that not all manufacturers have equal access to the resources needed to meet with the requirements of this final rule. EPCA does allow individual manufacturers to request an additional 180 days for representations—such a request cannot be made through a rulemaking public comment period submission and must be done through petition. (42 U.S.C 6293(c)(3)) The majority of the factors cited by First Co. as contributing to threats to their ability to compete are provisions adopted in the June 2016 Final Rule and for which no proposals were made in the August 2016 SNOPR. As a result, DOE cannot modify these requirements in this final rule.

First Co. noted that the ASRAC Working Group did not include a manufacturer of space-constrained products, but rather included manufacturers that may benefit from the elimination of these products from the market. Prior to adopting the Working Group recommendations, First Co. said that DOE should have sought public comments on this matter. (First Co., No. 21 at p. 2) Additionally, Unico commented that small entities typically offer niche products, such as space-constrained and small duct high velocity products, that larger companies do not manufacture. Unico believes small entities, like itself, will be disproportionately impacted by this final rule because, for SDHV, half the system is duct work which is not tested as part of the equipment. Consequently, comparing the real-life performance of small duct systems with other systems is difficult. (Unico, No. 30 at p. 7)

In response, DOE acknowledges First Co.'s concerns regarding the lack of representation of space-constrained manufacturers in the Working Group. During the NOPR stage, DOE identified four manufacturers of space-constrained units. Of the four, two are AHRI members. Although these manufacturers were not present at Working Group meetings, AHRI served as a Working Group member. DOE assumes that AHRI represented all of their members' interests throughout the negotiations. During the NODA phase of the rulemaking, DOE invited space-constrained manufacturers to participate in interviews but none were conducted.

In regards to Unico's comment, many of the CAC/HP products subject to this test procedure are installed and used with duct work. The test procedure does not include duct work for these products either. Instead, the test conditions for this procedure include provisions for minimum external static pressure, which is intended to mimic the operating conditions consistent with field duct work for each product. These minimum external static pressure requirements differ by product because not all CAC/HP are installed with the same duct work. These differing external static pressure requirements ensure that test results are representative of field conditions and can provide reasonable comparisons of performance.

Based on its research and discussions presented in this section, DOE concludes that the cost burdens accruing from the residential central air conditioner and heat pump test procedure final rule will not constitute ''significant economic impact on a substantial number of small entities.''

C. Review Under the Paperwork Reduction Act of 1995

Manufacturers of central air conditioners and heat pumps must certify to DOE that their products comply with any applicable energy conservation standards. In certifying compliance, manufacturers must test their products according to the DOE test procedures for central air conditioners and heat pumps, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including central air conditioners and heat pumps. 76 FR 12422 (March 7, 2011); 80 FR 5099 (Jan. 30, 2015). The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act (PRA). This requirement has been approved by OMB under OMB control number 1910–1400. Public reporting burden for the certification is estimated to average 30 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

D. Review Under the National Environmental Policy Act of 1969

In this final rule, DOE amends its test procedure amendments that it expects will be used to develop and implement future energy conservation standards for central air conditioners and heat pumps. DOE has determined that this rule falls into a class of actions that are categorically excluded from review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) and DOE's implementing regulations at 10 CFR part 1021. Specifically, this final rule amends the existing test procedures without affecting the amount, quality or distribution of energy usage, and, therefore, will not result in any environmental impacts. Thus, this rulemaking is covered by Categorical Exclusion A5 under 10 CFR part 1021, subpart D, which applies to any rulemaking that interprets or amends an existing rule without changing the environmental effect of that rule. Accordingly, neither an environmental assessment nor an environmental impact statement is required.

DOE's CX determination for this final rule is available at *http://energy.gov/nepa/categorical-exclusion-cx-determinations-cx.*

E. Review Under Executive Order 13132

Executive Order 13132, ''Federalism,'' 64 FR 43255 (August 4, 1999) imposes certain requirements on agencies formulating and implementing policies or regulations that preempt State law or that have Federalism implications. The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive Order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this final rule and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this final rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297(d)) No further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

Regarding the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, ''Civil Justice Reform,'' 61 FR 4729 (Feb. 7, 1996), imposes on Federal agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general standard; and (4) promote simplification and burden reduction. Section 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in sections 3(a) and 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this final rule meets the relevant standards of Executive Order 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Public Law 104–4, sec. 201 (codified at 2 U.S.C. 1531). For a regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of $100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed ''significant intergovernmental mandate,'' and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect small governments. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820; also available at *http://energy.gov/gc/office-general-counsel.* DOE examined this final rule according to UMRA and its statement of policy and determined that the rule contains neither an intergovernmental mandate, nor a mandate that may result in the expenditure of $100 million or more in any year, so these requirements do not apply.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Public Law 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This final rule will not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

DOE has determined, under Executive Order 12630, ''Governmental Actions and Interference with Constitutionally Protected Property Rights'' 53 FR 8859 (March 18, 1988), that this regulation will not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for agencies to review most disseminations of information to the public under guidelines established by each agency pursuant to general guidelines issued by OMB. OMB's guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE's guidelines were published at 67 FR 62446 (Oct. 7, 2002). DOE has reviewed this final rule under the OMB and DOE guidelines and has concluded that it is

consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,'' 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OMB, a Statement of Energy Effects for any significant energy action. A ''significant energy action'' is defined as any action by an agency that promulgated or is expected to lead to promulgation of a final rule, and that: (1) Is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (3) is designated by the Administrator of OIRA as a significant energy action. For any significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

The regulatory action to amend the test procedure for measuring the energy efficiency of central air conditioners and heat pumps is not a significant regulatory action under Executive Order 12866. Moreover, it will not have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as a significant energy action by the Administrator of OIRA. Therefore, it is not a significant energy action, and, accordingly, DOE has not prepared a Statement of Energy Effects.

L. Review Under Section 32 of the Federal Energy Administration Act of 1974

Under section 301 of the Department of Energy Organization Act (Pub. L. 95–91; 42 U.S.C. 7101), DOE must comply with section 32 of the Federal Energy Administration Act of 1974, as amended by the Federal Energy Administration Authorization Act of 1977. (15 U.S.C. 788; FEAA) Section 32 essentially provides in relevant part that, where a proposed rule authorizes or requires use of commercial standards, the notice of proposed rulemaking must inform the public of the use and background of such standards. In addition, section 32(c) requires DOE to consult with the Attorney General and the Chairman of the Federal Trade Commission (FTC) concerning the impact of the commercial or industry standards on competition.

The rule incorporates testing methods contained in the following commercial standards: AHRI 210/240–2008 with Addendum 1 and 2, Performance Rating of Unitary Air Conditioning & Air-Source Heat Pump Equipment; and ANSI/AHRI 1230–2010 with Addendum 2, Performance Rating of Variable Refrigerant Flow Multi-Split Air Conditioning and Heat Pump Equipment. While the proposed test procedure is not exclusively based on AHRI 210/240–2008 or ANSI/AHRI 1230–2010, one component of the test procedure, namely test setup requirements, adopts language from AHRI 210/240–2008 without amendment; and another component of the test procedure, namely test setup and test performance requirements for multi-split systems, adopts language from ANSI/AHRI 1230–2010 without amendment. DOE has evaluated these standards and consulted with the Attorney General and the Chairman of the FTC and has concluded that this final rule fully complies with the requirement of section 32(b) of the FEAA.

M. Description of Materials Incorporated by Reference

In this final rule, DOE incorporates by reference (IBR) into appendix M1 to subpart B of part 430 specific sections, figures, and tables of several test standards published by AHRI, ASHRAE, and AMCA that are already incorporated by reference into appendix M to subpart B of part 430: ANSI/AHRI 210/240–2008 with Addenda 1 and 2, titled ''Performance Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment;'' ANSI/AHRI 1230–2010 with Addendum 2, titled ''Performance Rating of Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment;'' ASHRAE 23.1–2010, titled ''Methods of Testing for Rating the Performance of Positive Displacement Refrigerant Compressors and Condensing Units that Operate at Subcritical Temperatures of the Refrigerant;'' ASHRAE Standard 37–2009, titled ''Methods of Testing for Rating Electrically Driven Unitary Air-Conditioning and Heat Pump Equipment;'' ASHRAE 41.1–2013, titled ''Standard Method for Temperature Measurement;'' ASHRAE 41.2–1987 (RA 1992), titled ''Standard Methods for Laboratory Airflow Measurement;'' ASHRAE 41.6–2014, titled ''Standard Method for Humidity Measurement;'' ASHRAE 41.9–2011, titled ''Standard Methods for Volatile-Refrigerant Mass Flow Measurements Using Calorimeters;'' ASHRAE 116–2010, titled ''Methods of Testing for Rating Seasonal Efficiency of Unitary Air Conditioners and Heat Pumps;'' and AMCA 210–2007, titled ''Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating.''

ANSI/AHRI 210/240–2008 is an industry accepted test procedure that measures the cooling and heating performance of central air conditioners and heat pumps and is applicable to products sold in North America. The test procedure in this final rule references various sections of ANSI/AHRI 210/240–2008 that address test setup, test conditions, and rating requirements. ANSI/AHRI 210/240–2008 is readily available on AHRI's Web site at *http://www.ahrinet.org/site/686/Standards/HVACR-Industry-Standards/Search-Standards*.

ANSI/AHRI 1230–2010 is an industry accepted test procedure that measures the cooling and heating performance of variable refrigerant flow (VRF) multi-split air conditioners and heat pumps and is applicable to products sold in North America. The test procedure in this final rule for VRF multi-split systems references various sections of ANSI/AHRI 1230–2010 that address test setup, test conditions, and rating requirements. ANSI/AHRI 1230–2010 is readily available on AHRI's Web site at *http://www.ahrinet.org/site/686/Standards/HVACR-Industry-Standards/Search-Standards*.

ASHRAE 23.1–2010 is an industry accepted test procedure for rating the thermodynamic performance of positive displacement refrigerant compressors and condensing units that operate at subcritical temperatures. The test procedure in this final rule references sections of ASHRAE 23.1–2010 that address requirements, instruments, methods of testing, and testing procedure specific to compressor calibration. ASHRAE 23.1–2010 can be purchased from ASHRAE's Web site at *https://www.ashrae.org/resources-publications*.

ASHRAE Standard 37–2009 is an industry accepted standard that provides test methods for determining the cooling capacity of unitary air conditioning equipment and the cooling or heating capacities, or both, of unitary heat pump equipment. The test procedure in this final rule references various sections of ASHRAE Standard 37–2009 that address test conditions and test procedures. ASHRAE Standard 37–2009 can be purchased from ASHRAE's Web site at *https://www.ashrae.org/resources-publications*.

ASHRAE 41.1–2013 is an industry accepted method for measuring temperature in testing heating, refrigerating, and air conditioning equipment. The test procedure in this

final rule references sections of ASHRAE 41.1–2013 that address requirements, instruments, and methods for measuring temperature. ASHRAE 41.1–2013 can be purchased from ASHRAE's Web site at *https://www.ashrae.org/resources-publications*.

ASHRAE 41.2–1987 (RA 1992) is an industry accepted test method for measuring airflow. The test procedure in this final rule references sections of ASHRAE 41.2–1987 (RA 1992) that address test setup and test methods. ASHRAE 41.2–1987 (RA 1992) can be purchased from ASHRAE's Web site at *https://www.ashrae.org/resources-publications*.

ASHRAE 41.6–2014 is an industry accepted test method for measuring humidity of moist air. The test procedure in this final rule references sections of ASHRAE 41.6–2014 that address requirements, instruments, and methods for measuring humidity. ASHRAE 41.6–2014 can be purchased from ASHRAE's Web site at *https://www.ashrae.org/resources-publications*.

ASHRAE 41.9–2011 is an industry accepted standard that provides recommended practices for measuring the mass flow rate of volatile refrigerants using calorimeters. The test procedure in this final rule references sections of ASHRAE 41.9–2011 that address requirements, instruments, and methods for measuring refrigerant flow during compressor calibration. ASHRAE 41.9–2011 can be purchased from ASHRAE's Web site at *https://www.ashrae.org/resources-publications*.

ANSI/ASHRAE Standard 116–2010 is an industry accepted standard that provides test methods and calculation procedures for determining the capacities and cooling seasonal efficiency ratios for unitary air-conditioning, and heat pump equipment and heating seasonal performance factors for heat pump equipment. The test procedure in this final rule references various sections of ANSI/ASHRAE 116–2010 that addresses test methods and calculations. ANSI/ASHRAE Standard 116–2010 can be purchased from ASHRAE's Web site at *https://www.ashrae.org/resources-publications*.

AMCA 210–2007 is an industry accepted standard that establishes uniform test methods for a laboratory test of a fan or other air moving device to determine its aerodynamic performance in terms of airflow rate, pressure developed, power consumption, air density, speed of rotation, and efficiency for rating or guarantee purposes. The test procedure in this final rule references various sections of AMCA 210–2007 that address test conditions. AMCA 210–2007 can be purchased from AMCA's Web site at *http://www.amca.org/store/index.php*.

N. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this rule before its effective date. The report will state that it has been determined that the rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final rule.

List of Subjects

10 CFR Part 429

Administrative practice and procedure, Confidential business information, Energy conservation, Reporting and recordkeeping requirements.

10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Energy conservation test procedures, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Small businesses.

Issued in Washington, DC, on November 30, 2016.

Kathleen B. Hogan,

Deputy Assistant Secretary for Energy Efficiency, Energy Efficiency and Renewable Energy.

For the reasons stated in the preamble, DOE amends parts 429 and 430 of chapter II of title 10, subpart B, Code of Federal Regulations, as set forth below:

PART 429—CERTIFICATION, COMPLIANCE, AND ENFORCEMENT FOR CONSUMER PRODUCTS AND COMMERCIAL AND INDUSTRIAL EQUIPMENT

■ 1. The authority citation for part 429 continues to read as follows:

Authority: 42 U.S.C. 6291–6317; 28 U.S.C. 2461 note.

■ 2. Section 429.11 is amended by revising paragraph (a) to read as follows:

§ 429.11 General sampling requirements for selecting units to be tested.

(a) When testing of covered products or covered equipment is required to comply with section 323(c) of the Act, or to comply with rules prescribed under section 324, 325, or 342, 344, 345 or 346 of the Act, a sample comprised of production units (or units representative of production units) of the basic model being tested must be selected at random and tested, and must meet the criteria found in §§ 429.14 through 429.62 of this subpart. Components of similar design may be substituted without additional testing if the substitution does not affect energy or water consumption. Any represented values of measures of energy efficiency, water efficiency, energy consumption, or water consumption for all individual models represented by a given basic model must be the same, except for central air conditioners and central air conditioning heat pumps, as specified in § 429.16 of this subpart.

* * * * *

■ 3. Section 429.16 is amended by:

■ a. Revising paragraph (a)(1);

■ b. Redesignating paragraphs (a)(3) and (4) as paragraphs (a)(4) and (5);

■ c. Adding new paragraph (a)(3);

■ d. Revising newly designated paragraph (a)(4)(i) and paragraph (b)(2)(i);

■ e. Revising paragraphs (b)(3) introductory text and (b)(3)(ii) and (iii);

■ f. Removing paragraph (b)(3)(iv); and

■ g. Revising paragraphs (c)(1)(i)(B), (c)(2) and (3), (d)(2) through (4), (e)(2) through (4), (f) introductory text, (f)(1) and (2), and (f)(4) and (5).

The revisions and addition read as follows:

§ 429.16 Central air conditioners and central air conditioning heat pumps.

(a) *Determination of Represented Value*—(1) *Required represented values.* Determine the represented values (including SEER, EER, HSPF, SEER2, EER2, HSPF2, $P_{W,OFF}$, cooling capacity, and heating capacity, as applicable) for the individual models/combinations (or ''tested combinations'') specified in the following table.

Category	Equipment subcategory	Required represented values
Single-Package unit	Single-Package AC (including Space-Constrained).	Every individual model distributed in commerce.
	Single-Package HP (including Space-Constrained).	
Outdoor Unit and Indoor Unit (Distributed in Commerce by OUM).	Single-Split-System AC with Single-Stage or Two-Stage Compressor (including Space-Constrained and Small-Duct, High Velocity Systems (SDHV)).	Every individual combination distributed in commerce must be rated as a coil-only combination. For each model of outdoor unit, this must include at least one coil-only value that is representative of the least efficient combination distributed in commerce with that particular model of outdoor unit. Additional blower-coil representations are allowed for any applicable individual combinations, if distributed in commerce.
	Single-Split-System AC with Other Than Single-Stage or Two-Stage Compressor (including Space-Constrained and SDHV).	Every individual combination distributed in commerce, including all coil-only and blower coil combinations.
	Single-Split-System HP (including Space-Constrained and SDHV).	Every individual combination distributed in commerce.
	Multi-Split, Multi-Circuit, or Multi-Head Mini-Split Split System—non-SDHV (including Space-Constrained).	For each model of outdoor unit, at a minimum, a non-ducted ''tested combination.'' For any model of outdoor unit also sold with models of ducted indoor units, a ducted ''tested combination.'' When determining represented values on or after January 1, 2023, the ducted ''tested combination'' must comprise the highest static variety of ducted indoor unit distributed in commerce (*i.e.,* conventional, mid-static, or low-static). Additional representations are allowed, as described in paragraph (c)(3)(i) of this section.
	Multi-Split, Multi-Circuit, or Multi-Head Mini-Split Split System—SDHV.	For each model of outdoor unit, an SDHV ''tested combination.'' Additional representations are allowed, as described in paragraph (c)(3)(ii) of this section.
Indoor Unit Only Distributed in Commerce by ICM).	Single-Split-System Air Conditioner (including Space-Constrained and SDHV).	Every individual combination distributed in commerce.
	Single-Split-System Heat Pump (including Space-Constrained and SDHV).	
	Multi-Split, Multi-Circuit, or Multi-Head Mini-Split Split System—SDHV.	For a model of indoor unit within each basic model, an SDHV ''tested combination.'' Additional representations are allowed, as described in section (c)(3)(ii) of this section.
Outdoor Unit with no Match		Every model of outdoor unit distributed in commerce (tested with a model of coil-only indoor unit as specified in paragraph (b)(2)(i) of this section).

* * * * *

(3) *Refrigerants.* (i) If a model of outdoor unit (used in a single-split, multi-split, multi-circuit, multi-head mini-split, and/or outdoor unit with no match system) is distributed in commerce and approved for use with multiple refrigerants, a manufacturer must determine all represented values for that model using each refrigerant that can be used in an individual combination of the basic model (including outdoor units with no match or ''tested combinations''). This requirement may apply across the listed categories in the table in paragraph (a)(1) of this section. A refrigerant is considered approved for use if it is listed on the nameplate of the outdoor unit. If any of the refrigerants approved for use is HCFC-22 or has a 95 °F midpoint saturation absolute pressure that is +/− 18 percent of the 95 °F saturation absolute pressure for HCFC-22, or if there are no refrigerants designated as approved for use, a manufacturer must determine represented values (including SEER, EER, HSPF, SEER2, EER2, HSPF2, $P_{W,OFF}$, cooling capacity, and heating capacity, as applicable) for, at a minimum, an outdoor unit with no match. If a model of outdoor unit is not charged with a specified refrigerant from the point of manufacture or if the unit is shipped requiring the addition of more than two pounds of refrigerant to meet the charge required for testing per section 2.2.5 of appendix M or appendix M1 (unless either (a) the factory charge is equal to or greater than 70% of the outdoor unit internal volume times the liquid density of refrigerant at 95 °F or (b) an A2L refrigerant is approved for use and listed in the certification report), a manufacturer must determine represented values (including SEER, EER, HSPF, SEER2, EER2, HSPF2, $P_{W,OFF}$, cooling capacity, and heating capacity, as applicable) for, at a minimum, an outdoor unit with no match.

(ii) If a model is approved for use with multiple refrigerants, a manufacturer may make multiple separate representations for the performance of that model (all within the same individual combination or outdoor unit with no match) using the multiple approved refrigerants. In the alternative, manufacturers may certify the model (all within the same individual combination or outdoor unit with no match) with a single representation, provided that the represented value is no more efficient than its performance using the least-efficient refrigerant. If a manufacturer certifies a single model with multiple representations for the different approved refrigerants, it may use an AEDM to determine the represented values for all other refrigerants besides the refrigerant used for testing. A single representation made for multiple refrigerants may not include equipment in multiple categories or equipment subcategories listed in the table in paragraph (a)(1) of this section.

(4) * * *

(i) *Regional.* A basic model may only be certified as compliant with a regional standard if all individual combinations within that basic model meet the regional standard for which it is certified. A model of outdoor unit that is certified below a regional standard can only be rated and certified as compliant with a regional standard if the model of outdoor unit has a unique model number and has been certified as a different basic model for distribution in each region. An ICM cannot certify an

individual combination with a rating that is compliant with a regional standard if the individual combination includes a model of outdoor unit that the OUM has certified with a rating that is not compliant with a regional standard. Conversely, an ICM cannot certify an individual combination with a rating that is not compliant with a regional standard if the individual combination includes a model of outdoor unit that an OUM has certified with a rating that is compliant with a regional standard.

* * * * *

(b) * * *

(2) *Individual model/combination selection for testing.* (i) The table identifies the minimum testing requirements for each basic model that includes multiple individual models/combinations; if a basic model spans multiple categories or subcategories listed in the table, multiple testing requirements apply. For each basic model that includes only one individual model/combination, test that individual model/combination. For single-split-system non-space-constrained air conditioners and heat pumps, when testing is required in accordance with 10 CFR part 430, subpart B, appendix M1, these requirements do not apply until July 1, 2024, provided that the manufacturer is certifying compliance of all basic models using an AEDM in accordance with paragraph (c)(1)(i)(B) of this section and paragraph (e)(2)(i)(A) of § 429.70.

Category	Equipment subcategory	Must test:	With:
Single-Package Unit	Single-Package AC (including Space-Constrained).	The individual model with the lowest SEER (when testing in accordance with appendix M to subpart B of part 430) or SEER2 (when testing in accordance with appendix M1 to subpart B of part 430).	N/A.
	Single-Package HP (including Space-Constrained).		
Outdoor Unit and Indoor Unit (Distributed in Commerce by OUM).	Single-Split-System AC with Single-Stage or Two-Stage Compressor (including Space-Constrained and Small-Duct, High Velocity Systems (SDHV)).	The model of outdoor unit	A model of coil-only indoor unit.
	Single-Split-System AC with Other Than Single-Stage or Two-Stage Compressor (including Space-Constrained and SDHV).	The model of outdoor unit	A model of indoor unit.
	Single-Split-System HP (including Space-Constrained and SDHV).		
	Multi-Split, Multi-Circuit, or Multi-Head Mini-Split Split System—non-SDHV (including Space-Constrained).	The model of outdoor unit	At a minimum, a ''tested combination'' composed entirely of non-ducted indoor units. For any models of outdoor units also sold with models of ducted indoor units, test a second ''tested combination'' composed entirely of ducted indoor units (in addition to the non-ducted combination). If testing under appendix M1 to subpart B of part 430, the ducted ''tested combination'' must comprise the highest static variety of ducted indoor unit distributed in commerce (*i.e.,* conventional, mid-static, or low-static).
	Multi-Split, Multi-Circuit, or Multi-Head Mini-Split Split System—SDHV.	The model of outdoor unit	A ''tested combination'' composed entirely of SDHV indoor units.
Indoor Unit Only (Distributed in Commerce by ICM).	Single-Split-System Air Conditioner (including Space-Constrained and SDHV).	A model of indoor unit	The least efficient model of outdoor unit with which it will be paired where the least efficient model of outdoor unit is the model of outdoor unit in the lowest SEER combination (when testing under appendix M to subpart B of part 430) or SEER2 combination (when testing under appendix M1 to subpart B of part 430) as certified by the OUM. If there are multiple models of outdoor unit with the same lowest SEER (when testing under appendix M to subpart B of part 430) or SEER2 (when testing under appendix M1 to subpart B of part 430) represented value, the ICM may select one for testing purposes.

Category	Equipment subcategory	Must test:	With:
	Single-Split-System Heat Pump (including Space-Constrained and SDHV).	Nothing, as long as an equivalent air conditioner basic model has been tested. If an equivalent air conditioner basic model has not been tested, must test a model of indoor unit.	
	Multi-Split, Multi-Circuit, or Multi-Head Mini-Split Split System—SDHV.	A model of indoor unit	A "tested combination" composed entirely of SDHV indoor units, where the outdoor unit is the least efficient model of outdoor unit with which the SDHV indoor unit will be paired. The least efficient model of outdoor unit is the model of outdoor unit in the lowest SEER combination (when testing under appendix M to subpart B of part 430) or SEER2 combination (when testing under appendix M1 to subpart B of part 430) as certified by the OUM. If there are multiple models of outdoor unit with the same lowest SEER represented value (when testing under appendix M to subpart B of part 430) or SEER2 represented value (when testing under appendix M1 to subpart B of part 430), the ICM may select one for testing purposes.
Outdoor Unit with No Match	.....	The model of outdoor unit	A model of coil-only indoor unit meeting the requirements of section 2.2e of appendix M or M1 to subpart B of part 430.

* * * * *

(3) *Sampling plans and represented values.* For individual models (for single-package systems) or individual combinations (for split-systems, including "tested combinations" for multi-split, multi-circuit, and multi-head mini-split systems) with represented values determined through testing, each individual model/combination (or "tested combination") must have a sample of sufficient size tested in accordance with the applicable provisions of this subpart. For heat pumps (other than heating-only heat pumps), all units of the sample population must be tested in both the cooling and heating modes and the results used for determining all representations. The represented values for any individual model/combination must be assigned such that:

* * * * *

(ii) *SEER, EER, HSPF, SEER2, EER2, and HSPF2.* Any represented value of the energy efficiency or other measure of energy consumption for which consumers would favor higher values shall be less than or equal to the lower of:

(*A*) The mean of the sample, where:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

and, $\bar{x}$ is the sample mean; n is the number of samples; and x_i is the ith sample; or,

(*B*) The lower 90 percent confidence limit (LCL) of the true mean divided by 0.95, where:

$$LCL = \bar{x} - t_{.90}\left(\frac{s}{\sqrt{n}}\right)$$

And $\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.90}$ is the t statistic for a 90 percent one-tailed confidence interval with n-1 degrees of freedom (from appendix D). Round represented values of EER, SEER, HSPF, EER2, SEER2, and HSPF2 to the nearest 0.05.

(iii) *Cooling Capacity and Heating Capacity.* The represented values of cooling capacity and heating capacity must each be a self-declared value that is:

(A) Less than or equal to the lower of:

(*1*) The mean of the sample, where:

$$\bar{x} = \frac{1}{n}\sum_{i=1}^{n} x_i$$

and, $\bar{x}$ is the sample mean; n is the number of samples; and x_i is the ith sample; or,

(*2*) The lower 90 percent confidence limit (LCL) of the true mean divided by 0.95, where:

$$LCL = \bar{x} - t_{.90}\left(\frac{s}{\sqrt{n}}\right)$$

And $\bar{x}$ is the sample mean; s is the sample standard deviation; n is the number of samples; and $t_{0.90}$ is the t statistic for a 90 percent one-tailed confidence interval with n-1 degrees of freedom (from appendix D).

(B) Rounded according to:

(*1*) To the nearest 100 Btu/h if cooling capacity or heating capacity is less than 20,000 Btu/h,

(*2*) To the nearest 200 Btu/h if cooling capacity or heating capacity is greater than or equal to 20,000 Btu/h but less than 38,000 Btu/h, and

(*3*) To the nearest 500 Btu/h if cooling capacity or heating capacity is greater than or equal to 38,000 Btu/h and less than 65,000 Btu/h.

(c) * * *

(1) * * *

(i) * * *

(B) The represented values of the measures of energy efficiency or energy consumption through the application of an AEDM in accordance with paragraph (d) of this section and § 429.70. An AEDM may only be used to determine represented values for individual models or combinations in a basic model (or separate approved refrigerants within an individual combination) other than the individual model or combination(s) required for mandatory testing under paragraph (b)(2) of this section, except that, for single-split, non-space-constrained systems, when testing is required in accordance with 10 CFR part 430, subpart B, appendix M1, an AEDM may be used to rate the individual model or combination(s) required for mandatory testing under paragraph (b)(2) of this section until July

1, 2024, in accordance with paragraph (e)(2)(i)(A) of § 429.70.

* * * * *

(2) *Outdoor units with no match.* All models of outdoor units with no match within a basic model must be tested. No model of outdoor unit with no match may be rated with an AEDM, other than to determine the represented values for models using approved refrigerants other than the one used in testing.

(3) *For multi-split systems, multi-circuit systems, and multi-head mini-split systems.* The following applies:

(i) When testing in accordance with 10 CFR part 430, subpart B, appendix M1, for basic models that include additional varieties of ducted indoor units (*i.e.,* conventional, low-static, or mid-static) other than the one for which representation is required in paragraph (a)(1) of this section, if a manufacturer chooses to make a representation, the manufacturer must conduct testing of a tested combination according to the requirements in paragraph (b)(3) of this section.

(ii) When testing in accordance with 10 CFR part 430, subpart B, appendix M, for basic models composed of both non-ducted and ducted combinations, the represented value for the mixed non-ducted/ducted combination is the mean of the represented values for the non-ducted and ducted combinations as determined in accordance with paragraph (b)(3) of this section. When testing in accordance with 10 CFR part 430, subpart B, appendix M1, for basic models that include mixed combinations of indoor units (any two kinds of non-ducted, low-static, mid-static, and conventional ducted indoor units), the represented value for the mixed combination is the mean of the represented values for the individual component combinations as determined in accordance with paragraph (b)(3) of this section.

(iii) When testing in accordance with 10 CFR part 430, subpart B, appendix M, for basic models composed of both SDHV and non-ducted or ducted combinations, the represented value for the mixed SDHV/non-ducted or SDHV/ducted combination is the mean of the represented values for the SDHV, non-ducted, or ducted combinations, as applicable, as determined in accordance with paragraph (b)(3) of this section. When testing in accordance with 10 CFR part 430, subpart B, appendix M1, for basic models including mixed combinations of SDHV and another kind of indoor unit (any of non-ducted, low-static, mid-static, and conventional ducted), the represented value for the mixed SDHV/other combination is the mean of the represented values for the SDHV and other tested combination as determined in accordance with paragraph (b)(3) of this section.

(iv) All other individual combinations of models of indoor units for the same model of outdoor unit for which the manufacturer chooses to make representations must be rated as separate basic models, and the provisions of paragraphs (b)(1) through (3) and (c)(3)(i) through (iii) of this section apply.

(v) With respect to $P_{W,OFF}$ only, for every individual combination (or ''tested combination'') within a basic model tested pursuant to paragraph (b)(2) of this section, but for which $P_{W,OFF}$ testing was not conducted, the representative values of $P_{W,OFF}$ may be assigned through either:

(A) The testing result from an individual model or combination of similar off-mode construction, or

(B) Application of an AEDM in accordance with paragraph (d) of this section and § 429.70.

(d) * * *

(2) *Energy efficiency.* Any represented value of the SEER, EER, HSPF, SEER2, EER2, HSPF2 or other measure of energy efficiency of an individual model/combination for which consumers would favor higher values must be less than or equal to the output of the AEDM but no less than the standard.

(3) *Cooling capacity.* The represented value of cooling capacity of an individual model/combination must be no greater than the cooling capacity output simulated by the AEDM.

(4) *Heating capacity.* The represented value of heating capacity of an individual model/combination must be no greater than the heating capacity output simulated by the AEDM.

(e) * * *

(2) *Public product-specific information.* Pursuant to § 429.12(b)(13), for each individual model (for single-package systems) or individual combination (for split-systems, including outdoor units with no match and ''tested combinations'' for multi-split, multi-circuit, and multi-head mini-split systems), a certification report must include the following public product-specific information: When certifying compliance with January 1, 2015, energy conservation standards, the seasonal energy efficiency ratio (SEER in British thermal units per Watt-hour (Btu/W-h)) or when certifying compliance with January 1, 2023, energy conservation standards, seasonal energy efficiency ratio 2 (SEER2 in British thermal units per Watt-hour (Btu/W-h)); the average off mode power consumption ($P_{W,OFF}$ in Watts); the cooling capacity in British thermal units per hour (Btu/h); the region(s) in which the basic model can be sold; when certifying compliance with January 1, 2023, energy conservation standards, the kind(s) of air conditioner or heat pump associated with the minimum external static pressure used in testing or rating (ceiling-mount, wall-mount, mobile home, low-static, mid-static, small duct high velocity, space-constrained, or conventional/not otherwise listed); and

(i) For heat pumps, when certifying compliance with January 1, 2015, energy conservation standards, the heating seasonal performance factor (HSPF in British thermal units per Watt-hour (Btu/W-h)) or, when certifying compliance with January 1, 2023, energy conservation standards, heating seasonal performance factor 2 (HSPF2 in British thermal units per Watt-hour (Btu/W-h));

(ii) For central air conditioners (excluding space-constrained products), when certifying compliance with January 1, 2015, energy conservation standards, the energy efficiency ratio (EER in British thermal units per Watt-hour (Btu/W-h)) from the A or A_2 test, whichever applies, or when certifying compliance with January 1, 2023, energy conservation standards, the energy efficiency ratio 2 (EER2 in Btu/W-h);

(iii) For single-split-systems, whether the represented value is for a coil-only or blower coil system;

(iv) For multi-split, multiple-circuit, and multi-head mini-split systems (including VRF and SDHV), when certifying compliance with January 1, 2015, energy conservation standards, whether the represented value is for a non-ducted, ducted, mixed non-ducted/ducted system, SDHV, mixed non-ducted/SDHV system, or mixed ducted/SDHV system;

(v) For all split systems including outdoor units with no match, the refrigerant.

(3) *Basic and individual model numbers.* The basic model number and individual model number(s) required to be reported under § 429.12(b)(6) must consist of the following:

Equipment type	Basic model number	Individual model number(s)		
		1	2	3
Single-Package (including Space-Constrained).	Number unique to the basic model.	Package	N/A	N/A.
Single-Split System (including Space-Constrained and SDHV).	Number unique to the basic model.	Outdoor Unit	Indoor Unit	If applicable—Air Mover (could be same as indoor unit if fan is part of indoor unit model number).
Multi-Split, Multi-Circuit, and Multi-Head Mini-Split System (including Space-Constrained and SDHV).	Number unique to the basic model.	Outdoor Unit	When certifying a basic model based on tested combination(s): * * *. When certifying an individual combination: Indoor Unit(s).	If applicable—When certifying a basic model based on tested combination(s): * * *. When certifying an individual combination: Air Mover(s).
Outdoor Unit with No Match.	Number unique to the basic model.	Outdoor Unit	N/A	N/A.

(4) *Additional product-specific information.* Pursuant to § 429.12(b)(13), for each individual model/combination (including outdoor units with no match and ''tested combinations''), a certification report must include the following additional product-specific information: The cooling full load air volume rate for the system or for each indoor unit as applicable (in cubic feet per minute of standard air (scfm)); the air volume rates that represent normal operation for other test conditions including minimum cooling air volume rate, intermediate cooling air volume rate, full load heating air volume rate, minimum heating air volume rate, intermediate heating air volume rate, and nominal heating air volume rate (scfm) for the system or for each indoor unit as applicable, if different from the cooling full load air volume rate; whether the individual model uses a fixed orifice, thermostatic expansion valve, electronic expansion valve, or other type of metering device; the duration of the compressor break-in period, if used; whether the optional tests were conducted to determine the $C_D{}^c$ value used to represent cooling mode cycling losses or whether the default value was used; the temperature at which the crankcase heater with controls is designed to turn on, if applicable; whether an inlet plenum was installed during testing; the duration of the indoor fan time delay, if used; and

(i) For heat pumps, whether the optional tests were conducted to determine the $C_D{}^h$ value or whether the default value was used; and the maximum time between defrosts as allowed by the controls (in hours);

(ii) For multi-split, multiple-circuit, and multi-head mini-split systems, the number of indoor units tested with the outdoor unit; the nominal cooling capacity of each indoor unit and outdoor unit in the combination; and the indoor units that are not providing heating or cooling for part-load tests;

(iii) For ducted systems having multiple indoor fans within a single indoor unit, the number of indoor fans; the nominal cooling capacity of the indoor unit and outdoor unit; which fan(s) operate to attain the full-load air volume rate when controls limit the simultaneous operation of all fans within the single indoor unit; and the allocation of the full-load air volume rate to each operational fan when different capacity blowers are connected to the common duct;

(iv) For blower coil systems, the airflow-control settings associated with full load cooling operation; and the airflow-control settings or alternative instructions for setting fan speed to the speed upon which the rating is based;

(v) For models with time-adaptive defrost control, the frosting interval to be used during Frost Accumulation tests and the procedure for manually initiating the defrost at the specified time;

(vi) For models of indoor units designed for both horizontal and vertical installation or for both up-flow and down-flow vertical installations, the orientation used for testing;

(vii) For variable-speed models, the compressor frequency set points, and the required dip switch/control settings for step or variable components;

(viii) For variable-speed heat pumps, whether the $H1_N$ or $H1_2$ test speed is the same as the $H3_2$ test speed; the compressor frequency that corresponds to maximum speed at which the system controls would operate the compressor in normal operation in a 17 °F ambient temperature; and when certifying compliance with January 1, 2023, energy conservation standards, whether the optional 5 °F very low temperature heating mode test was used to characterize performance at temperatures below 17 °F (except for triple-capacity northern heat pumps, for which the very low temperature test is required,) and whether the alternative test required for minimum-speed-limiting variable-speed heat pumps was used;

(ix) For models of outdoor units with no match, the following characteristics of the indoor coil: The face area, the coil depth in the direction of airflow, the fin density (fins per inch), the fin material, the fin style, the tube diameter, the tube material, and the numbers of tubes high and deep; and

(x) For central air conditioners and heat pumps that have two-capacity compressors that lock out low capacity operation for cooling at higher outdoor temperatures and/or heating at lower outdoor temperatures, the outdoor temperature(s) at which the unit locks out low capacity operation.

(f) *Represented values for the Federal Trade Commission.* Use the following represented value determinations to meet the requirements of the Federal Trade Commission.

(1) *Annual Operating Cost—Cooling.* Determine the represented value of estimated annual operating cost for cooling-only units or the cooling portion of the estimated annual operating cost for air-source heat pumps that provide both heating and cooling by calculating the product of:

(i) The value determined in paragraph (f)(1)(i)(A) of this section if using appendix M to subpart B of part 430 or the value determined in paragraph (f)(1)(i)(B) of this section if using appendix M1 to subpart B of part 430;

(A) the quotient of the represented value of cooling capacity, in Btu's per hour as determined in paragraph

(b)(3)(iii) of this section, divided by the represented value of SEER, in Btu's per watt-hour, as determined in paragraph (b)(3)(ii) of this section;

(B) the quotient of the represented value of cooling capacity, in Btu's per hour as determined in paragraph (b)(3)(i)(C) of this section, and multiplied by 0.93 for variable-speed heat pumps only, divided by the represented value of SEER2, in Btu's per watt-hour, as determined in paragraph (b)(3)(i)(B) of this section.

(ii) The representative average use cycle for cooling of 1,000 hours per year;

(iii) A conversion factor of 0.001 kilowatt per watt; and

(iv) The representative average unit cost of electricity in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act.

(2) *Annual Operating Cost—Heating.* Determine the represented value of estimated annual operating cost for air-source heat pumps that provide only heating or for the heating portion of the estimated annual operating cost for air-source heat pumps that provide both heating and cooling, as follows:

(i) When using appendix M to subpart B of part 430, the product of:

(A) The quotient of the mean of the standardized design heating requirement for the sample, in Btu's per hour, nearest to the Region IV minimum design heating requirement, determined for each unit in the sample in section 4.2 of appendix M to subpart B of part 430, divided by the represented value of heating seasonal performance factor (HSPF), in Btu's per watt-hour, calculated for Region IV corresponding to the above-mentioned standardized design heating requirement, as determined in paragraph (b)(3)(ii) of this section;

(B) The representative average use cycle for heating of 2,080 hours per year;

(C) The adjustment factor of 0.77, which serves to adjust the calculated design heating requirement and heating load hours to the actual load experienced by a heating system;

(D) A conversion factor of 0.001 kilowatt per watt; and

(E) The representative average unit cost of electricity in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act;

(ii) When using appendix M1 to subpart B of part 430, the product of:

(A) The quotient of the represented value of cooling capacity (for air-source heat pumps that provide both cooling and heating) in Btu's per hour, as determined in paragraph (b)(3)(i)(C) of this section, or the represented value of heating capacity (for air-source heat pumps that provide only heating), as determined in paragraph (b)(3)(i)(D) of this section, divided by the represented value of heating seasonal performance factor 2 (HSPF2), in Btu's per watt-hour, calculated for Region IV, as determined in paragraph (b)(3)(i)(B) of this section;

(B) The representative average use cycle for heating of 1,572 hours per year;

(C) The adjustment factor of 1.15 (for heat pumps that are not variable-speed) or 1.07 (for heat pumps that are variable-speed), which serves to adjust the calculated design heating requirement and heating load hours to the actual load experienced by a heating system;

(D) A conversion factor of 0.001 kilowatt per watt; and

(E) The representative average unit cost of electricity in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act;

* * * * *

(4) *Regional Annual Operating Cost—Cooling.* Determine the represented value of estimated regional annual operating cost for cooling-only units or the cooling portion of the estimated regional annual operating cost for air-source heat pumps that provide both heating and cooling by calculating the product of:

(i) The value determined in paragraph (f)(4)(i)(A) of this section if using appendix M to subpart B of part 430 or the value determined in paragraph (f)(4)(i)(B) of this section if using appendix M1 to subpart B of part 430;

(A) the quotient of the represented value of cooling capacity, in Btu's per hour as determined in paragraph (b)(3)(iii) of this section, divided by the represented value of SEER, in Btu's per watt-hour, as determined in paragraph (b)(3)(ii) of this section;

(B) the quotient of the represented value of cooling capacity, in Btu's per hour as determined in paragraph (b)(3)(i)(C) of this section, and multiplied by 0.93 for variable-speed heat pumps only, divided by the represented value of SEER2, in Btu's per watt-hour, as determined in paragraph (b)(3)(i)(B) of this section;

(ii) The value determined in paragraph (f)(4)(ii)(A) of this section if using appendix M to subpart B of part 430 or the value determined in paragraph (f)(4)(ii)(B) of this section if using appendix M1 to subpart B of part 430;

(A) the estimated number of regional cooling load hours per year determined from Table 22 in section 4.4 of appendix M to subpart B of part 430;

(B) the estimated number of regional cooling load hours per year determined from Table 21 in section 4.4 of appendix M1 to subpart B of part 430;

(iii) A conversion factor of 0.001 kilowatts per watt; and

(iv) The representative average unit cost of electricity in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act.

(5) *Regional Annual Operating Cost—Heating.* Determine the represented value of estimated regional annual operating cost for air-source heat pumps that provide only heating or for the heating portion of the estimated regional annual operating cost for air-source heat pumps that provide both heating and cooling as follows:

(i) When using appendix M to subpart B of part 430, the product of:

(A) The estimated number of regional heating load hours per year determined from Table 22 in section 4.4 of appendix M to subpart B of part 430;

(B) The quotient of the mean of the standardized design heating requirement for the sample, in Btu's per hour, for the appropriate generalized climatic region of interest (*i.e.,* corresponding to the regional heating load hours from ''A'') and determined for each unit in the sample in section 4.2 of appendix M to subpart B of part 430, divided by the represented value of HSPF, in Btu's per watt-hour, calculated for the appropriate generalized climatic region of interest and corresponding to the above-mentioned standardized design heating requirement, and determined in paragraph (b)(3)(ii);

(C) The adjustment factor of 0.77; which serves to adjust the calculated design heating requirement and heating load hours to the actual load experienced by a heating system;

(D) A conversion factor of 0.001 kilowatts per watt; and

(E) The representative average unit cost of electricity in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act.

(ii) When using appendix M1 to subpart B of part 430, the product of:

(A) The estimated number of regional heating load hours per year determined from Table 21 in section 4.4 of appendix M1 to subpart B of part 430;

(B) The quotient of the represented value of cooling capacity (for air-source heat pumps that provide both cooling and heating) in Btu's per hour, as determined in paragraph (b)(3)(i)(C) of this section, or the represented value of heating capacity (for air-source heat pumps that provide only heating), as determined in paragraph (b)(3)(i)(D) of this section, divided by the represented value of HSPF2, in Btu's per watt-hour,

calculated for the appropriate generalized climatic region of interest, and determined in paragraph (b)(3)(i)(B) of this section;

(C) The adjustment factor of 1.15 (for heat pumps that are not variable-speed) or 1.07 (for heat pumps that are variable-speed), which serves to adjust the calculated design heating requirement and heating load hours to the actual load experienced by a heating system;

(D) A conversion factor of 0.001 kilowatts per watt; and

(E) The representative average unit cost of electricity in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act.

* * * * *

■ 4. Section 429.70 is amended by revising paragraphs (e)(1), (e)(2)(i), and (e)(5)(iv) to read as follows:

§ 429.70 Alternative methods for determining energy efficiency or energy use.

* * * * *

(e) * * *

(1) *Criteria an AEDM must satisfy.* A manufacturer may not apply an AEDM to an individual model/combination to determine its represented values (SEER, EER, HSPF, SEER2, EER2, HSPF2, and/or $P_{W,OFF}$) pursuant to this section unless authorized pursuant to § 429.16(d) and:

(i) The AEDM is derived from a mathematical model that estimates the energy efficiency or energy consumption characteristics of the individual model or combination (SEER, EER, HSPF, SEER2, EER2, HSPF2, and/or $P_{W,OFF}$) as measured by the applicable DOE test procedure; and

(ii) The manufacturer has validated the AEDM in accordance with paragraph (e)(2) of this section.

(2) * * *

(i) Follow paragraph (e)(2)(i)(A) of this section for requirements on minimum testing. Follow paragraph (e)(2)(i)(B) of this section for requirements on ensuring the accuracy and reliability of the AEDM.

(A) *Minimum testing.* (*1*) For non-space-constrained single-split system air conditioners and heat pumps rated based on testing in accordance with appendix M to subpart B of part 430, the manufacturer must test each basic model as required under § 429.16(b)(2). Until July 1, 2024, for non-space-constrained single-split-system air conditioners and heat pumps rated based on testing in accordance with appendix M1 to subpart B of part 430, the manufacturer must test a single-unit sample from 20 percent of the basic models distributed in commerce to validate the AEDM. On or after July 1, 2024, for non-space-constrained single-split-system air conditioners and heat pumps rated based on testing in accordance with appendix M1 to subpart B of part 430, the manufacturer must complete testing of each basic model as required under § 429.16(b)(2).

(*2*) For other than non-space-constrained single-split-system air conditioners and heat pumps, the manufacturer must test each basic model as required under § 429.16(b)(2).

(B) Using the AEDM, calculate the energy use or efficiency for each of the tested individual models/combinations within each basic model. Compare the represented value based on testing and the AEDM energy use or efficiency output according to paragraph (e)(2)(ii) of this section. The manufacturer is responsible for ensuring the accuracy and reliability of the AEDM and that their representations are appropriate and the models being distributed in commerce meet the applicable standards, regardless of the amount of testing required in paragraphs (e)(2)(i)(A) and (e)(2)(i)(B) of this section.

* * * * *

(5) * * *

(iv) *Failure to meet certified value.* If an individual model/combination tests worse than its certified value (*i.e.,* lower than the certified efficiency value or higher than the certified consumption value) by more than 5 percent, or the test results in cooling capacity that is lower than its certified cooling capacity, DOE will notify the manufacturer. DOE will provide the manufacturer with all documentation related to the test set up, test conditions, and test results for the unit. Within the timeframe allotted by DOE, the manufacturer may present any and all claims regarding testing validity.

* * * * *

PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

■ 5. The authority citation for part 430 continues to read as follows:

Authority: 42 U.S.C. 6291–6309; 28 U.S.C. 2461 note.

■ 6. Section 430.2 is amended by revising the definition of ''central air conditioner or central air conditioning heat pump'' to read as follows:

§ 430.2 Definitions.

* * * * *

Central air conditioner or central air conditioning heat pump means a product, other than a packaged terminal air conditioner or packaged terminal heat pump, which is powered by single phase electric current, air cooled, rated below 65,000 Btu per hour, not contained within the same cabinet as a furnace, the rated capacity of which is above 225,000 Btu per hour, and is a heat pump or a cooling unit only. A central air conditioner or central air conditioning heat pump may consist of: A single-package unit; an outdoor unit and one or more indoor units; an indoor unit only; or an outdoor unit with no match. In the case of an indoor unit only or an outdoor unit with no match, the unit *must* be tested and rated as a system (combination of both an indoor and an outdoor unit). For all central air conditioner and central air conditioning heat pump-related definitions, see appendix M or M1 of subpart B of this part.

* * * * *

§ 430.3 [Amended]

■ 7. Section 430.3 is amended by removing in paragraphs (b)(2) introductory text, (c)(1) introductory text, (c)(3) introductory text, (g)(2) introductory text, (g)(4) introductory text, (g)(7) introductory text, (g)(8) introductory text, (g)(9) introductory text, (g)(10) introductory text, and (g)(13) ''appendix M'' and adding in its place ''appendices M and M1''.

■ 8. Section 430.23 is amended by revising paragraph (m) to read as follows:

§ 430.23 Test procedures for the measurement of energy and water consumption.

* * * * *

(m) *Central air conditioners and heat pumps.* See the note at the beginning of appendix M and M1 to determine the appropriate test method. Determine all values discussed in this section using a single appendix.

(1) Determine cooling capacity from the steady-state wet-coil test (A or A_2 Test), as described in section 3.2 of appendix M or M1 to this subpart, and rounded off to the nearest

(i) To the nearest 50 Btu/h if cooling capacity is less than 20,000 Btu/h;

(ii) To the nearest 100 Btu/h if cooling capacity is greater than or equal to 20,000 Btu/h but less than 38,000 Btu/h; and

(iii) To the nearest 250 Btu/h if cooling capacity is greater than or equal to 38,000 Btu/h and less than 65,000 Btu/h.

(2) Determine seasonal energy efficiency ratio (SEER) as described in section 4.1 of appendix M to this subpart or seasonal energy efficiency ratio 2 (SEER2) as described in section

4.1 of appendix M1 to this subpart, and round off to the nearest 0.025 Btu/W-h.

(3) Determine energy efficiency ratio (EER) as described in section 4.6 of appendix M or M1 to this subpart, and round off to the nearest 0.025 Btu/W-h. The EER from the A or A_2 test, whichever applies, when tested in accordance with appendix M1 to this subpart, is referred to as EER2.

(4) Determine heating seasonal performance factors (HSPF) as described in section 4.2 of appendix M to this subpart or heating seasonal performance factors 2 (HSPF2) as described in section 4.2 of appendix M1 to this subpart, and round off to the nearest 0.025 Btu/W-h.

(5) Determine average off mode power consumption as described in section 4.3 of appendix M or M1 to this subpart, and round off to the nearest 0.5 W.

(6) Determine all other measures of energy efficiency or consumption or other useful measures of performance using appendix M or M1 of this subpart.

* * * * *

■ 9. Appendix M to subpart B of part 430 is revised to read as follows:

Appendix M to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps

Note: Prior to July 5, 2017, any representations, including compliance certifications, made with respect to the energy use, power, or efficiency of central air conditioners and central air conditioning heat pumps must be based on the results of testing pursuant to either this appendix or the procedures in Appendix M as it appeared at 10 CFR part 430, subpart B, Appendix M, in the 10 CFR parts 200 to 499 edition revised as of January 1, 2017. Any representations made with respect to the energy use or efficiency of such central air conditioners and central air conditioning heat pumps must be in accordance with whichever version is selected.

On or after July 5, 2017 and prior to January 1, 2023, any representations, including compliance certifications, made with respect to the energy use, power, or efficiency of central air conditioners and central air conditioning heat pumps must be based on the results of testing pursuant to this appendix.

On or after January 1, 2023, any representations, including compliance certifications, made with respect to the energy use, power, or efficiency of central air conditioners and central air conditioning heat pumps must be based on the results of testing pursuant to appendix M1 of this subpart.

1. Scope and Definitions

1.1 Scope

This test procedure provides a method of determining SEER, EER, HSPF and $P_{W,OFF}$ for central air conditioners and central air conditioning heat pumps including the following categories:

(a) Split-system air conditioners, including single-split, multi-head mini-split, multi-split (including VRF), and multi-circuit systems
(b) Split-system heat pumps, including single-split, multi-head mini-split, multi-split (including VRF), and multi-circuit systems
(c) Single-package air conditioners
(d) Single-package heat pumps
(e) Small-duct, high-velocity systems (including VRF)
(f) Space-constrained products—air conditioners
(g) Space-constrained products—heat pumps

For purposes of this appendix, the Department of Energy incorporates by reference specific sections of several industry standards, as listed in § 430.3. In cases where there is a conflict, the language of the test procedure in this appendix takes precedence over the incorporated standards.

All section references refer to sections within this appendix unless otherwise stated.

1.2 Definitions

Airflow-control settings are programmed or wired control system configurations that control a fan to achieve discrete, differing ranges of airflow—often designated for performing a specific function (*e.g.,* cooling, heating, or constant circulation)—without manual adjustment other than interaction with a user-operable control (*i.e.,* a thermostat) that meets the manufacturer specifications for installed-use. For the purposes of this appendix, manufacturer specifications for installed-use are those found in the product literature shipped with the unit.

Air sampling device is an assembly consisting of a manifold with several branch tubes with multiple sampling holes that draws an air sample from a critical location from the unit under test (*e.g.* indoor air inlet, indoor air outlet, outdoor air inlet, etc.).

Airflow prevention device denotes a device that prevents airflow via natural convection by mechanical means, such as an air damper box, or by means of changes in duct height, such as an upturned duct.

Aspirating psychrometer is a piece of equipment with a monitored airflow section that draws uniform airflow through the measurement section and has probes for measurement of air temperature and humidity.

Blower coil indoor unit means an indoor unit either with an indoor blower housed with the coil or with a separate designated air mover such as a furnace or a modular blower (as defined in appendix AA to the subpart).

Blower coil system refers to a split system that includes one or more blower coil indoor units.

Cased coil means a coil-only indoor unit with external cabinetry.

Coefficient of Performance (COP) means the ratio of the average rate of space heating delivered to the average rate of electrical energy consumed by the heat pump. These rate quantities must be determined from a single test or, if derived via interpolation, must be determined at a single set of operating conditions. COP is a dimensionless quantity. When determined for a ducted coil-only system, COP must include the sections 3.7 and 3.9.1 of this appendix: Default values for the heat output and power input of a fan motor.

Coil-only indoor unit means an indoor unit that is distributed in commerce without an indoor blower or separate designated air mover. A coil-only indoor unit installed in the field relies on a separately-installed furnace or a modular blower for indoor air movement. *Coil-only system* refers to a system that includes only (one or more) coil-only indoor units.

Condensing unit removes the heat absorbed by the refrigerant to transfer it to the outside environment and consists of an outdoor coil, compressor(s), and air moving device.

Constant-air-volume-rate indoor blower means a fan that varies its operating speed to provide a fixed air-volume-rate from a ducted system.

Continuously recorded, when referring to a dry bulb measurement, dry bulb temperature used for test room control, wet bulb temperature, dew point temperature, or relative humidity measurements, means that the specified value must be sampled at regular intervals that are equal to or less than 15 seconds.

Cooling load factor (CLF) means the ratio having as its numerator the total cooling delivered during a cyclic operating interval consisting of one ON period and one OFF period, and as its denominator the total cooling that would be delivered, given the same ambient conditions, had the unit operated continuously at its steady-state, space-cooling capacity for the same total time (ON + OFF) interval.

Crankcase heater means any electrically powered device or mechanism for intentionally generating heat within and/or around the compressor sump volume. Crankcase heater control may be achieved using a timer or may be based on a change in temperature or some other measurable parameter, such that the crankcase heater is not required to operate continuously. A crankcase heater without controls operates continuously when the compressor is not operating.

Cyclic Test means a test where the unit's compressor is cycled on and off for specific time intervals. A cyclic test provides half the information needed to calculate a degradation coefficient.

Damper box means a short section of duct having an air damper that meets the performance requirements of section 2.5.7 of this appendix.

Degradation coefficient (C_D) means a parameter used in calculating the part load factor. The degradation coefficient for cooling is denoted by C_D^c. The degradation coefficient for heating is denoted by C_D^h.

Demand-defrost control system means a system that defrosts the heat pump outdoor coil-only when measuring a predetermined degradation of performance. The heat pump's controls either:

(1) Monitor one or more parameters that always vary with the amount of frost

accumulated on the outdoor coil (*e.g.,* coil to air differential temperature, coil differential air pressure, outdoor fan power or current, optical sensors) at least once for every ten minutes of compressor ON-time when space heating or

(2) operate as a feedback system that measures the length of the defrost period and adjusts defrost frequency accordingly. In all cases, when the frost parameter(s) reaches a predetermined value, the system initiates a defrost. In a demand-defrost control system, defrosts are terminated based on monitoring a parameter(s) that indicates that frost has been eliminated from the coil. (**Note:** Systems that vary defrost intervals according to outdoor dry-bulb temperature are not demand-defrost systems.) A demand-defrost control system, which otherwise meets the above requirements, may allow time-initiated defrosts if, and only if, such defrosts occur after 6 hours of compressor operating time.

Design heating requirement (DHR) predicts the space heating load of a residence when subjected to outdoor design conditions. Estimates for the minimum and maximum DHR are provided for six generalized U.S. climatic regions in section 4.2 of this appendix.

Dry-coil tests are cooling mode tests where the wet-bulb temperature of the air supplied to the indoor unit is maintained low enough that no condensate forms on the evaporator coil.

Ducted system means an air conditioner or heat pump that is designed to be permanently installed equipment and delivers conditioned air to the indoor space through a duct(s). The air conditioner or heat pump may be either a split-system or a single-package unit.

Energy efficiency ratio (EER) means the ratio of the average rate of space cooling delivered to the average rate of electrical energy consumed by the air conditioner or heat pump. Determine these rate quantities from a single test or, if derived via interpolation, determine at a single set of operating conditions. EER is expressed in units of

$$\frac{Btu/h}{W}.$$

When determined for a ducted coil-only system, EER must include, from this appendix, the section 3.3 and 3.5.1 default values for the heat output and power input of a fan motor.

Evaporator coil means an assembly that absorbs heat from an enclosed space and transfers the heat to a refrigerant.

Heat pump means a kind of central air conditioner that utilizes an indoor conditioning coil, compressor, and refrigerant-to-outdoor air heat exchanger to provide air heating, and may also provide air cooling, air dehumidifying, air humidifying, air circulating, and air cleaning.

Heat pump having a heat comfort controller means a heat pump with controls that can regulate the operation of the electric resistance elements to assure that the air temperature leaving the indoor section does not fall below a specified temperature. Heat pumps that actively regulate the rate of electric resistance heating when operating below the balance point (as the result of a second stage call from the thermostat) but do not operate to maintain a minimum delivery temperature are not considered as having a heat comfort controller.

Heating load factor (HLF) means the ratio having as its numerator the total heating delivered during a cyclic operating interval consisting of one ON period and one OFF period, and its denominator the heating capacity measured at the same test conditions used for the cyclic test, multiplied by the total time interval (ON plus OFF) of the cyclic-test.

Heating season means the months of the year that require heating, *e.g.,* typically, and roughly, October through April.

Heating seasonal performance factor (HSPF) means the total space heating required during the heating season, expressed in Btu, divided by the total electrical energy consumed by the heat pump system during the same season, expressed in watt-hours. The HSPF used to evaluate compliance with 10 CFR 430.32(c) is based on Region IV and the sampling plan stated in 10 CFR 429.16(a). HSPF is determined in accordance with appendix M.

Independent coil manufacturer (ICM) means a manufacturer that manufactures indoor units but does not manufacture single-package units or outdoor units.

Indoor unit means a separate assembly of a split system that includes—

(1) An arrangement of refrigerant-to-air heat transfer coil(s) for transfer of heat between the refrigerant and the indoor air,

(2) A condensate drain pan, and may or may not include

(3) Sheet metal or plastic parts not part of external cabinetry to direct/route airflow over the coil(s),

(4) A cooling mode expansion device,

(5) External cabinetry, and

(6) An integrated indoor blower (*i.e.* a device to move air including its associated motor). A separate designated air mover that may be a furnace or a modular blower (as defined in appendix AA to the subpart) may be considered to be part of the indoor unit. A service coil is not an indoor unit.

Multi-head mini-split system means a split system that has one outdoor unit and that has two or more indoor units connected with a single refrigeration circuit. The indoor units operate in unison in response to a single indoor thermostat.

Multiple-circuit (or multi-circuit) system means a split system that has one outdoor unit and that has two or more indoor units installed on two or more refrigeration circuits such that each refrigeration circuit serves a compressor and one and only one indoor unit, and refrigerant is not shared from circuit to circuit.

Multiple-split (or multi-split) system means a split system that has one outdoor unit and two or more coil-only indoor units and/or blower coil indoor units connected with a single refrigerant circuit. The indoor units operate independently and can condition multiple zones in response to at least two indoor thermostats or temperature sensors. The outdoor unit operates in response to independent operation of the indoor units based on control input of multiple indoor thermostats or temperature sensors, and/or based on refrigeration circuit sensor input (*e.g.,* suction pressure).

Nominal capacity means the capacity that is claimed by the manufacturer on the product name plate. Nominal cooling capacity is approximate to the air conditioner cooling capacity tested at A or A2 condition. Nominal heating capacity is approximate to the heat pump heating capacity tested in H12 test (or the optional H1N test).

Non-ducted indoor unit means an indoor unit that is designed to be permanently installed, mounted on room walls and/or ceilings, and that directly heats or cools air within the conditioned space.

Normalized Gross Indoor Fin Surface (NGIFS) means the gross fin surface area of the indoor unit coil divided by the cooling capacity measured for the A or A2 Test, whichever applies.

Off-mode power consumption means the power consumption when the unit is connected to its main power source but is neither providing cooling nor heating to the building it serves.

Off-mode season means, for central air conditioners other than heat pumps, the shoulder season and the entire heating season; and for heat pumps, the shoulder season only.

Outdoor unit means a separate assembly of a split system that transfers heat between the refrigerant and the outdoor air, and consists of an outdoor coil, compressor(s), an air moving device, and in addition for heat pumps, may include a heating mode expansion device, reversing valve, and/or defrost controls.

Outdoor unit manufacturer (OUM) means a manufacturer of single-package units, outdoor units, and/or both indoor units and outdoor units.

Part-load factor (PLF) means the ratio of the cyclic EER (or COP for heating) to the steady-state EER (or COP), where both EERs (or COPs) are determined based on operation at the same ambient conditions.

Seasonal energy efficiency ratio (SEER) means the total heat removed from the conditioned space during the annual cooling season, expressed in Btu's, divided by the total electrical energy consumed by the central air conditioner or heat pump during the same season, expressed in watt-hours. SEER is determined in accordance with appendix M.

Service coil means an arrangement of refrigerant-to-air heat transfer coil(s), condensate drain pan, sheet metal or plastic parts to direct/route airflow over the coil(s), which may or may not include external cabinetry and/or a cooling mode expansion device, distributed in commerce solely for replacing an uncased coil or cased coil that has already been placed into service, and that has been labeled ''for indoor coil replacement only'' on the nameplate and in manufacturer technical and product literature. The model number for any service coil must include some mechanism (*e.g.,* an additional letter or number) for differentiating a service coil from a coil intended for an indoor unit.

Shoulder season means the months of the year in between those months that require cooling and those months that require

heating, *e.g.,* typically, and roughly, April through May, and September through October.

Single-package unit means any central air conditioner or heat pump that has all major assemblies enclosed in one cabinet.

Single-split system means a split system that has one outdoor unit and one indoor unit connected with a single refrigeration circuit. *Small-duct, high-velocity system* means a split system for which all indoor units are blower coil indoor units that produce at least 1.2 inches (of water column) of external static pressure when operated at the full-load air volume rate certified by the manufacturer of at least 220 scfm per rated ton of cooling.

Split system means any air conditioner or heat pump that has at least two separate assemblies that are connected with refrigerant piping when installed. One of these assemblies includes an indoor coil that exchanges heat with the indoor air to provide heating or cooling, while one of the others includes an outdoor coil that exchanges heat with the outdoor air. Split systems may be either blower coil systems or coil-only systems.

Standard Air means dry air having a mass density of 0.075 lb/ft^3.

Steady-state test means a test where the test conditions are regulated to remain as constant as possible while the unit operates continuously in the same mode.

Temperature bin means the 5 °F increments that are used to partition the outdoor dry-bulb temperature ranges of the cooling (≥65 °F) and heating (<65 °F) seasons.

Test condition tolerance means the maximum permissible difference between the average value of the measured test parameter and the specified test condition.

Test operating tolerance means the maximum permissible range that a measurement may vary over the specified test interval. The difference between the maximum and minimum sampled values must be less than or equal to the specified test operating tolerance.

Tested combination means a multi-head mini-split, multi-split, or multi-circuit system having the following features:

(1) The system consists of one outdoor unit with one or more compressors matched with between two and five indoor units;

(2) The indoor units must:

(i) Collectively, have a nominal cooling capacity greater than or equal to 95 percent and less than or equal to 105 percent of the nominal cooling capacity of the outdoor unit;

(ii) Each represent the highest sales volume model family, if this is possible while meeting all the requirements of this section. If this is not possible, one or more of the indoor units may represent another indoor model family in order that all the other requirements of this section are met.

(iii) Individually not have a nominal cooling capacity greater than 50 percent of the nominal cooling capacity of the outdoor unit, unless the nominal cooling capacity of the outdoor unit is 24,000 Btu/h or less;

(iv) Operate at fan speeds consistent with manufacturer's specifications; and

(v) All be subject to the same minimum external static pressure requirement while able to produce the same external static pressure at the exit of each outlet plenum when connected in a manifold configuration as required by the test procedure.

(3) Where referenced, ''nominal cooling capacity'' means, for indoor units, the highest cooling capacity listed in published product literature for 95 °F outdoor dry bulb temperature and 80 °F dry bulb, 67 °F wet bulb indoor conditions, and for outdoor units, the lowest cooling capacity listed in published product literature for these conditions. If incomplete or no operating conditions are published, the highest (for indoor units) or lowest (for outdoor units) such cooling capacity available for sale must be used.

Time-adaptive defrost control system is a demand-defrost control system that measures the length of the prior defrost period(s) and uses that information to automatically determine when to initiate the next defrost cycle.

Time-temperature defrost control systems initiate or evaluate initiating a defrost cycle only when a predetermined cumulative compressor ON-time is obtained. This predetermined ON-time is generally a fixed value (*e.g.,* 30, 45, 90 minutes) although it may vary based on the measured outdoor dry-bulb temperature. The ON-time counter accumulates if controller measurements (*e.g.,* outdoor temperature, evaporator temperature) indicate that frost formation conditions are present, and it is reset/remains at zero at all other times. In one application of the control scheme, a defrost is initiated whenever the counter time equals the predetermined ON-time. The counter is reset when the defrost cycle is completed.

In a second application of the control scheme, one or more parameters are measured (*e.g.,* air and/or refrigerant temperatures) at the predetermined, cumulative, compressor ON-time. A defrost is initiated only if the measured parameter(s) falls within a predetermined range. The ON-time counter is reset regardless of whether or not a defrost is initiated. If systems of this second type use cumulative ON-time intervals of 10 minutes or less, then the heat pump may qualify as having a demand defrost control system (see definition).

Triple-capacity, northern heat pump means a heat pump that provides two stages of cooling and three stages of heating. The two common stages for both the cooling and heating modes are the low capacity stage and the high capacity stage. The additional heating mode stage is the booster capacity stage, which offers the highest heating capacity output for a given set of ambient operating conditions.

Triple-split system means a split system that is composed of three separate assemblies: An outdoor fan coil section, a blower coil indoor unit, and an indoor compressor section.

Two-capacity (or two-stage) compressor system means a central air conditioner or heat pump that has a compressor or a group of compressors operating with only two stages of capacity. For such systems, low capacity means the compressor(s) operating at low stage, or at low load test conditions. The low compressor stage that operates for heating mode tests may be the same or different from the low compressor stage that operates for cooling mode tests. For such systems, high capacity means the compressor(s) operating at high stage, or at full load test conditions.

Two-capacity, northern heat pump means a heat pump that has a factory or field-selectable lock-out feature to prevent space cooling at high-capacity. Two-capacity heat pumps having this feature will typically have two sets of ratings, one with the feature disabled and one with the feature enabled. The heat pump is a two-capacity northern heat pump only when this feature is enabled at all times. The certified indoor coil model number must reflect whether the ratings pertain to the lockout enabled option via the inclusion of an extra identifier, such as ''+LO''. When testing as a two-capacity, northern heat pump, the lockout feature must remain enabled for all tests.

Uncased coil means a coil-only indoor unit without external cabinetry.

Variable refrigerant flow (VRF) system means a multi-split system with at least three compressor capacity stages, distributing refrigerant through a piping network to multiple indoor blower coil units each capable of individual zone temperature control, through proprietary zone temperature control devices and a common communications network. **Note:** Single-phase VRF systems less than 65,000 Btu/h are central air conditioners and central air conditioning heat pumps.

Variable-speed compressor system means a central air conditioner or heat pump that has a compressor that uses a variable-speed drive to vary the compressor speed to achieve variable capacities.

Wet-coil test means a test conducted at test conditions that typically cause water vapor to condense on the test unit evaporator coil.

2. Testing Overview and Conditions

(A) Test VRF systems using AHRI 1230–2010 (incorporated by reference, see § 430.3) and appendix M. Where AHRI 1230–2010 refers to the appendix C therein substitute the provisions of this appendix. In cases where there is a conflict, the language of the test procedure in this appendix takes precedence over AHRI 1230–2010.

For definitions use section 1 of appendix M and section 3 of AHRI 1230–2010 (incorporated by reference, see § 430.3). For rounding requirements, refer to § 430.23(m). For determination of certified ratings, refer to § 429.16 of this chapter.

For test room requirements, refer to section 2.1 of this appendix. For test unit installation requirements refer to sections 2.2.a, 2.2.b, 2.2.c, 2.2.1, 2.2.2, 2.2.3(a), 2.2.3(c), 2.2.4, 2.2.5, and 2.4 to 2.12 of this appendix, and sections 5.1.3 and 5.1.4 of AHRI 1230–2010. The ''manufacturer's published instructions,'' as stated in section 8.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) and ''manufacturer's installation instructions'' discussed in this appendix mean the manufacturer's installation instructions that come packaged with or appear in the labels applied to the unit. This does not include online manuals. Installation instructions that appear in the labels applied

to the unit take precedence over installation instructions that are shipped with the unit.

For general requirements for the test procedure, refer to section 3.1 of this appendix, except for sections 3.1.3 and 3.1.4, which are requirements for indoor air volume and outdoor air volume. For indoor air volume and outdoor air volume requirements, refer instead to section 6.1.5 (except where section 6.1.5 refers to Table 8, refer instead to Table 4 of this appendix) and 6.1.6 of AHRI 1230–2010.

For the test method, refer to sections 3.3 to 3.5 and 3.7 to 3.13 of this appendix. For cooling mode and heating mode test conditions, refer to section 6.2 of AHRI 1230–2010. For calculations of seasonal performance descriptors, refer to section 4 of this appendix.

(B) For systems other than VRF, only a subset of the sections listed in this test procedure apply when testing and determining represented values for a particular unit. Table 1 shows the sections of the test procedure that apply to each system. This table is meant to assist manufacturers in finding the appropriate sections of the test procedure; the appendix sections rather than the table provide the specific requirements for testing, and given the varied nature of available units, manufacturers are responsible for determining which sections apply to each unit tested based on the unit's characteristics. To use this table, first refer to the sections listed under ''all units''. Then refer to additional requirements based on:

(1) System configuration(s),

(2) The compressor staging or modulation capability, and

(3) Any special features.

Testing requirements for space-constrained products do not differ from similar equipment that is not space-constrained and thus are not listed separately in this table. Air conditioners and heat pumps are not listed separately in this table, but heating procedures and calculations apply only to heat pumps.

Table 1 Informative Guidance for Using Appendix M

		Testing conditions	Testing procedures				Calculations		
		General	General	Cooling*	Heating**	General	Cooling*	Heating**
Requirements for all units (except VRF)		2.1; 2.2a-c; 2.2.1; 2.2.4; 2.2.4.1; 2.2.4.1 (1); 2.2.4.2; 2.2.5.1-5; 2.2.5.7-8; 2.3; 2.3.1; 2.3.2; 2.4; 2.4.1a,d; 2.5a-c; 2.5.1; 2.5.2 - 2.5.4.2; 2.5.5 – 2.13	3.1; 3.1.1-3; 3.1.5-9; 3.11; 3.12	3.3; 3.4; 3.5a-i	3.1.4.7; 3.1.10; 3.7a,b,d; 3.8a,d; 3.8.1; 3.9; 3.10	4.4; 4.5	4.1	4.2
Additional Requirements	System Configurations (more than one may apply)							
	Single-split system – blower coil	2.2a(1)		3.1.4.1.1; 3.1.4.1.1a,b; 3.1.4.2a-b; 3.1.4.3a-b	3.1.4.4.1; 3.1.4.4.2; 3.1.4.4.3a-b; 3.1.4.5.1; 3.1.4.5.2a-c; 3.1.4.6a-b			
	Single-split system - coil-only	2.2a(1); 2.2d,e; 2.4.2		3.1.4.1.1; 3.1.4.1.1c; 3.1.4.2c; 3.5.1	3.1.4.4.1; 3.1.4.4.2; 3.1.4.4.3c; 3.1.4.5.2d; 3.7c; 3.8b; 3.9f; 3.9.1b			
	Tri-split	2.2a(2)						
	Outdoor unit with no match	2.2c						
	Single-package	2.2.4.1(2); 2.2.5.6b; 2.4.2		3.1.4.1.1; 3.1.4.1.1a,b; 3.1.4.2a-b; 3.1.4.3a-b	3.1.4.4.1; 3.1.4.4.2; 3.1.4.4.3a-b; 3.1.4.5.1; 3.1.4.5.2a-c; 3.1.4.6a-b			
	Heat pump	2.2.5.6.a						
	Heating-only heat pump			3.1.4.1.1 Table 5	3.1.4.4.3			
	Two-capacity northern heat pump		3.1.4.4.2c; 3.1.4.5.2 c- d	3.2.3c	3.6.3			
	Triple-capacity northern heat pump			3.2.5	3.6.6			4.2.6

		SDHV (non-VRF)	2.2b; 2.4.1c; 2.5.4.3						
		Single- zone-multi-coil split and non-VRF multiple-split with duct	2.2a(1),(3); 2.2.3; 2.4.1b		3.1.4.1.1; 3.1.4.1.1a-b; 3.1.4.2a-b; 3.1.4.3a-b	3.1.4.4.1; 3.1.4.4.2; 3.1.4.4.3a-b; 3.1.4.5.1; 3.1.4.5.2a-c; 3.1.4.6a-b			
		Single-zone-multi-coil split and non-VRF multiple-split, ductless	2.2.a(1),(3); 2.2.3		3.1.4.1.2; 3.1.4.2d; 3.1.4.3c; 3.2.4c; 3.5c,g,h; 3.5.2; 3.8c	3.1.4.4.4; 3.1.4.5.2e; 3.1.4.6c; 3.6.4.c; 3.8c			
		VRF multiple-split† and VRF SDHV†	2.1; 2.2.a; 2.2.b; 2.2.c; 2.2.1; 2.2.2; 2.2.3(a); 2.2.3(c);, 2.2.4; 2.2.5; 2.4-2.12	3.1 (except 3.1.3, 3.1.4) 3.1.4.1.1c; 3.11-3.13	3.3-3.5	3.7–3.10	4.4; 4.5	4.1	4.2
	Modulation Capability	Single speed compressor, fixed air volume rate			3.2.1	3.6.1		4.1.1	4.2.1
		Single speed compressor, VAV fan			3.2.2	3.6.2		4.1.2	4.2.2
		Two-capacity compressor		3.1.10	3.2.3	3.6.3		4.1.3	4.2.3
		Variable speed compressor			3.2.4	3.6.4		4.1.4	4.2.4
	Special Features	Heat pump with heat comfort controller				3.6.5			4.2.5
		Units with a multi-speed outdoor fan	2.2.2						
		Single indoor unit having multiple indoor blowers			3.2.6	3.6.2; 3.6.7		4.1.5	4.2.7

*Does not apply to heating-only heat pumps.

**Applies only to heat pumps; not to air conditioners.

†Use AHRI 1230-2010 (incorporated by reference, see § 430.3), with the sections referenced in section 2(A) of this appendix, in conjunction with the sections set forth in the table to perform test setup, testing, and calculations for determining represented values for VRF multiple-split and VRF SDHV systems.

NOTE: For all units, use section 3.13 of this appendix for off mode testing procedures and section 4.3 of this appendix for off mode calculations. For all units subject to an EER standard, use section 4.6 of this appendix to determine the energy efficiency ratio.

2.1 Test Room Requirements

a. Test using two side-by-side rooms: An indoor test room and an outdoor test room. For multiple-split, single-zone-multi-coil or multi-circuit air conditioners and heat pumps, however, use as many indoor test rooms as needed to accommodate the total number of indoor units. These rooms must comply with the requirements specified in sections 8.1.2 and 8.1.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3).

b. Inside these test rooms, use artificial loads during cyclic tests and frost accumulation tests, if needed, to produce stabilized room air temperatures. For one room, select an electric resistance heater(s) having a heating capacity that is approximately equal to the heating capacity of the test unit's condenser. For the second room, select a heater(s) having a capacity that is close to the sensible cooling capacity of the test unit's evaporator. Cycle the heater located in the same room as the test unit evaporator coil ON and OFF when the test unit cycles ON and OFF. Cycle the heater located in the same room as the test unit condensing coil ON and OFF when the test unit cycles OFF and ON.

2.2 Test Unit Installation Requirements

a. Install the unit according to section 8.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3), subject to the following additional requirements:

(1) When testing split systems, follow the requirements given in section 6.1.3.5 of AHRI 210/240–2008 (incorporated by reference, see § 430.3). For the vapor refrigerant line(s), use the insulation included with the unit; if no insulation is provided, use insulation meeting the specifications for the insulation in the installation instructions included with the unit by the manufacturer; if no insulation is included with the unit and the installation instructions do not contain provisions for insulating the line(s), fully insulate the vapor refrigerant line(s) with vapor proof insulation having an inside diameter that matches the refrigerant tubing and a nominal thickness of at least 0.5 inches. For the liquid refrigerant line(s), use the insulation included with the unit; if no insulation is provided, use insulation meeting the specifications for the insulation in the installation instructions included with the unit by the manufacturer; if no insulation is included with the unit and the installation instructions do not contain provisions for insulating the line(s), leave the liquid refrigerant line(s) exposed to the air for air conditioners and heat pumps that heat and cool; or, for heating-only heat pumps, insulate the liquid refrigerant line(s) with insulation having an inside diameter that

matches the refrigerant tubing and a nominal thickness of at least 0.5 inches. However, these requirements do not take priority over instructions for application of insulation for the purpose of improving refrigerant temperature measurement accuracy as required by sections 2.10.2 and 2.10.3 of this appendix. Insulation must be the same for the cooling and heating tests.

(2) When testing split systems, if the indoor unit does not ship with a cooling mode expansion device, test the system using the device as specified in the installation instructions provided with the indoor unit. If none is specified, test the system using a fixed orifice or piston type expansion device that is sized appropriately for the system.

(3) When testing triple-split systems (see section 1.2 of this appendix, Definitions), use the tubing length specified in section 6.1.3.5 of AHRI 210/240–2008 (incorporated by reference, see § 430.3) to connect the outdoor coil, indoor compressor section, and indoor coil while still meeting the requirement of exposing 10 feet of the tubing to outside conditions;

(4) When testing split systems having multiple indoor coils, connect each indoor blower coil unit to the outdoor unit using:

(a) 25 feet of tubing, or

(b) tubing furnished by the manufacturer, whichever is longer.

At least 10 feet of the system interconnection tubing shall be exposed to the outside conditions. If they are needed to make a secondary measurement of capacity or for verification of refrigerant charge, install refrigerant pressure measuring instruments as described in section 8.2.5 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). Section 2.10 of this appendix specifies which secondary methods require refrigerant pressure measurements and section 2.2.5.5 of this appendix discusses use of pressure measurements to verify charge. At a minimum, insulate the low-pressure line(s) of a split system with insulation having an inside diameter that matches the refrigerant tubing and a nominal thickness of 0.5 inch.

b. For units designed for both horizontal and vertical installation or for both up-flow and down-flow vertical installations, use the orientation for testing specified by the manufacturer in the certification report. Conduct testing with the following installed:

(1) The most restrictive filter(s);

(2) Supplementary heating coils; and

(3) Other equipment specified as part of the unit, including all hardware used by a heat comfort controller if so equipped (see section 1 of this appendix, Definitions). For small-duct, high-velocity systems, configure all balance dampers or restrictor devices on or inside the unit to fully open or lowest restriction.

c. Testing a ducted unit without having an indoor air filter installed is permissible as long as the minimum external static pressure requirement is adjusted as stated in Table 4, note 3 (see section 3.1.4 of this appendix). Except as noted in section 3.1.10 of this appendix, prevent the indoor air supplementary heating coils from operating during all tests. For uncased coils, create an enclosure using 1 inch fiberglass foil-faced ductboard having a nominal density of 6 pounds per cubic foot. Or alternatively, construct an enclosure using sheet metal or a similar material and insulating material having a thermal resistance (''R'' value) between 4 and 6 hr·ft^2· °F/Btu. Size the enclosure and seal between the coil and/or drainage pan and the interior of the enclosure as specified in installation instructions shipped with the unit. Also seal between the plenum and inlet and outlet ducts.

d. When testing a coil-only system, install a toroidal-type transformer to power the system's low-voltage components, complying with any additional requirements for the transformer mentioned in the installation manuals included with the unit by the system manufacturer. If the installation manuals do not provide specifications for the transformer, use a transformer having the following features:

(1) A nominal volt-amp rating such that the transformer is loaded between 25 and 90 percent of this rating for the highest level of power measured during the off mode test (section 3.13 of this appendix);

(2) Designed to operate with a primary input of 230 V, single phase, 60 Hz; and

(3) That provides an output voltage that is within the specified range for each low-voltage component. Include the power consumption of the components connected to the transformer as part of the total system power consumption during the off mode tests; do not include the power consumed by the transformer when no load is connected to it.

e. Test an outdoor unit with no match (*i.e.,* that is not distributed in commerce with any indoor units) using a coil-only indoor unit with a single cooling air volume rate whose coil has:

(1) Round tubes of outer diameter no less than 0.375 inches, and

(2) a normalized gross indoor fin surface (NGIFS) no greater than 1.0 square inches per British thermal unit per hour (sq. in./Btu/hr). NGIFS is calculated as follows:

$$NGIFS = 2 \times L_f \times W_f \times N_f \div \dot{Q}_c(95)$$

where:

L_f = Indoor coil fin length in inches, also height of the coil transverse to the tubes.

W_f = Indoor coil fin width in inches, also depth of the coil.

N_f = Number of fins.

$\dot{Q}_c(95)$ = the measured space cooling capacity of the tested outdoor unit/indoor unit combination as determined from the A2 or A Test whichever applies, Btu/h.

f. If the outdoor unit or the outdoor portion of a single-package unit has a drain pan heater to prevent freezing of defrost water, the heater shall be energized, subject to control to de-energize it when not needed by the heater's thermostat or the unit's control system, for all tests.

g. If pressure measurement devices are connected to a cooling/heating heat pump refrigerant circuit, the refrigerant charge M_t that could potentially transfer out of the connected pressure measurement systems (transducers, gauges, connections, and lines) between operating modes must be less than 2 percent of the factory refrigerant charge listed on the nameplate of the outdoor unit. If the outdoor unit nameplate has no listed refrigerant charge, or the heat pump is shipped without a refrigerant charge, use a factory refrigerant charge equal to 30 ounces per ton of certified cooling capacity. Use Equation 2.2–1 to calculate M_t for heat pumps that have a single expansion device located in the outdoor unit to serve each indoor unit, and use Equation 2.2–2 to calculate M_t for heat pumps that have two expansion devices per indoor unit.

Equation 2.2-1 $$M_t = \rho * (V_5 * f_5 + V_6 * f_6 + V_3 + V_4 - V_2)$$

Equation 2.2-2 $$M_t = \rho * (V_5 * f_5 + V_6 * f_6)$$

where:

V_i (i=2,3,4. . .) = the internal volume of the pressure measurement system (pressure lines, fittings, and gauge and/or transducer) at the location i (as indicated in Table 2), (cubic inches)

f_i (i=5,6) = 0 if the pressure measurement system is pitched upwards from the pressure tap location to the gauge or transducer, 1 if it is not.

ρ = the density associated with liquid refrigerant at 100 °F bubble point conditions (ounces per cubic inch)

TABLE 2—PRESSURE MEASUREMENT LOCATIONS

Location	
Compressor Discharge	1
Between Outdoor Coil and Outdoor Expansion Valve(s)	2
Liquid Service Valve	3
Indoor Coil Inlet	4
Indoor Coil Outlet	5

TABLE 2—PRESSURE MEASUREMENT LOCATIONS—Continued

Location	
Common Suction Port (i.e. vapor service valve)	6
Compressor Suction	7

Calculate the internal volume of each pressure measurement system using internal volume reported for pressure transducers and gauges in product literature, if available. If such information is not available, use the value of 0.1 cubic inches internal volume for each pressure transducer, and 0.2 cubic inches for each pressure gauge.

In addition, for heat pumps that have a single expansion device located in the outdoor unit to serve each indoor unit, the internal volume of the pressure system at location 2 (as indicated in Table 2) must be no more than 1 cubic inch. Once the pressure measurement lines are set up, no change should be made until all tests are finished.

2.2.1 Defrost Control Settings

Set heat pump defrost controls at the normal settings which most typify those encountered in generalized climatic region IV. (Refer to Figure 1 and Table 20 of section 4.2 of this appendix for information on region IV.) For heat pumps that use a time-adaptive defrost control system (see section 1.2 of this appendix, Definitions), the manufacturer must specify in the certification report the frosting interval to be used during frost accumulation tests and provide the procedure for manually initiating the defrost at the specified time.

2.2.2 Special Requirements for Units Having a Multiple-Speed Outdoor Fan

Configure the multiple-speed outdoor fan according to the installation manual included with the unit by the manufacturer, and thereafter, leave it unchanged for all tests. The controls of the unit must regulate the operation of the outdoor fan during all lab tests except dry coil cooling mode tests. For dry coil cooling mode tests, the outdoor fan must operate at the same speed used during the required wet coil test conducted at the same outdoor test conditions.

2.2.3 Special Requirements for Multi-Split Air Conditioners and Heat Pumps and Ducted Systems Using a Single Indoor Section Containing Multiple Indoor Blowers That Would Normally Operate Using Two or More Indoor Thermostats

Because these systems will have more than one indoor blower and possibly multiple outdoor fans and compressor systems, references in this test procedure to a singular indoor blower, outdoor fan, and/or compressor means all indoor blowers, all outdoor fans, and all compressor systems that are energized during the test.

a. Additional requirements for multi-split air conditioners and heat pumps. For any test where the system is operated at part load (*i.e.,* one or more compressors ''off'', operating at the intermediate or minimum compressor speed, or at low compressor capacity), record the indoor coil(s) that are not providing heating or cooling during the test. For variable-speed systems, the manufacturer must designate in the certification report at least one indoor unit that is not providing heating or cooling for all tests conducted at minimum compressor speed.

b. Additional requirements for ducted split systems with a single indoor unit containing multiple indoor blowers (or for single-package units with an indoor section containing multiple indoor blowers) where the indoor blowers are designed to cycle on and off independently of one another and are not controlled such that all indoor blowers are modulated to always operate at the same air volume rate or speed. For any test where the system is operated at its lowest capacity—*i.e.,* the lowest total air volume rate allowed when operating the single-speed compressor or when operating at low compressor capacity—indoor blowers accounting for at least one-third of the full-load air volume rate must be turned off unless prevented by the controls of the unit. In such cases, turn off as many indoor blowers as permitted by the unit's controls. Where more than one option exists for meeting this ''off'' requirement, the manufacturer shall indicate in its certification report which indoor blower(s) are turned off. The chosen configuration shall remain unchanged for all tests conducted at the same lowest capacity configuration. For any indoor coil turned off during a test, cease forced airflow through any outlet duct connected to a switched-off indoor blower.

c. For test setups where the laboratory's physical limitations requires use of more than the required line length of 25 feet as listed in section 2.2.a(4) of this appendix, then the actual refrigerant line length used by the laboratory may exceed the required length and the refrigerant line length correction factors in Table 4 of AHRI 1230–2010 are applied to the cooling capacity measured for each cooling mode test.

2.2.4 Wet-Bulb Temperature Requirements for the Air Entering the Indoor and Outdoor Coils

2.2.4.1 Cooling Mode Tests

For wet-coil cooling mode tests, regulate the water vapor content of the air entering the indoor unit so that the wet-bulb temperature is as listed in Tables 5 to 8. As noted in these same tables, achieve a wet-bulb temperature during dry-coil cooling mode tests that results in no condensate forming on the indoor coil. Controlling the water vapor content of the air entering the outdoor side of the unit is not required for cooling mode tests except when testing:

(1) Units that reject condensate to the outdoor coil during wet coil tests. Tables 5–8 list the applicable wet-bulb temperatures.

(2) Single-package units where all or part of the indoor section is located in the outdoor test room. The average dew point temperature of the air entering the outdoor coil during wet coil tests must be within ±3.0 °F of the average dew point temperature of the air entering the indoor coil over the 30-minute data collection interval described in section 3.3 of this appendix. For dry coil tests on such units, it may be necessary to limit the moisture content of the air entering the outdoor coil of the unit to meet the requirements of section 3.4 of this appendix.

2.2.4.2 Heating Mode Tests

For heating mode tests, regulate the water vapor content of the air entering the outdoor unit to the applicable wet-bulb temperature listed in Tables 12 to 15. The wet-bulb temperature entering the indoor side of the heat pump must not exceed 60 °F. Additionally, if the Outdoor Air Enthalpy test method (section 2.10.1 of this appendix) is used while testing a single-package heat pump where all or part of the outdoor section is located in the indoor test room, adjust the wet-bulb temperature for the air entering the indoor side to yield an indoor-side dew point temperature that is as close as reasonably possible to the dew point temperature of the outdoor-side entering air.

2.2.5 Additional Refrigerant Charging Requirements

2.2.5.1 Instructions To Use for Charging

a. Where the manufacturer's installation instructions contain two sets of refrigerant charging criteria, one for field installations and one for lab testing, use the field installation criteria.

b. For systems consisting of an outdoor unit manufacturer's outdoor section and indoor section with differing charging procedures, adjust the refrigerant charge per the outdoor installation instructions.

c. For systems consisting of an outdoor unit manufacturer's outdoor unit and an independent coil manufacturer's indoor unit with differing charging procedures, adjust the refrigerant charge per the indoor unit's installation instructions. If instructions are provided only with the outdoor unit or are provided only with an independent coil manufacturer's indoor unit, then use the provided instructions.

2.2.5.2 Test(s) To Use for Charging

a. Use the tests or operating conditions specified in the manufacturer's installation instructions for charging. The manufacturer's installation instructions may specify use of tests other than the A or A_2 test for charging, but, unless the unit is a heating-only heat pump, the air volume rate must be determined by the A or A_2 test as specified in section 3.1 of this appendix.

b. If the manufacturer's installation instructions do not specify a test or operating conditions for charging or there are no manufacturer's instructions, use the following test(s):

(1) For air conditioners or cooling and heating heat pumps, use the A or A_2 test.

(2) For cooling and heating heat pumps that do not operate in the H1 or $H1_2$ test (*e.g.* due to shut down by the unit limiting devices) when tested using the charge determined at the A or A_2 test, and for heating-only heat pumps, use the H1 or $H1_2$ test.

2.2.5.3 Parameters To Set and Their Target Values

a. Consult the manufacturer's installation instructions regarding which parameters (*e.g.,* superheat) to set and their target values. If the instructions provide ranges of values, select target values equal to the midpoints of the provided ranges.

b. In the event of conflicting information between charging instructions (*i.e.,* multiple conditions given for charge adjustment where all conditions specified cannot be met), follow the following hierarchy.

(1) For fixed orifice systems:

(i) Superheat

(ii) High side pressure or corresponding saturation or dew-point temperature

(iii) Low side pressure or corresponding saturation or dew-point temperature

(iv) Low side temperature

(v) High side temperature

(vi) Charge weight

(2) For expansion valve systems:

(i) Subcooling

(ii) High side pressure or corresponding saturation or dew-point temperature

(iii) Low side pressure or corresponding saturation or dew-point temperature

(iv) Approach temperature (difference between temperature of liquid leaving condenser and condenser average inlet air temperature)

(v) Charge weight

c. If there are no installation instructions and/or they do not provide parameters and target values, set superheat to a target value of 12 °F for fixed orifice systems or set subcooling to a target value of 10 °F for expansion valve systems.

2.2.5.4 Charging Tolerances

a. If the manufacturer's installation instructions specify tolerances on target values for the charging parameters, set the values within these tolerances.

b. Otherwise, set parameter values within the following test condition tolerances for the different charging parameters:

1. Superheat: +/− 2.0 °F
2. Subcooling: +/− 2.0 °F
3. High side pressure or corresponding saturation or dew point temperature: +/− 4.0 psi or +/− 1.0 °F
4. Low side pressure or corresponding saturation or dew point temperature: +/− 2.0 psi or +/− 0.8 °F
5. High side temperature: +/−2.0 °F
6. Low side temperature: +/−2.0 °F
7. Approach temperature: +/− 1.0 °F
8. Charge weight: +/− 2.0 ounce

2.2.5.5 Special Charging Instructions

a. Cooling and Heating Heat Pumps

If, using the initial charge set in the A or A_2 test, the conditions are not within the range specified in manufacturer's installation instructions for the H1 or $H1_2$ test, make as small as possible an adjustment to obtain conditions for this test in the specified range. After this adjustment, recheck conditions in the A or A_2 test to confirm that they are still within the specified range for the A or A_2 test.

b. Single-Package Systems

Unless otherwise directed by the manufacturer's installation instructions, install one or more refrigerant line pressure gauges during the setup of the unit, located depending on the parameters used to verify or set charge, as described:

(1) Install a pressure gauge at the location of the service valve on the liquid line if charging is on the basis of subcooling, or high side pressure or corresponding saturation or dew point temperature;

(2) Install a pressure gauge at the location of the service valve on the suction line if charging is on the basis of superheat, or low side pressure or corresponding saturation or dew point temperature.

Use methods for installing pressure gauge(s) at the required location(s) as indicated in manufacturer's instructions if specified.

2.2.5.6 Near-Azeotropic and Zeotropic Refrigerants.

Perform charging of near-azeotropic and zeotropic refrigerants only with refrigerant in the liquid state.

2.2.5.7 Adjustment of Charge Between Tests.

After charging the system as described in this test procedure, use the set refrigerant charge for all tests used to determine performance. Do not adjust the refrigerant charge at any point during testing. If measurements indicate that refrigerant charge has leaked during the test, repair the refrigerant leak, repeat any necessary set-up steps, and repeat all tests.

2.3 Indoor Air Volume Rates.

If a unit's controls allow for overspeeding the indoor blower (usually on a temporary basis), take the necessary steps to prevent overspeeding during all tests.

2.3.1 Cooling Tests

a. Set indoor blower airflow-control settings (*e.g.,* fan motor pin settings, fan motor speed) according to the requirements that are specified in section 3.1.4 of this appendix.

b. Express the Cooling full-load air volume rate, the Cooling Minimum Air Volume Rate, and the Cooling Intermediate Air Volume Rate in terms of standard air.

2.3.2 Heating Tests

a. Set indoor blower airflow-control settings (*e.g.,* fan motor pin settings, fan motor speed) according to the requirements that are specified in section 3.1.4 of this appendix.

b. Express the heating full-load air volume rate, the heating minimum air volume rate, the heating intermediate air volume rate, and the heating nominal air volume rate in terms of standard air.

2.4 Indoor Coil Inlet and Outlet Duct Connections

Insulate and/or construct the outlet plenum as described in section 2.4.1 of this appendix and, if installed, the inlet plenum described in section 2.4.2 of this appendix with thermal insulation having a nominal overall resistance (R-value) of at least 19 hr·ft^2· °F/Btu.

2.4.1 Outlet Plenum for the Indoor Unit

a. Attach a plenum to the outlet of the indoor coil. (**Note:** For some packaged systems, the indoor coil may be located in the outdoor test room.)

b. For systems having multiple indoor coils, or multiple indoor blowers within a single indoor section, attach a plenum to each indoor coil or indoor blower outlet. In order to reduce the number of required airflow measurement apparati (section 2.6 of this appendix), each such apparatus may serve multiple outlet plenums connected to a single common duct leading to the apparatus. More than one indoor test room may be used, which may use one or more common ducts leading to one or more airflow measurement apparati within each test room that contains multiple indoor coils. At the plane where each plenum enters a common duct, install an adjustable airflow damper and use it to equalize the static pressure in each plenum. Each outlet air temperature grid (section 2.5.4 of this appendix) and airflow measuring apparatus are located downstream of the inlet(s) to the common duct. For multiple-circuit (or multi-circuit) systems for which each indoor coil outlet is measured separately and its outlet plenum is not connected to a common duct connecting multiple outlet plenums, the outlet air temperature grid and airflow measuring apparatus must be installed at each outlet plenum.

c. For small-duct, high-velocity systems, install an outlet plenum that has a diameter that is equal to or less than the value listed in Table 3. The limit depends only on the Cooling full-load air volume rate (see section 3.1.4.1.1 of this appendix) and is effective regardless of the flange dimensions on the outlet of the unit (or an air supply plenum adapter accessory, if installed in accordance with the manufacturer's installation instructions).

d. Add a static pressure tap to each face of the (each) outlet plenum, if rectangular, or at four evenly distributed locations along the circumference of an oval or round plenum. Create a manifold that connects the four static pressure taps. Figure 9 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) shows allowed options for the manifold configuration. The cross-sectional dimensions of plenum shall be equal to the dimensions of the indoor unit outlet. See Figures 7a, 7b, and 7c of ANSI/ASHRAE 37–2009 for the minimum length of the (each) outlet plenum and the locations for adding the static pressure taps for ducted blower coil indoor units and single-package systems. See Figure 8 of ANSI/ASHRAE 37–2009 for coil-only indoor units.

TABLE 3—SIZE OF OUTLET PLENUM FOR SMALL-DUCT HIGH-VELOCITY INDOOR UNITS

Cooling full-load air volume rate (scfm)	Maximum diameter* of outlet plenum (inches)
≤500	6
501 to 700	7
701 to 900	8
901 to 1100	9
1101 to 1400	10
1401 to 1750	11

*If the outlet plenum is rectangular, calculate its equivalent diameter using ($4A/P$,) where A is the cross-sectional area and P is the perimeter of the rectangular plenum, and compare it to the listed maximum diameter.

2.4.2 Inlet Plenum for the Indoor Unit

Install an inlet plenum when testing a coil-only indoor unit, a ducted blower coil indoor unit, or a single-package system. See Figures 7b and 7c of ANSI/ASHRAE 37–2009 for cross-sectional dimensions, the minimum length of the inlet plenum, and the locations of the static-pressure taps for ducted blower coil indoor units and single-package systems. See Figure 8 of ANSI/ASHRAE 37–2009 for coil-only indoor units. The inlet plenum duct size shall equal the size of the inlet opening of the air-handling (blower coil) unit or furnace. For a ducted blower coil indoor unit the set up may omit the inlet plenum if an inlet airflow prevention device is installed with a straight internally unobstructed duct on its outlet end with a minimum length equal to 1.5 times the square root of the cross-sectional area of the indoor unit inlet. See section 2.5.1.2 of this appendix for requirements for the locations of static pressure taps built into the inlet airflow prevention device. For all of these arrangements, make a manifold that connects the four static-pressure taps using one of the three configurations specified in section 2.4.1.d of this appendix. Never use an inlet plenum when testing non-ducted indoor units.

2.5 Indoor Coil Air Property Measurements and Airflow Prevention Devices

Follow instructions for indoor coil air property measurements as described in section 2.14 of this appendix, unless otherwise instructed in this section.

a. Measure the dry-bulb temperature and water vapor content of the air entering and leaving the indoor coil. If needed, use an air sampling device to divert air to a sensor(s) that measures the water vapor content of the air. See section 5.3 of ANSI/ASHRAE 41.1–2013 (incorporated by reference, see § 430.3) for guidance on constructing an air sampling device. No part of the air sampling device or the tubing transferring the sampled air to the sensor shall be within two inches of the test chamber floor, and the transfer tubing shall be insulated. The sampling device may also be used for measurement of dry bulb temperature by transferring the sampled air to a remotely located sensor(s). The air sampling device and the remotely located temperature sensor(s) may be used to determine the entering air dry bulb temperature during any test. The air sampling device and the remotely located sensor(s) may be used to determine the leaving air dry bulb temperature for all tests except:

(1) Cyclic tests; and

(2) Frost accumulation tests.

b. Install grids of temperature sensors to measure dry bulb temperatures of both the entering and leaving airstreams of the indoor unit. These grids of dry bulb temperature sensors may be used to measure average dry bulb temperature entering and leaving the indoor unit in all cases (as an alternative to the dry bulb sensor measuring the sampled air). The leaving airstream grid is required for measurement of average dry bulb temperature leaving the indoor unit for the two special cases noted above. The grids are also required to measure the air temperature distribution of the entering and leaving airstreams as described in sections 3.1.8 and 3.1.9 of this appendix. Two such grids may applied as a thermopile, to directly obtain the average temperature difference rather than directly measuring both entering and leaving average temperatures.

c. Use of airflow prevention devices. Use an inlet and outlet air damper box, or use an inlet upturned duct and an outlet air damper box when conducting one or both of the cyclic tests listed in sections 3.2 and 3.6 of this appendix on ducted systems. If not conducting any cyclic tests, an outlet air damper box is required when testing ducted and non-ducted heat pumps that cycle off the indoor blower during defrost cycles and there is no other means for preventing natural or forced convection through the indoor unit when the indoor blower is off. Never use an inlet damper box or an inlet upturned duct when testing non-ducted indoor units. An inlet upturned duct is a length of ductwork installed upstream from the inlet such that the indoor duct inlet opening, facing upwards, is sufficiently high to prevent natural convection transfer out of the duct. If an inlet upturned duct is used, install a dry bulb temperature sensor near the inlet opening of the indoor duct at a centerline location not higher than the lowest elevation of the duct edges at the inlet, and ensure that any pair of 5-minute averages of the dry bulb temperature at this location, measured at least every minute during the compressor OFF period of the cyclic test, do not differ by more than 1.0 °F.

2.5.1 Test Set-Up on the Inlet Side of the Indoor Coil: For Cases Where the Inlet Airflow Prevention Device Is Installed

a. Install an airflow prevention device as specified in section 2.5.1.1 or 2.5.1.2 of this appendix, whichever applies.

b. For an inlet damper box, locate the grid of entering air dry-bulb temperature sensors, if used, and the air sampling device, or the sensor used to measure the water vapor content of the inlet air, at a location immediately upstream of the damper box inlet. For an inlet upturned duct, locate the grid of entering air dry-bulb temperature sensors, if used, and the air sampling device, or the sensor used to measure the water vapor content of the inlet air, at a location at least one foot downstream from the beginning of the insulated portion of the duct but before the static pressure measurement.

2.5.1.1 If the Section 2.4.2 Inlet Plenum Is Installed

Construct the airflow prevention device having a cross-sectional flow area equal to or greater than the flow area of the inlet plenum. Install the airflow prevention device upstream of the inlet plenum and construct ductwork connecting it to the inlet plenum. If needed, use an adaptor plate or a transition duct section to connect the airflow prevention device with the inlet plenum. Insulate the ductwork and inlet plenum with thermal insulation that has a nominal overall resistance (R-value) of at least 19 hr · ft² · °F/Btu.

2.5.1.2 If the Section 2.4.2 Inlet Plenum Is Not Installed

Construct the airflow prevention device having a cross-sectional flow area equal to or greater than the flow area of the air inlet of the indoor unit. Install the airflow prevention device immediately upstream of the inlet of the indoor unit. If needed, use an adaptor plate or a short transition duct section to connect the airflow prevention device with the unit's air inlet. Add static pressure taps at the center of each face of a rectangular airflow prevention device, or at four evenly distributed locations along the circumference of an oval or round airflow prevention device. Locate the pressure taps at a distance from the indoor unit inlet equal to 0.5 times the square root of the cross sectional area of the indoor unit inlet. This location must be between the damper and the inlet of the indoor unit, if a damper is used. Make a manifold that connects the four static pressure taps using one of the configurations shown in Figure 9 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). Insulate the ductwork with thermal insulation that has a nominal overall resistance (R-value) of at least 19 hr · ft² · °F/Btu.

2.5.2 Test Set-Up on the Inlet Side of the Indoor Unit: for Cases Where No Airflow Prevention Device is Installed

If using the section 2.4.2 inlet plenum and a grid of dry bulb temperature sensors, mount the grid at a location upstream of the static pressure taps described in section 2.4.2 of this appendix, preferably at the entrance plane of the inlet plenum. If the section 2.4.2 inlet plenum is not used (*i.e.* for non-ducted units) locate a grid approximately 6 inches upstream of the indoor unit inlet. In the case of a system having multiple non-ducted indoor units, do this for each indoor unit. Position an air sampling device, or the sensor used to measure the water vapor content of the inlet air, immediately upstream of the (each) entering air dry-bulb temperature sensor grid. If a grid of sensors is not used, position the entering air sampling device (or the sensor used to measure the water vapor content of the inlet air) as if the grid were present.

2.5.3 Indoor Coil Static Pressure Difference Measurement

Fabricate pressure taps meeting all requirements described in section 6.5.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) and illustrated in Figure 2A of AMCA 210–2007 (incorporated by reference, see § 430.3), however, if adhering strictly to the description in section 6.5.2 of ANSI/ASHRAE 37–2009, the minimum pressure tap length of 2.5 times the inner diameter of Figure 2A of AMCA 210–2007 is waived. Use a differential pressure measuring instrument that is accurate to within ±0.01 inches of water and has a resolution of at least 0.01 inches of water to measure the static pressure difference between the indoor coil air inlet and outlet. Connect one side of the differential pressure instrument to the manifolded pressure taps installed in the outlet plenum. Connect the other side of the instrument to the manifolded pressure taps located in either

the inlet plenum or incorporated within the airflow prevention device. For non-ducted indoor units that are tested with multiple outlet plenums, measure the static pressure within each outlet plenum relative to the surrounding atmosphere.

2.5.4 Test Set-Up on the Outlet Side of the Indoor Coil

a. Install an interconnecting duct between the outlet plenum described in section 2.4.1 of this appendix and the airflow measuring apparatus described below in section 2.6 of this appendix. The cross-sectional flow area of the interconnecting duct must be equal to or greater than the flow area of the outlet plenum or the common duct used when testing non-ducted units having multiple indoor coils. If needed, use adaptor plates or transition duct sections to allow the connections. To minimize leakage, tape joints within the interconnecting duct (and the outlet plenum). Construct or insulate the entire flow section with thermal insulation having a nominal overall resistance (R-value) of at least 19 hr·ft^2· °F/Btu.

b. Install a grid(s) of dry-bulb temperature sensors inside the interconnecting duct. Also, install an air sampling device, or the sensor(s) used to measure the water vapor content of the outlet air, inside the interconnecting duct. Locate the dry-bulb temperature grid(s) upstream of the air sampling device (or the in-duct sensor(s) used to measure the water vapor content of the outlet air). Turn off the sampler fan motor during the cyclic tests. Air leaving an indoor unit that is sampled by an air sampling device for remote water-vapor-content measurement must be returned to the interconnecting duct at a location:

(1) Downstream of the air sampling device;

(2) On the same side of the outlet air damper as the air sampling device; and

(3) Upstream of the section 2.6 airflow measuring apparatus.

2.5.4.1 Outlet Air Damper Box Placement and Requirements

If using an outlet air damper box (see section 2.5 of this appendix), the leakage rate from the combination of the outlet plenum, the closed damper, and the duct section that connects these two components must not exceed 20 cubic feet per minute when a negative pressure of 1 inch of water column is maintained at the plenum's inlet.

2.5.4.2 Procedures To Minimize Temperature Maldistribution

Use these procedures if necessary to correct temperature maldistributions. Install a mixing device(s) upstream of the outlet air, dry-bulb temperature grid (but downstream of the outlet plenum static pressure taps). Use a perforated screen located between the mixing device and the dry-bulb temperature grid, with a maximum open area of 40 percent. One or both items should help to meet the maximum outlet air temperature distribution specified in section 3.1.8 of this appendix. Mixing devices are described in sections 5.3.2 and 5.3.3 of ANSI/ASHRAE 41.1–2013 and section 5.2.2 of ASHRAE 41.2–1987 (RA 1992) (incorporated by reference, see § 430.3).

2.5.4.3 Minimizing Air Leakage

For small-duct, high-velocity systems, install an air damper near the end of the interconnecting duct, just prior to the transition to the airflow measuring apparatus of section 2.6 of this appendix. To minimize air leakage, adjust this damper such that the pressure in the receiving chamber of the airflow measuring apparatus is no more than 0.5 inch of water higher than the surrounding test room ambient. If applicable, in lieu of installing a separate damper, use the outlet air damper box of sections 2.5 and 2.5.4.1 of this appendix if it allows variable positioning. Also apply these steps to any conventional indoor blower unit that creates a static pressure within the receiving chamber of the airflow measuring apparatus that exceeds the test room ambient pressure by more than 0.5 inches of water column.

2.5.5 Dry Bulb Temperature Measurement

a. Measure dry bulb temperatures as specified in sections 4, 5.3, 6, and 7 of ANSI/ASHRAE 41.1–2013 (incorporated by reference, see § 430.3).

b. Distribute the sensors of a dry-bulb temperature grid over the entire flow area. The required minimum is 9 sensors per grid.

2.5.6 Water Vapor Content Measurement

Determine water vapor content by measuring dry-bulb temperature combined with the air wet-bulb temperature, dew point temperature, or relative humidity. If used, construct and apply wet-bulb temperature sensors as specified in sections 4, 5, 6, 7.2, 7.3, and 7.4 of ASHRAE 41.6–2014 (incorporated by reference, see § 430.3). The temperature sensor (wick removed) must be accurate to within ±0.2 °F. If used, apply dew point hygrometers as specified in sections 4, 5, 6, 7.1, and 7.4 of ASHRAE 41.6–2014 (incorporated by reference, see § 430.3). The dew point hygrometers must be accurate to within ±0.4 °F when operated at conditions that result in the evaluation of dew points above 35 °F. If used, a relative humidity (RH) meter must be accurate to within ±0.7% RH. Other means to determine the psychrometric state of air may be used as long as the measurement accuracy is equivalent to or better than the accuracy achieved from using a wet-bulb temperature sensor that meets the above specifications.

2.5.7 Air Damper Box Performance Requirements

If used (see section 2.5 of this appendix), the air damper box(es) must be capable of being completely opened or completely closed within 10 seconds for each action.

2.6 Airflow Measuring Apparatus

a. Fabricate and operate an airflow measuring apparatus as specified in section 6.2 and 6.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). Place the static pressure taps and position the diffusion baffle (settling means) relative to the chamber inlet as indicated in Figure 12 of AMCA 210–2007 and/or Figure 14 of ASHRAE 41.2–1987 (RA 1992) (incorporated by reference, see § 430.3). When measuring the static pressure difference across nozzles and/or velocity pressure at nozzle throats using electronic pressure transducers and a data acquisition system, if high frequency fluctuations cause measurement variations to exceed the test tolerance limits specified in section 9.2 and Table 2 of ANSI/ASHRAE 37–2009, dampen the measurement system such that the time constant associated with response to a step change in measurement (time for the response to change 63% of the way from the initial output to the final output) is no longer than five seconds.

b. Connect the airflow measuring apparatus to the interconnecting duct section described in section 2.5.4 of this appendix. See sections 6.1.1, 6.1.2, and 6.1.4, and Figures 1, 2, and 4 of ANSI/ASHRAE 37–2009; and Figures D1, D2, and D4 of AHRI 210/240–2008 (incorporated by reference, see § 430.3) for illustrative examples of how the test apparatus may be applied within a complete laboratory set-up. Instead of following one of these examples, an alternative set-up may be used to handle the air leaving the airflow measuring apparatus and to supply properly conditioned air to the test unit's inlet. The alternative set-up, however, must not interfere with the prescribed means for measuring airflow rate, inlet and outlet air temperatures, inlet and outlet water vapor contents, and external static pressures, nor create abnormal conditions surrounding the test unit. (**Note:** Do not use an enclosure as described in section 6.1.3 of ANSI/ASHRAE 37–2009 when testing triple-split units.)

2.7 Electrical Voltage Supply

Perform all tests at the voltage specified in section 6.1.3.2 of AHRI 210/240–2008 (incorporated by reference, see § 430.3) for ''Standard Rating Tests.'' If either the indoor or the outdoor unit has a 208V or 200V nameplate voltage and the other unit has a 230V nameplate rating, select the voltage supply on the outdoor unit for testing. Otherwise, supply each unit with its own nameplate voltage. Measure the supply voltage at the terminals on the test unit using a volt meter that provides a reading that is accurate to within ±1.0 percent of the measured quantity.

2.8 Electrical Power and Energy Measurements

a. Use an integrating power (watt-hour) measuring system to determine the electrical energy or average electrical power supplied to all components of the air conditioner or heat pump (including auxiliary components such as controls, transformers, crankcase heater, integral condensate pump on non-ducted indoor units, etc.). The watt-hour measuring system must give readings that are accurate to within ±0.5 percent. For cyclic tests, this accuracy is required during both the ON and OFF cycles. Use either two different scales on the same watt-hour meter or two separate watt-hour meters. Activate the scale or meter having the lower power rating within 15 seconds after beginning an OFF cycle. Activate the scale or meter having the higher power rating within 15 seconds prior to beginning an ON cycle. For ducted blower coil systems, the ON cycle lasts from compressor ON to indoor blower OFF. For ducted coil-only systems, the ON cycle lasts from compressor ON to compressor OFF. For non-ducted units, the ON cycle lasts from

indoor blower ON to indoor blower OFF. When testing air conditioners and heat pumps having a variable-speed compressor, avoid using an induction watt/watt-hour meter.

b. When performing section 3.5 and/or 3.8 cyclic tests on non-ducted units, provide instrumentation to determine the average electrical power consumption of the indoor blower motor to within ±1.0 percent. If required according to sections 3.3, 3.4, 3.7, 3.9.1 of this appendix, and/or 3.10 of this appendix, this same instrumentation requirement (to determine the average electrical power consumption of the indoor blower motor to within ±1.0 percent) applies when testing air conditioners and heat pumps having a variable-speed constant-air-volume-rate indoor blower or a variable-speed, variable-air-volume-rate indoor blower.

2.9 Time Measurements

Make elapsed time measurements using an instrument that yields readings accurate to within ±0.2 percent.

2.10 Test Apparatus for the Secondary Space Conditioning Capacity Measurement

For all tests, use the indoor air enthalpy method to measure the unit's capacity. This method uses the test set-up specified in sections 2.4 to 2.6 of this appendix. In addition, for all steady-state tests, conduct a second, independent measurement of capacity as described in section 3.1.1 of this appendix. For split systems, use one of the following secondary measurement methods: Outdoor air enthalpy method, compressor calibration method, or refrigerant enthalpy method. For single-package units, use either the outdoor air enthalpy method or the compressor calibration method as the secondary measurement.

2.10.1 Outdoor Air Enthalpy Method

a. To make a secondary measurement of indoor space conditioning capacity using the outdoor air enthalpy method, do the following:

(1) Measure the electrical power consumption of the test unit;

(2) Measure the air-side capacity at the outdoor coil; and

(3) Apply a heat balance on the refrigerant cycle.

b. The test apparatus required for the outdoor air enthalpy method is a subset of the apparatus used for the indoor air enthalpy method. Required apparatus includes the following:

(1) On the outlet side, an outlet plenum containing static pressure taps (sections 2.4, 2.4.1, and 2.5.3 of this appendix),

(2) An airflow measuring apparatus (section 2.6 of this appendix),

(3) A duct section that connects these two components and itself contains the instrumentation for measuring the dry-bulb temperature and water vapor content of the air leaving the outdoor coil (sections 2.5.4, 2.5.5, and 2.5.6 of this appendix), and

(4) On the inlet side, a sampling device and temperature grid (section 2.11.b of this appendix).

c. During the free outdoor air tests described in sections 3.11.1 and 3.11.1.1 of this appendix, measure the evaporator and condenser temperatures or pressures. On both the outdoor coil and the indoor coil, solder a thermocouple onto a return bend located at or near the midpoint of each coil or at points not affected by vapor superheat or liquid subcooling. Alternatively, if the test unit is not sensitive to the refrigerant charge, install pressure gages to the access valves or to ports created from tapping into the suction and discharge lines according to sections 7.4.2 and 8.2.5 of ANSI/ASHRAE 37–2009. Use this alternative approach when testing a unit charged with a zeotropic refrigerant having a temperature glide in excess of 1 °F at the specified test conditions.

2.10.2 Compressor Calibration Method

Measure refrigerant pressures and temperatures to determine the evaporator superheat and the enthalpy of the refrigerant that enters and exits the indoor coil. Determine refrigerant flow rate or, when the superheat of the refrigerant leaving the evaporator is less than 5 °F, total capacity from separate calibration tests conducted under identical operating conditions. When using this method, install instrumentation and measure refrigerant properties according to section 7.4.2 and 8.2.5 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). If removing the refrigerant before applying refrigerant lines and subsequently recharging, use the steps in 7.4.2 of ANSI/ASHRAE 37–2009 in addition to the methods of section 2.2.5 of this appendix to confirm the refrigerant charge. Use refrigerant temperature and pressure measuring instruments that meet the specifications given in sections 5.1.1 and 5.2 of ANSI/ASHRAE 37–2009.

2.10.3 Refrigerant Enthalpy Method

For this method, calculate space conditioning capacity by determining the refrigerant enthalpy change for the indoor coil and directly measuring the refrigerant flow rate. Use section 7.5.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) for the requirements for this method, including the additional instrumentation requirements, and information on placing the flow meter and a sight glass. Use refrigerant temperature, pressure, and flow measuring instruments that meet the specifications given in sections 5.1.1, 5.2, and 5.5.1 of ANSI/ASHRAE 37–2009. Refrigerant flow measurement device(s), if used, must be either elevated at least two feet from the test chamber floor or placed upon insulating material having a total thermal resistance of at least R–12 and extending at least one foot laterally beyond each side of the device(s)' exposed surfaces.

2.11 Measurement of Test Room Ambient Conditions

Follow instructions for setting up air sampling device and aspirating psychrometer as described in section 2.14 of this appendix, unless otherwise instructed in this section.

a. If using a test set-up where air is ducted directly from the conditioning apparatus to the indoor coil inlet (see Figure 2, Loop Air-Enthalpy Test Method Arrangement, of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3)), add instrumentation to permit measurement of the indoor test room dry-bulb temperature.

b. On the outdoor side, use one of the following two approaches, except that approach (1) is required for all evaporatively-cooled units and units that transfer condensate to the outdoor unit for evaporation using condenser heat.

(1) Use sampling tree air collection on all air-inlet surfaces of the outdoor unit.

(2) Use sampling tree air collection on one or more faces of the outdoor unit and demonstrate air temperature uniformity as follows. Install a grid of evenly-distributed thermocouples on each air-permitting face on the inlet of the outdoor unit. Install the thermocouples on the air sampling device, locate them individually or attach them to a wire structure. If not installed on the air sampling device, install the thermocouple grid 6 to 24 inches from the unit. The thermocouples shall be evenly spaced across the coil inlet surface and be installed to avoid sampling of discharge air or blockage of air recirculation. The grid of thermocouples must provide at least 16 measuring points per face or one measurement per square foot of inlet face area, whichever is less. This grid must be constructed and used as per section 5.3 of ANSI/ASHRAE 41.1–2013 (incorporated by reference, see § 430.3). The maximum difference between the average temperatures measured during the test period of any two pairs of these individual thermocouples located at any of the faces of the inlet of the outdoor unit, must not exceed 2.0 °F, otherwise approach (1) must be used.

The air sampling devices shall be located at the geometric center of each side; the branches may be oriented either parallel or perpendicular to the longer edges of the air inlet area. The air sampling devices in the outdoor air inlet location shall be sized such that they cover at least 75% of the face area of the side of the coil that they are measuring.

Air distribution at the test facility point of supply to the unit shall be reviewed and may require remediation prior to the beginning of testing. Mixing fans can be used to ensure adequate air distribution in the test room. If used, mixing fans shall be oriented such that they are pointed away from the air intake so that the mixing fan exhaust does not affect the outdoor coil air volume rate. Particular attention should be given to prevent the mixing fans from affecting (enhancing or limiting) recirculation of condenser fan exhaust air back through the unit. Any fan used to enhance test room air mixing shall not cause air velocities in the vicinity of the test unit to exceed 500 feet per minute.

The air sampling device may be larger than the face area of the side being measured, however care shall be taken to prevent discharge air from being sampled. If an air sampling device dimension extends beyond the inlet area of the unit, holes shall be blocked in the air sampling device to prevent sampling of discharge air. Holes can be blocked to reduce the region of coverage of the intake holes both in the direction of the trunk axis or perpendicular to the trunk axis. For intake hole region reduction in the direction of the trunk axis, block holes of one or more adjacent pairs of branches (the branches of a pair connect opposite each

other at the same trunk location) at either the outlet end or the closed end of the trunk. For intake hole region reduction perpendicular to the trunk axis, block off the same number of holes on each branch on both sides of the trunk.

A maximum of four (4) air sampling devices shall be connected to each aspirating psychrometer. In order to proportionately divide the flow stream for multiple air sampling devices for a given aspirating psychrometer, the tubing or conduit conveying sampled air to the psychrometer shall be of equivalent lengths for each air sampling device. Preferentially, the air sampling device should be hard connected to the aspirating psychrometer, but if space constraints do not allow this, the assembly shall have a means of allowing a flexible tube to connect the air sampling device to the aspirating psychrometer. The tubing or conduit shall be insulated and routed to prevent heat transfer to the air stream. Any surface of the air conveying tubing in contact with surrounding air at a different temperature than the sampled air shall be insulated with thermal insulation with a nominal thermal resistance (R-value) of at least 19 hr · ft^2 · °F/Btu. Alternatively the conduit may have lower thermal resistance if additional sensor(s) are used to measure dry bulb temperature at the outlet of each air sampling device. No part of the air sampling device or the tubing conducting the sampled air to the sensors shall be within two inches of the test chamber floor.

Pairs of measurements (*e.g.,* dry bulb temperature and wet bulb temperature) used to determine water vapor content of sampled air shall be measured in the same location.

2.12 Measurement of Indoor Blower Speed

When required, measure fan speed using a revolution counter, tachometer, or stroboscope that gives readings accurate to within ±1.0 percent.

2.13 Measurement of Barometric Pressure

Determine the average barometric pressure during each test. Use an instrument that meets the requirements specified in section 5.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3).

2.14 Air Sampling Device and Aspirating Psycrhometer Requirements

Air temperature measurements shall be made in accordance with ANSI/ASHRAE 41.1–2013, unless otherwise instructed in this section.

2.14.1 Air Sampling Device Requirements

The air sampling device is intended to draw in a sample of the air at the critical locations of a unit under test. It shall be constructed of stainless steel, plastic or other suitable, durable materials. It shall have a main flow trunk tube with a series of branch tubes connected to the trunk tube. Holes shall be on the side of the sampler facing the upstream direction of the air source. Other sizes and rectangular shapes can be used, and shall be scaled accordingly with the following guidelines:

(1) Minimum hole density of 6 holes per square foot of area to be sampled

(2) Sampler branch tube pitch (spacing) of 6 ± 3 in

(3) Manifold trunk to branch diameter ratio having a minimum of 3:1 ratio

(4) Hole pitch (spacing) shall be equally distributed over the branch (½ pitch from the closed end to the nearest hole)

(5) Maximum individual hole to branch diameter ratio of 1:2 (1:3 preferred)

The minimum average velocity through the air sampling device holes shall be 2.5 ft/s as determined by evaluating the sum of the open area of the holes as compared to the flow area in the aspirating psychrometer.

2.14.2 Aspirating Psychrometer

The psychrometer consists of a flow section and a fan to draw air through the flow section and measures an average value of the sampled air stream. At a minimum, the flow section shall have a means for measuring the dry bulb temperature (typically, a resistance temperature device (RTD) and a means for measuring the humidity (RTD with wetted sock, chilled mirror hygrometer, or relative humidity sensor). The aspirating psychrometer shall include a fan that either can be adjusted manually or automatically to maintain required velocity across the sensors.

The psychrometer shall be made from suitable material which may be plastic (such as polycarbonate), aluminum or other metallic materials. All psychrometers for a given system being tested, shall be constructed of the same material. Psychrometers shall be designed such that radiant heat from the motor (for driving the fan that draws sampled air through the psychrometer) does not affect sensor measurements. For aspirating psychrometers, velocity across the wet bulb sensor shall be 1000 ± 200 ft/min. For all other psychrometers, velocity shall be as specified by the sensor manufacturer.

3. Testing Procedures

3.1 General Requirements

If, during the testing process, an equipment set-up adjustment is made that would have altered the performance of the unit during any already completed test, then repeat all tests affected by the adjustment. For cyclic tests, instead of maintaining an air volume rate, for each airflow nozzle, maintain the static pressure difference or velocity pressure during an ON period at the same pressure difference or velocity pressure as measured during the steady-state test conducted at the same test conditions.

Use the testing procedures in this section to collect the data used for calculating

(1) Performance metrics for central air conditioners and heat pumps during the cooling season;

(2) Performance metrics for heat pumps during the heating season; and

(3) Power consumption metric(s) for central air conditioners and heat pumps during the off mode season(s).

3.1.1 Primary and Secondary Test Methods

For all tests, use the indoor air enthalpy method test apparatus to determine the unit's space conditioning capacity. The procedure and data collected, however, differ slightly depending upon whether the test is a steady-state test, a cyclic test, or a frost accumulation test. The following sections described these differences. For the full-capacity cooling-mode test and (for a heat pump) the full-capacity heating-mode test, use one of the acceptable secondary methods specified in section 2.10 of this appendix to determine indoor space conditioning capacity. Calculate this secondary check of capacity according to section 3.11 of this appendix. The two capacity measurements must agree to within 6 percent to constitute a valid test. For this capacity comparison, use the Indoor Air Enthalpy Method capacity that is calculated in section 7.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) (and, if testing a coil-only system, compare capacities before making the after-test fan heat adjustments described in section 3.3, 3.4, 3.7, and 3.10 of this appendix). However, include the appropriate section 3.3 to 3.5 and 3.7 to 3.10 fan heat adjustments within the indoor air enthalpy method capacities used for the section 4 seasonal calculations of this appendix.

3.1.2 Manufacturer-Provided Equipment Overrides

Where needed, the manufacturer must provide a means for overriding the controls of the test unit so that the compressor(s) operates at the specified speed or capacity and the indoor blower operates at the specified speed or delivers the specified air volume rate.

3.1.3 Airflow Through the Outdoor Coil

For all tests, meet the requirements given in section 6.1.3.4 of AHRI 210/240–2008 (incorporated by reference, see § 430.3) when obtaining the airflow through the outdoor coil.

3.1.3.1 Double-Ducted

For products intended to be installed with the outdoor airflow ducted, the unit shall be installed with outdoor coil ductwork installed per manufacturer installation instructions and shall operate between 0.10 and 0.15 in H_2O external static pressure. External static pressure measurements shall be made in accordance with ANSI/ASHRAE 37–2009 section 6.4 and 6.5.

3.1.4 Airflow Through the Indoor Coil

Airflow setting(s) shall be determined before testing begins. Unless otherwise specified within this or its subsections, no changes shall be made to the airflow setting(s) after initiation of testing.

3.1.4.1 Cooling Full-Load Air Volume Rate

3.1.4.1.1. Cooling Full-Load Air Volume Rate for Ducted Units

Identify the certified cooling full-load air volume rate and certified instructions for setting fan speed or controls. If there is no certified Cooling full-load air volume rate, use a value equal to the certified cooling capacity of the unit times 400 scfm per 12,000 Btu/h. If there are no instructions for setting fan speed or controls, use the as-shipped settings. Use the following procedure to confirm and, if necessary, adjust the Cooling full-load air volume rate and the fan speed or control settings to meet each test procedure requirement:

a. For all ducted blower coil systems, except those having a constant-air-volume-rate indoor blower:

Step (1) Operate the unit under conditions specified for the A (for single-stage units) or A_2 test using the certified fan speed or controls settings, and adjust the exhaust fan of the airflow measuring apparatus to achieve the certified Cooling full-load air volume rate;

Step (2) Measure the external static pressure;

Step (3) If this external static pressure is equal to or greater than the applicable minimum external static pressure cited in Table 4, the pressure requirement is satisfied; proceed to step 7 of this section. If this external static pressure is not equal to or greater than the applicable minimum external static pressure cited in Table 4, proceed to step 4 of this section;

Step (4) Increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until either

(i) The applicable Table 4 minimum is equaled or

(ii) The measured air volume rate equals 90 percent or less of the Cooling full-load air volume rate, whichever occurs first;

Step (5) If the conditions of step 4 (i) of this section occur first, the pressure requirement is satisfied; proceed to step 7 of this section. If the conditions of step 4 (ii) of this section occur first, proceed to step 6 of this section;

Step (6) Make an incremental change to the setup of the indoor blower (*e.g.*, next highest fan motor pin setting, next highest fan motor speed) and repeat the evaluation process beginning above, at step 1 of this section. If the indoor blower setup cannot be further changed, increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until the applicable Table 4 minimum is equaled; proceed to step 7 of this section;

Step (7) The airflow constraints have been satisfied. Use the measured air volume rate as the Cooling full-load air volume rate. Use the final fan speed or control settings for all tests that use the Cooling full-load air volume rate.

b. For ducted blower coil systems with a constant-air-volume-rate indoor blower. For all tests that specify the Cooling full-load air volume rate, obtain an external static pressure as close to (but not less than) the applicable Table 4 value that does not cause automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined as follows, greater than 10 percent.

$$Q_{Var} = \left[\frac{Q_{max} - Q_{min}}{\left(\frac{Q_{max} + Q_{min}}{2}\right)}\right] * 100$$

where:

Q_{max} = maximum measured airflow value

Q_{min} = minimum measured airflow value

Q_{Var} = airflow variance, percent

Additional test steps as described in section 3.3.(e) of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For coil-only indoor units. For the A or A_2 Test, (exclusively), the pressure drop across the indoor coil assembly must not exceed 0.30 inches of water. If this pressure drop is exceeded, reduce the air volume rate until the measured pressure drop equals the specified maximum. Use this reduced air volume rate for all tests that require the Cooling full-load air volume rate.

TABLE 4—MINIMUM EXTERNAL STATIC PRESSURE FOR DUCTED BLOWER COIL SYSTEMS

Rated Cooling [1] or Heating [2] Capacity (Btu/h)	Minimum external resistance [3] (Inches of water)	
	Small-duct, high-velocity systems [4] [5]	All other systems
Up Thru 28,800	1.10	0.10
29,000 to 42,500	1.15	0.15
43,000 and Above	1.20	0.20

[1] For air conditioners and air-conditioning heat pumps, the value certified by the manufacturer for the unit's cooling capacity when operated at the *A* or A_2 Test conditions.

[2] For heating-only heat pumps, the value certified by the manufacturer for the unit's heating capacity when operated at the *H1* or $H1_2$ Test conditions.

[3] For ducted units tested without an air filter installed, increase the applicable tabular value by 0.08 inches of water.

[4] See section 1.2 of this appendix, Definitions, to determine if the equipment qualifies as a small-duct, high-velocity system.

[5] If a closed-loop, air-enthalpy test apparatus is used on the indoor side, limit the resistance to airflow on the inlet side of the blower coil indoor unit to a maximum value of 0.1 inch of water. Impose the balance of the airflow resistance on the outlet side of the indoor blower.

d. For ducted systems having multiple indoor blowers within a single indoor section, obtain the full-load air volume rate with all indoor blowers operating unless prevented by the controls of the unit. In such cases, turn on the maximum number of indoor blowers permitted by the unit's controls. Where more than one option exists for meeting this ''on'' indoor blower requirement, which indoor blower(s) are turned on must match that specified in the certification report. Conduct section 3.1.4.1.1 setup steps for each indoor blower separately. If two or more indoor blowers are connected to a common duct as per section 2.4.1 of this appendix, temporarily divert their air volume to the test room when confirming or adjusting the setup configuration of individual indoor blowers. The allocation of the system's full-load air volume rate assigned to each ''on'' indoor blower must match that specified by the manufacturer in the certification report.

3.1.4.1.2. Cooling Full-Load Air Volume Rate for Non-Ducted Units

For non-ducted units, the Cooling full-load air volume rate is the air volume rate that results during each test when the unit is operated at an external static pressure of zero inches of water.

3.1.4.2 Cooling Minimum Air Volume Rate

Identify the certified cooling minimum air volume rate and certified instructions for setting fan speed or controls. If there is no certified cooling minimum air volume rate, use the final indoor blower control settings as determined when setting the cooling full-load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full load air volume obtained in section 3.1.4.1 of this appendix. Otherwise, calculate the target external static pressure and follow instructions a, b, c, d, or e below. The target external static pressure, ΔP_{st_i}, for any test ''i'' with a specified air volume rate not equal to the Cooling full-load air volume rate is determined as follows:

$$\Delta P_{st_i} = \Delta P_{st_full}\left[\frac{Q_i}{Q_{full}}\right]^2$$

where:

ΔP_{st_i} = target minimum external static pressure for test i;

ΔP_{st_full} = minimum external static pressure for test A or A_2 (Table 4);

Q_i = air volume rate for test i; and

Q_{full} = Cooling full-load air volume rate as measured after setting and/or adjustment as described in section 3.1.4.1.1 of this appendix.

a. For a ducted blower coil system without a constant-air-volume indoor blower, adjust for external static pressure as follows:

Step (1) Operate the unit under conditions specified for the B1 test using the certified fan speed or controls settings, and adjust the exhaust fan of the airflow measuring apparatus to achieve the certified cooling minimum air volume rate;

Step (2) Measure the external static pressure;

Step (3) If this pressure is equal to or greater than the minimum external static pressure computed above, the pressure requirement is satisfied; proceed to step 7 of this section. If this pressure is not equal to or greater than the minimum external static pressure computed above, proceed to step 4 of this section;

Step (4) Increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until either

(i) The pressure is equal to the minimum external static pressure computed above or

(ii) The measured air volume rate equals 90 percent or less of the cooling minimum air volume rate, whichever occurs first;

Step (5) If the conditions of step 4 (i) of this section occur first, the pressure requirement is satisfied; proceed to step 7 of this section. If the conditions of step 4 (ii) of this section occur first, proceed to step 6 of this section;

Step (6) Make an incremental change to the setup of the indoor blower (*e.g.,* next highest fan motor pin setting, next highest fan motor speed) and repeat the evaluation process beginning above, at step 1 of this section. If the indoor blower setup cannot be further changed, increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until it equals the minimum external static pressure computed above; proceed to step 7 of this section;

Step (7) The airflow constraints have been satisfied. Use the measured air volume rate as the cooling minimum air volume rate. Use the final fan speed or control settings for all tests that use the cooling minimum air volume rate.

b. For ducted units with constant-air-volume indoor blowers, conduct all tests that specify the cooling minimum air volume rate—(*i.e.*, the A_1, B_1, C_1, F_1, and G_1 Tests)—at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.3(e) of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For ducted two-capacity coil-only systems, the cooling minimum air volume rate is the higher of (1) the rate specified by the installation instructions included with the unit by the manufacturer or (2) 75 percent of the cooling full-load air volume rate. During the laboratory tests on a coil-only (fanless) system, obtain this cooling minimum air volume rate regardless of the pressure drop across the indoor coil assembly.

d. For non-ducted units, the cooling minimum air volume rate is the air volume rate that results during each test when the unit operates at an external static pressure of zero inches of water and at the indoor blower setting used at low compressor capacity (two-capacity system) or minimum compressor speed (variable-speed system). For units having a single-speed compressor and a variable-speed variable-air-volume-rate indoor blower, use the lowest fan setting allowed for cooling.

e. For ducted systems having multiple indoor blowers within a single indoor section, operate the indoor blowers such that the lowest air volume rate allowed by the unit's controls is obtained when operating the lone single-speed compressor or when operating at low compressor capacity while meeting the requirements of section 2.2.3.b of this appendix for the minimum number of blowers that must be turned off. Using the target external static pressure and the certified air volume rates, follow the procedures described in section 3.1.4.2.a of this appendix if the indoor blowers are not constant-air-volume indoor blowers or as described in section 3.1.4.2.b of this appendix if the indoor blowers are constant-air-volume indoor blowers. The sum of the individual ''on'' indoor blowers' air volume rates is the cooling minimum air volume rate for the system.

3.1.4.3 Cooling Intermediate Air Volume Rate

Identify the certified cooling intermediate air volume rate and certified instructions for setting fan speed or controls. If there is no certified cooling intermediate air volume rate, use the final indoor blower control settings as determined when setting the cooling full load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full load air volume obtained in section 3.1.4.1 of this appendix. Otherwise, calculate target minimum external static pressure as described in section 3.1.4.2 of this appendix, and set the air volume rate as follows.

a. For a ducted blower coil system without a constant-air-volume indoor blower, adjust for external static pressure as described in section 3.1.4.2.a of this appendix for cooling minimum air volume rate.

b. For a ducted blower coil system with a constant-air-volume indoor blower, conduct the E_V Test at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.3(e) of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For non-ducted units, the cooling intermediate air volume rate is the air volume rate that results when the unit operates at an external static pressure of zero inches of water and at the fan speed selected by the controls of the unit for the E_V Test conditions.

3.1.4.4 Heating Full-Load Air Volume Rate

3.1.4.4.1. Ducted Heat Pumps Where the Heating and Cooling Full-Load Air Volume Rates Are the Same

a. Use the Cooling full-load air volume rate as the heating full-load air volume rate for:

(1) Ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, and that operate at the same airflow-control setting during both the A (or A_2) and the H1 (or $H1_2$) Tests;

(2) Ducted blower coil system heat pumps with constant-air-flow indoor blowers that provide the same air flow for the A (or A_2) and the H1 (or $H1_2$) Tests; and

(3) Ducted heat pumps that are tested with a coil-only indoor unit (except two-capacity northern heat pumps that are tested only at low capacity cooling—see section 3.1.4.4.2 of this appendix).

b. For heat pumps that meet the above criteria ''1'' and ''3,'' no minimum requirements apply to the measured external or internal, respectively, static pressure. Use the final indoor blower control settings as determined when setting the Cooling full-load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full-load air volume obtained in section 3.1.4.1 of this appendix. For heat pumps that meet the above criterion ''2,'' test at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than, the same Table 4 minimum external static pressure as was specified for the A (or A_2) cooling mode test. Additional test steps as described in section 3.9.1(c) of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

3.1.4.4.2. Ducted Heat Pumps Where the Heating and Cooling Full-Load Air Volume Rates Are Different Due to Changes in Indoor Blower Operation, *i.e.* Speed Adjustment by the System Controls

Identify the certified heating full-load air volume rate and certified instructions for setting fan speed or controls. If there is no certified heating full-load air volume rate, use the final indoor blower control settings as determined when setting the cooling full-load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full load air volume obtained in section 3.1.4.1 of this appendix. Otherwise, calculate target minimum external static pressure as described in section 3.1.4.2 of this appendix and set the air volume rate as follows.

a. For ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, adjust for external static pressure as described in section 3.1.4.2.a of this appendix for cooling minimum air volume rate.

b. For ducted heat pumps tested with constant-air-volume indoor blowers installed, conduct all tests that specify the heating full-

load air volume rate at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.9.1(c) of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. When testing ducted, two-capacity blower coil system northern heat pumps (see section 1.2 of this appendix, Definitions), use the appropriate approach of the above two cases. For coil-only system northern heat pumps, the heating full-load air volume rate is the lesser of the rate specified by the manufacturer in the installation instructions included with the unit or 133 percent of the cooling full-load air volume rate. For this latter case, obtain the heating full-load air volume rate regardless of the pressure drop across the indoor coil assembly.

d. For ducted systems having multiple indoor blowers within a single indoor section, obtain the heating full-load air volume rate using the same ''on'' indoor blowers as used for the Cooling full-load air volume rate. Using the target external static pressure and the certified air volume rates, follow the procedures as described in section 3.1.4.4.2.a of this appendix if the indoor blowers are not constant-air-volume indoor blowers or as described in section 3.1.4.4.2.b of this appendix if the indoor blowers are constant-air-volume indoor blowers. The sum of the individual ''on'' indoor blowers' air volume rates is the heating full load air volume rate for the system.

3.1.4.4.3. Ducted Heating-Only Heat Pumps

Identify the certified heating full-load air volume rate and certified instructions for setting fan speed or controls. If there is no certified heating full-load air volume rate, use a value equal to the certified heating capacity of the unit times 400 scfm per 12,000 Btu/h. If there are no instructions for setting fan speed or controls, use the as-shipped settings.

a. For all ducted heating-only blower coil system heat pumps, except those having a constant-air-volume-rate indoor blower. Conduct the following steps only during the first test, the H1 or $H1_2$ Test:

Step (1) Adjust the exhaust fan of the airflow measuring apparatus to achieve the certified heating full-load air volume rate.

Step (2) Measure the external static pressure.

Step (3) If this pressure is equal to or greater than the Table 4 minimum external static pressure that applies given the heating-only heat pump's rated heating capacity, the pressure requirement is satisfied; proceed to step 7 of this section. If this pressure is not equal to or greater than the applicable Table 4 minimum external static pressure, proceed to step 4 of this section;

Step (4) Increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until either (i) the pressure is equal to the applicable Table 4 minimum external static pressure or (ii) the measured air volume rate equals 90 percent or less of the heating full-load air volume rate, whichever occurs first;

Step (5) If the conditions of step 4(i) of this section occur first, the pressure requirement is satisfied; proceed to step 7 of this section. If the conditions of step 4(ii) of this section occur first, proceed to step 6 of this section;

Step (6) Make an incremental change to the setup of the indoor blower (*e.g.,* next highest fan motor pin setting, next highest fan motor speed) and repeat the evaluation process beginning above, at step 1 of this section. If the indoor blower setup cannot be further changed, increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until it equals the applicable Table 4 minimum external static pressure; proceed to step 7 of this section;

Step (7) The airflow constraints have been satisfied. Use the measured air volume rate as the heating full-load air volume rate. Use the final fan speed or control settings for all tests that use the heating full-load air volume rate.

b. For ducted heating-only blower coil system heat pumps having a constant-air-volume-rate indoor blower. For all tests that specify the heating full-load air volume rate, obtain an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than, the applicable Table 4 minimum. Additional test steps as described in section 3.9.1(c) of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For ducted heating-only coil-only system heat pumps in the H1 or $H1_2$ Test, (exclusively), the pressure drop across the indoor coil assembly must not exceed 0.30 inches of water. If this pressure drop is exceeded, reduce the air volume rate until the measured pressure drop equals the specified maximum. Use this reduced air volume rate for all tests that require the heating full-load air volume rate.

3.1.4.4.4. Non-Ducted Heat Pumps, Including Non-Ducted Heating-Only Heat Pumps

For non-ducted heat pumps, the heating full-load air volume rate is the air volume rate that results during each test when the unit operates at an external static pressure of zero inches of water.

3.1.4.5 Heating Minimum Air Volume Rate

3.1.4.5.1. Ducted Heat Pumps Where the Heating and Cooling Minimum Air Volume Rates Are the Same

a. Use the cooling minimum air volume rate as the heating minimum air volume rate for:

(1) Ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, and that operate at the same airflow-control setting during both the A_1 and the $H1_1$ tests;

(2) Ducted blower coil system heat pumps with constant-air-flow indoor blowers installed that provide the same air flow for the A_1 and the $H1_1$ Tests; and

(3) Ducted coil-only system heat pumps.

b. For heat pumps that meet the above criteria ''1'' and ''3,'' no minimum requirements apply to the measured external or internal, respectively, static pressure. Use the final indoor blower control settings as determined when setting the cooling minimum air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling minimum air volume rate obtained in section 3.1.4.2 of this appendix. For heat pumps that meet the above criterion ''2,'' test at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than, the same target minimum external static pressure as was specified for the A_1 cooling mode test. Additional test steps as described in section 3.9.1(c) of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

3.1.4.5.2. Ducted Heat Pumps Where the Heating and Cooling Minimum Air Volume Rates Are Different Due to Changes in Indoor Blower Operation, *i.e.* Speed Adjustment by the System Controls

Identify the certified heating minimum air volume rate and certified instructions for setting fan speed or controls. If there is no certified heating minimum air volume rate, use the final indoor blower control settings as determined when setting the cooling minimum air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling minimum air volume obtained in section 3.1.4.2 of this appendix. Otherwise, calculate the target minimum external static pressure as described in section 3.1.4.2 of this appendix.

a. For ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, adjust for external static pressure as described in section 3.1.4.2.a of this appendix for cooling minimum air volume rate.

b. For ducted heat pumps tested with constant-air-volume indoor blowers installed, conduct all tests that specify the heating minimum air volume rate—(*i.e.,* the $H0_1$, $H1_1$, $H2_1$, and $H3_1$ Tests)—at an external static pressure that does not cause an automatic shutdown of the indoor blower while being as close to, but not less than the air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.9.1.c of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For ducted two-capacity blower coil system northern heat pumps, use the appropriate approach of the above two cases.

d. For ducted two-capacity coil-only system heat pumps, use the cooling minimum air volume rate as the heating minimum air volume rate. For ducted two-capacity coil-only system northern heat pumps, use the cooling full-load air volume rate as the heating minimum air volume rate.

For ducted two-capacity heating-only coil-only system heat pumps, the heating minimum air volume rate is the higher of the rate specified by the manufacturer in the test setup instructions included with the unit or 75 percent of the heating full-load air volume rate. During the laboratory tests on a coil-only system, obtain the heating minimum air volume rate without regard to the pressure drop across the indoor coil assembly.

e. For non-ducted heat pumps, the heating minimum air volume rate is the air volume rate that results during each test when the unit operates at an external static pressure of zero inches of water and at the indoor blower setting used at low compressor capacity (two-capacity system) or minimum compressor speed (variable-speed system). For units having a single-speed compressor and a variable-speed, variable-air-volume-rate indoor blower, use the lowest fan setting allowed for heating.

f. For ducted systems with multiple indoor blowers within a single indoor section, obtain the heating minimum air volume rate using the same ''on'' indoor blowers as used for the cooling minimum air volume rate. Using the target external static pressure and the certified air volume rates, follow the procedures as described in section 3.1.4.5.2.a of this appendix if the indoor blowers are not constant-air-volume indoor blowers or as described in section 3.1.4.5.2.b of this appendix if the indoor blowers are constant-air-volume indoor blowers. The sum of the individual ''on'' indoor blowers' air volume rates is the heating full-load air volume rate for the system.

3.1.4.6 Heating Intermediate Air Volume Rate

Identify the certified heating intermediate air volume rate and certified instructions for setting fan speed or controls. If there is no certified heating intermediate air volume rate, use the final indoor blower control settings as determined when setting the heating full-load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full load air volume obtained in section 3.1.4.2 of this appendix. Calculate the target minimum external static pressure as described in section 3.1.4.2 of this appendix.

a. For ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, adjust for external static pressure as described in section 3.1.4.2.a of this appendix for cooling minimum air volume rate.

b. For ducted heat pumps tested with constant-air-volume indoor blowers installed, conduct the $H2_V$ Test at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.9.1(c) of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For non-ducted heat pumps, the heating intermediate air volume rate is the air volume rate that results when the heat pump operates at an external static pressure of zero inches of water and at the fan speed selected by the controls of the unit for the $H2_V$ Test conditions.

3.1.4.7 Heating Nominal Air Volume Rate

The manufacturer must specify the heating nominal air volume rate and the instructions for setting fan speed or controls. Calculate target minimum external static pressure as described in section 3.1.4.2 of this appendix. Make adjustments as described in section 3.1.4.6 of this appendix for heating intermediate air volume rate so that the target minimum external static pressure is met or exceeded.

3.1.5 Indoor Test Room Requirement When the Air Surrounding the Indoor Unit Is Not Supplied From the Same Source as the Air Entering the Indoor Unit

If using a test set-up where air is ducted directly from the air reconditioning apparatus to the indoor coil inlet (see Figure 2, Loop Air-Enthalpy Test Method Arrangement, of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3)), maintain the dry bulb temperature within the test room within ±5.0 °F of the applicable sections 3.2 and 3.6 dry bulb temperature test condition for the air entering the indoor unit. Dew point shall be within 2 °F of the required inlet conditions.

3.1.6 Air Volume Rate Calculations

For all steady-state tests and for frost accumulation ($H2$, $H2_1$, $H2_2$, $H2_V$) tests, calculate the air volume rate through the indoor coil as specified in sections 7.7.2.1 and 7.7.2.2 of ANSI/ASHRAE 37–2009. When using the outdoor air enthalpy method, follow sections 7.7.2.1 and 7.7.2.2 of ANSI/ASHRAE 37–2009 to calculate the air volume rate through the outdoor coil. To express air volume rates in terms of standard air, use:

Equation 3-1

$$\overline{\dot{V}_s} = \frac{\overline{\dot{V}_{mx}}}{0.075\,\frac{lbm_{da}}{ft^3} * v_n' * [1+W_n]} = \frac{\overline{\dot{V}_{mx}}}{0.075\,\frac{lbm_{da}}{ft^3} * v_n}$$

Where:

$\overline{\dot{V}_s}$ = air volume rate of standard (dry) air, $(ft^3/min)_{da}$

$\overline{\dot{V}_{mx}}$ = air volume rate of the air-water vapor mixture, $(ft^3/min)_{mx}$

v_n' = specific volume of air-water vapor mixture at the nozzle, ft^3 per lbm of the air-water vapor mixture

W_n = humidity ratio at the nozzle, lbm of water vapor per lbm of dry air

0.075 = the density associated with standard (dry) air, (lbm/ft^3)

v_n = specific volume of the dry air portion of the mixture evaluated at the dry-bulb temperature, vapor content, and barometric pressure existing at the nozzle, ft^3 per lbm of dry air.

Note: In the first printing of ANSI/ASHRAE 37–2009, the second IP equation for Q_{mi} should read

$$Q_{mi} = 1097 C A_n \sqrt{P_V v_n'}$$

3.1.7 Test Sequence

Before making test measurements used to calculate performance, operate the equipment for the ''break-in'' period specified in the certification report, which may not exceed 20 hours. Each compressor of the unit must undergo this ''break-in'' period. When testing a ducted unit (except if a heating-only heat pump), conduct the A or A_2 Test first to establish the cooling full-load air volume rate. For ducted heat pumps where the heating and cooling full-load air volume rates are different, make the first heating mode test one that requires the heating full-load air volume rate. For ducted heating-only heat pumps, conduct the H1 or $H1_2$ Test first to establish the heating full-load air volume rate. When conducting a cyclic test, always conduct it immediately after the steady-state test that requires the same test conditions. For variable-speed systems, the first test using the cooling minimum air volume rate should precede the E_V Test, and the first test using the heating minimum air volume rate must precede the $H2_V$ Test. The test laboratory makes all other decisions on the test sequence.

3.1.8 Requirement for the Air Temperature Distribution Leaving the Indoor Coil

For at least the first cooling mode test and the first heating mode test, monitor the temperature distribution of the air leaving the indoor coil using the grid of individual sensors described in sections 2.5 and 2.5.4 of this appendix. For the 30-minute data collection interval used to determine capacity, the maximum spread among the outlet dry bulb temperatures from any data sampling must not exceed 1.5 °F. Install the mixing devices described in section 2.5.4.2 of this appendix to minimize the temperature spread.

3.1.9 Requirement for the Air Temperature Distribution Entering the Outdoor Coil

Monitor the temperatures of the air entering the outdoor coil using air sampling devices and/or temperature sensor grids, maintaining the required tolerances, if applicable, as described in section 2.11 of this appendix.

3.1.10 Control of Auxiliary Resistive Heating Elements

Except as noted, disable heat pump resistance elements used for heating indoor air at all times, including during defrost cycles and if they are normally regulated by a heat comfort controller. For heat pumps equipped with a heat comfort controller, enable the heat pump resistance elements only during the below-described, short test. For single-speed heat pumps covered under section 3.6.1 of this appendix, the short test follows the H1 or, if conducted, the H1C Test. For two-capacity heat pumps and heat pumps covered under section 3.6.2 of this appendix, the short test follows the $H1_2$ Test. Set the heat comfort controller to provide the maximum supply air temperature. With the heat pump operating and while maintaining the heating full-load air volume rate, measure the temperature of the air leaving the indoor-side beginning 5 minutes after activating the heat comfort controller. Sample the outlet dry-bulb temperature at regular intervals that span 5 minutes or less. Collect data for 10 minutes, obtaining at least 3 samples. Calculate the average outlet temperature over the 10-minute interval, T_{CC}.

3.2 Cooling Mode Tests for Different Types of Air Conditioners and Heat Pumps

3.2.1 Tests for a System Having a Single-Speed Compressor and Fixed Cooling Air Volume Rate

This set of tests is for single-speed-compressor units that do not have a cooling minimum air volume rate or a cooling intermediate air volume rate that is different than the cooling full load air volume rate. Conduct two steady-state wet coil tests, the A and B Tests. Use the two optional dry-coil tests, the steady-state C Test and the cyclic D Test, to determine the cooling mode cyclic degradation coefficient, $C_D{}^c$. If the two optional tests are conducted but yield a tested $C_D{}^c$ that exceeds the default $C_D{}^c$ or if the two optional tests are not conducted, assign $C_D{}^c$ the default value of 0.25 (for outdoor units with no match) or 0.20 (for all other systems). Table 5 specifies test conditions for these four tests.

TABLE 5—COOLING MODE TEST CONDITIONS FOR UNITS HAVING A SINGLE-SPEED COMPRESSOR AND A FIXED COOLING AIR VOLUME RATE

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Cooling air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
A Test—required (steady, wet coil)	80	67	95	[1] 75	Cooling full-load.[2]
B Test—required (steady, wet coil)	80	67	82	[1] 65	Cooling full-load.[2]
C Test—optional (steady, dry coil)	80	([3])	82		Cooling full-load.[2]
D Test—optional (cyclic, dry coil)	80	([3])	82		([4]).

[1] The specified test condition only applies if the unit rejects condensate to the outdoor coil.
[2] Defined in section 3.1.4.1 of this appendix.
[3] The entering air must have a low enough moisture content so no condensate forms on the indoor coil. (It is recommended that an indoor wet-bulb temperature of 57 °F or less be used.)
[4] Maintain the airflow nozzles static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the C Test.

3.2.2 Tests for a Unit Having a Single-Speed Compressor Where the Indoor Section Uses a Single Variable-Speed Variable-Air-Volume Rate Indoor Blower or Multiple Indoor Blowers

3.2.2.1 Indoor Blower Capacity Modulation That Correlates With the Outdoor Dry Bulb Temperature or Systems With a Single Indoor Coil but Multiple Indoor Blowers

Conduct four steady-state wet coil tests: The A_2, A_1, B_2, and B_1 tests. Use the two optional dry-coil tests, the steady-state C_1 test and the cyclic D_1 test, to determine the cooling mode cyclic degradation coefficient, $C_D{}^c$. If the two optional tests are conducted but yield a tested C_DC that exceeds the default C_DC or if the two optional tests are not conducted, assign C_DC the default value of 0.20.

3.2.2.2 Indoor Blower Capacity Modulation Based on Adjusting the Sensible to Total (S/T) Cooling Capacity Ratio

The testing requirements are the same as specified in section 3.2.1 of this appendix and Table 5. Use a cooling full-load air volume rate that represents a normal installation. If performed, conduct the steady-state C Test and the cyclic D Test with the unit operating in the same S/T capacity control mode as used for the B Test.

TABLE 6—COOLING MODE TEST CONDITIONS FOR UNITS WITH A SINGLE-SPEED COMPRESSOR THAT MEET THE SECTION 3.2.2.1 INDOOR UNIT REQUIREMENTS

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Cooling air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
A_2 Test—required (steady, wet coil)	80	67	95	[1] 75	Cooling full-load.[2]
A_1 Test—required (steady, wet coil)	80	67	95	[1] 75	Cooling minimum.[3]
B_2 Test—required (steady, wet coil)	80	67	82	[1] 65	Cooling full-load.[2]
B_1 Test—required (steady, wet coil)	80	67	82	[1] 65	Cooling minimum.[3]
C_1 Test [4]—optional (steady, dry coil)	80	([4])	82		Cooling minimum.[3]
D_1 Test [4]—optional (cyclic, dry coil)	80	([4])	82		([5]).

[1] The specified test condition only applies if the unit rejects condensate to the outdoor coil.
[2] Defined in section 3.1.4.1 of this appendix.
[3] Defined in section 3.1.4.2 of this appendix.
[4] The entering air must have a low enough moisture content so no condensate forms on the indoor coil. (It is recommended that an indoor wet-bulb temperature of 5 °F or less be used.)
[5] Maintain the airflow nozzles static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the C_1 Test.

3.2.3 Tests for a Unit Having a Two-Capacity Compressor (See Section 1.2 of This Appendix, Definitions)

a. Conduct four steady-state wet coil tests: the A_2, B_2, B_1, and F_1 Tests. Use the two optional dry-coil tests, the steady-state C_1 Test and the cyclic D_1 Test, to determine the cooling-mode cyclic-degradation coefficient, $C_D{}^c$. If the two optional tests are conducted but yield a tested C_DC that exceeds the default C_DC or if the two optional tests are not conducted, assign C_DC the default value of 0.20. Table 6 specifies test conditions for these six tests.

b. For units having a variable speed indoor blower that is modulated to adjust the sensible to total (S/T) cooling capacity ratio, use cooling full-load and cooling minimum air volume rates that represent a normal installation. Additionally, if conducting the dry-coil tests, operate the unit in the same S/T capacity control mode as used for the B_1 Test.

c. Test two-capacity, northern heat pumps (see section 1.2 of this appendix, Definitions) in the same way as a single speed heat pump with the unit operating exclusively at low compressor capacity (see section 3.2.1 of this appendix and Table 5).

d. If a two-capacity air conditioner or heat pump locks out low-capacity operation at higher outdoor temperatures, then use the two dry-coil tests, the steady-state C_2 Test and the cyclic D_2 Test, to determine the cooling-mode cyclic-degradation coefficient that only applies to on/off cycling from high capacity, $C_D{}^c(k=2)$. If the two optional tests are conducted but yield a tested CD^c (k = 2) that exceeds the default CD^c (k = 2) or if the two optional tests are not conducted, assign CD^c (k = 2) the default value. The default $C_D{}^c(k=2)$ is the same value as determined or assigned for the low-capacity cyclic-degradation coefficient, $C_D{}^c$ [or equivalently, $C_D{}^c(k=1)$].

TABLE 7—COOLING MODE TEST CONDITIONS FOR UNITS HAVING A TWO-CAPACITY COMPRESSOR

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Compressor capacity	Cooling air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
A_2 Test—required (steady, wet coil).	80	67	95	[1] 75	High	Cooling Full-Load.[2]
B_2 Test—required (steady, wet coil).	80	67	82	[1] 65	High	Cooling Full-Load.[2]
B_1 Test—required (steady, wet coil).	80	67	82	[1] 65	Low	Cooling Minimum.[3]
C_2 Test—optional (steady, dry-coil).	80	([4])	82	.....	High	Cooling Full-Load.[2]
D_2 Test—optional (cyclic, dry-coil).	80	([4])	82	.....	High	([5]).
C_1 Test—optional (steady, dry-coil).	80	([4])	82	.....	Low	Cooling Minimum.[3]
D_1 Test—optional (cyclic, dry-coil).	80	([4])	82	.....	Low	([6]).
F_1 Test—required (steady, wet coil).	80	67	67	[1] 53.5	Low	Cooling Minimum.[3]

[1] The specified test condition only applies if the unit rejects condensate to the outdoor coil.
[2] Defined in section 3.1.4.1 of this appendix.
[3] Defined in section 3.1.4.2 of this appendix.
[4] The entering air must have a low enough moisture content so no condensate forms on the indoor coil. DOE recommends using an indoor air wet-bulb temperature of 57 °F or less.
[5] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the C_2 Test.
[6] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the C_1 Test.

3.2.4 Tests for a Unit Having a Variable-Speed Compressor

a. Conduct five steady-state wet coil tests: The A_2, E_V, B_2, B_1, and F_1 Tests. Use the two optional dry-coil tests, the steady-state G_1 Test and the cyclic I_1 Test, to determine the cooling mode cyclic degradation coefficient, $C_D{}^c$. If the two optional tests are conducted but yield a tested C_DC that exceeds the default C_DC or if the two optional tests are not conducted, assign C_DC the default value of 0.25. Table 8 specifies test conditions for these seven tests. The compressor shall operate at the same cooling full speed, measured by RPM or power input frequency (Hz), for both the A_2 and B_2 tests. The compressor shall operate at the same cooling minimum speed, measured by RPM or power input frequency (Hz), for the B_1, F_1, G_1, and I_1 tests. Determine the cooling intermediate compressor speed cited in Table 8 using:

$$\text{Cooling intermediate speed} = \text{Cooling minimum speed} + \frac{\text{Cooling full speed} - \text{Cooling minimum speed}}{3}$$

where a tolerance of plus 5 percent or the next higher inverter frequency step from that calculated is allowed.

b. For units that modulate the indoor blower speed to adjust the sensible to total (S/T) cooling capacity ratio, use cooling full-load, cooling intermediate, and cooling minimum air volume rates that represent a normal installation. Additionally, if conducting the dry-coil tests, operate the unit in the same S/T capacity control mode as used for the F_1 Test.

c. For multiple-split air conditioners and heat pumps (except where noted), the following procedures supersede the above requirements: For all Table 8 tests specified for a minimum compressor speed, at least one indoor unit must be turned off. The manufacturer shall designate the particular indoor unit(s) that is turned off. The manufacturer must also specify the compressor speed used for the Table 8 E_V Test, a cooling-mode intermediate compressor speed that falls within ¼ and ¾ of the difference between the full and minimum cooling-mode speeds. The manufacturer should prescribe an intermediate speed that is expected to yield the highest EER for the given E_V Test conditions and bracketed compressor speed range. The manufacturer can designate that

one or more indoor units are turned off for the E_V Test.

TABLE 8—COOLING MODE TEST CONDITION FOR UNITS HAVING A VARIABLE-SPEED COMPRESSOR

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Compressor speed	Cooling air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
A_2 Test—required (steady, wet coil).	80	67	95	[1] 75	Cooling Full	Cooling Full-Load.[2]
B_2 Test—required (steady, wet coil).	80	67	82	[1] 65	Cooling Full	Cooling Full-Load.[2]
E_V Test—required (steady, wet coil).	80	67	87	[1] 69	Cooling Intermediate	Cooling Intermediate.[3]
B_1 Test—required (steady, wet coil).	80	67	82	[1] 65	Cooling Minimum	Cooling Minimum.[4]
F_1 Test—required (steady, wet coil).	80	67	67	[1] 53.5	Cooling Minimum	Cooling Minimum.[4]
G_1 Test [5]—optional (steady, dry-coil).	80	([6])	67	.....	Cooling Minimum	Cooling Minimum.[4]
I_1 Test [5]—optional (cyclic, dry-coil).	80	([6])	67	.....	Cooling Minimum	([6]).

[1] The specified test condition only applies if the unit rejects condensate to the outdoor coil.
[2] Defined in section 3.1.4.1 of this appendix.
[3] Defined in section 3.1.4.3 of this appendix.
[4] Defined in section 3.1.4.2 of this appendix.
[5] The entering air must have a low enough moisture content so no condensate forms on the indoor coil. DOE recommends using an indoor air wet bulb temperature of 57 °F or less.
[6] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the G_1 Test.

3.2.5 Cooling Mode Tests for Northern Heat Pumps With Triple-Capacity Compressors

Test triple-capacity, northern heat pumps for the cooling mode in the same way as specified in section 3.2.3 of this appendix for units having a two-capacity compressor.

3.2.6 Tests for an Air Conditioner or Heat Pump Having a Single Indoor Unit Having Multiple Indoor Blowers and Offering Two Stages of Compressor Modulation

Conduct the cooling mode tests specified in section 3.2.3 of this appendix.

3.3 Test Procedures for Steady-State Wet Coil Cooling Mode Tests (the A, A_2, A_1, B, B_2, B_1, E_V, and F_1 Tests)

a. For the pretest interval, operate the test room reconditioning apparatus and the unit to be tested until maintaining equilibrium conditions for at least 30 minutes at the specified section 3.2 test conditions. Use the exhaust fan of the airflow measuring apparatus and, if installed, the indoor blower of the test unit to obtain and then maintain the indoor air volume rate and/or external static pressure specified for the particular test. Continuously record (see section 1.2 of this appendix, Definitions):

(1) The dry-bulb temperature of the air entering the indoor coil,

(2) The water vapor content of the air entering the indoor coil,

(3) The dry-bulb temperature of the air entering the outdoor coil, and

(4) For the section 2.2.4 of this appendix cases where its control is required, the water vapor content of the air entering the outdoor coil.

Refer to section 3.11 of this appendix for additional requirements that depend on the selected secondary test method.

b. After satisfying the pretest equilibrium requirements, make the measurements specified in Table 3 of ANSI/ASHRAE 37–2009 for the indoor air enthalpy method and the user-selected secondary method. Make said Table 3 measurements at equal intervals that span 5 minutes or less. Continue data sampling until reaching a 30-minute period (*e.g.,* seven consecutive 5-minute samples) where the test tolerances specified in Table 9 are satisfied. For those continuously recorded parameters, use the entire data set from the 30-minute interval to evaluate Table 9 compliance. Determine the average electrical power consumption of the air conditioner or heat pump over the same 30-minute interval.

c. Calculate indoor-side total cooling capacity and sensible cooling capacity as specified in sections 7.3.3.1 and 7.3.3.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). To calculate capacity, use the averages of the measurements (*e.g.* inlet and outlet dry bulb and wet bulb temperatures measured at the psychrometers) that are continuously recorded for the same 30-minute interval used as described above to evaluate compliance with test tolerances. Do not adjust the parameters used in calculating capacity for the permitted variations in test conditions. Evaluate air enthalpies based on the measured barometric pressure. Use the values of the specific heat of air given in section 7.3.3.1 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) for calculation of the sensible cooling capacities. Assign the average total space cooling capacity, average sensible cooling capacity, and electrical power consumption over the 30-minute data collection interval to the variables $\dot{Q}_c^k(T)$, $\dot{Q}_{sc}^k(T)$ and $\dot{E}_c^k(T)$, respectively. For these three variables, replace the ''T'' with the nominal outdoor temperature at which the test was conducted. The superscript k is used only when testing multi-capacity units.

Use the superscript k=2 to denote a test with the unit operating at high capacity or full speed, k=1 to denote low capacity or minimum speed, and k=v to denote the intermediate speed.

d. For coil-only system tests, decrease $\dot{Q}_c^k(T)$ by

$$\frac{1250\ Btu/h}{1000\ scfm} * \overline{\dot{V}_s}$$

and increase $\dot{E}_c^k(T)$ by,

$$\frac{365\ W}{1000\ scfm} * \overline{\dot{V}_s}$$

where $\overline{\dot{V}_s}$ is the average measured indoor air volume rate expressed in units of cubic feet per minute of standard air (scfm).

TABLE 9—TEST OPERATING AND TEST CONDITION TOLERANCES FOR SECTION 3.3 STEADY-STATE WET COIL COOLING MODE TESTS AND SECTION 3.4 DRY COIL COOLING MODE TESTS

	Test operating tolerance [1]	Test condition tolerance [1]
Indoor dry-bulb, °F		
Entering temperature	2.0	0.5
Leaving temperature	2.0	.....
Indoor wet-bulb, °F		
Entering temperature	1.0	[2] 0.3
Leaving temperature	[2] 1.0	.....
Outdoor dry-bulb, °F		
Entering temperature	2.0	0.5
Leaving temperature	[3] 2.0	.....
Outdoor wet-bulb, °F		
Entering temperature	1.0	[4] 0.3
Leaving temperature	[3] 1.0	.....
External resistance to airflow, inches of water	0.05	[5] 0.02
Electrical voltage, % of rdg.	2.0	1.5
Nozzle pressure drop, % of rdg.	2.0	.....

[1] See section 1.2 of this appendix, Definitions.
[2] Only applies during wet coil tests; does not apply during steady-state, dry coil cooling mode tests.
[3] Only applies when using the outdoor air enthalpy method.
[4] Only applies during wet coil cooling mode tests where the unit rejects condensate to the outdoor coil.
[5] Only applies when testing non-ducted units.

e. For air conditioners and heat pumps having a constant-air-volume-rate indoor blower, the five additional steps listed below are required if the average of the measured external static pressures exceeds the applicable sections 3.1.4 minimum (or target) external static pressure (ΔP_{min}) by 0.03 inches of water or more.

(1) Measure the average power consumption of the indoor blower motor ($\dot{E}_{fan,1}$) and record the corresponding external static pressure (ΔP_1) during or immediately following the 30-minute interval used for determining capacity.

(2) After completing the 30-minute interval and while maintaining the same test conditions, adjust the exhaust fan of the airflow measuring apparatus until the external static pressure increases to approximately $\Delta P_1 + (\Delta P_1 - \Delta P_{min})$.

(3) After re-establishing steady readings of the fan motor power and external static pressure, determine average values for the indoor blower power ($\dot{E}_{fan,2}$) and the external static pressure (ΔP_2) by making measurements over a 5-minute interval.

(4) Approximate the average power consumption of the indoor blower motor at ΔP_{min} using linear extrapolation:

$$\dot{E}_{fan,\min} = \frac{\dot{E}_{fan,2} - \dot{E}_{fan,1}}{\Delta P_2 - \Delta P_1}(\Delta P_{\min} - \Delta P_1) + \dot{E}_{fan,1}$$

(5) Increase the total space cooling capacity, $\dot{Q}_c^k(T)$, by the quantity ($\dot{E}_{fan,1} - \dot{E}_{fan,min}$), when expressed on a Btu/h basis. Decrease the total electrical power, $\dot{E}_c^k(T)$, by the same fan power difference, now expressed in watts.

3.4 Test Procedures for the Steady-State Dry-Coil Cooling-Mode Tests (the C, C_1, C_2, and G_1 Tests)

a. Except for the modifications noted in this section, conduct the steady-state dry coil cooling mode tests as specified in section 3.3 of this appendix for wet coil tests. Prior to recording data during the steady-state dry coil test, operate the unit at least one hour after achieving dry coil conditions. Drain the drain pan and plug the drain opening. Thereafter, the drain pan should remain completely dry.

b. Denote the resulting total space cooling capacity and electrical power derived from the test as $\dot{Q}_{ss,dry}$ and $\dot{E}_{ss,dry}$. With regard to a section 3.3 deviation, do not adjust $\dot{Q}_{ss,dry}$ for duct losses (*i.e.,* do not apply section 7.3.3.3 of ANSI/ASHRAE 37–2009). In preparing for the section 3.5 cyclic tests of this appendix, record the average indoor-side air volume rate, $\bar{V}$, specific heat of the air, Cp,a (expressed on dry air basis), specific volume of the air at the nozzles, v'_n, humidity ratio at the nozzles, W_n, and either pressure difference or velocity pressure for the flow nozzles. For units having a variable-speed indoor blower (that provides either a constant or variable air volume rate) that will or may be tested during the cyclic dry coil cooling mode test with the indoor blower turned off (see section 3.5 of this appendix), include the electrical power used by the indoor blower motor among the recorded parameters from the 30-minute test.

c. If the temperature sensors used to provide the primary measurement of the indoor-side dry bulb temperature difference during the steady-state dry-coil test and the subsequent cyclic dry-coil test are different, include measurements of the latter sensors among the regularly sampled data. Beginning at the start of the 30-minute data collection period, measure and compute the indoor-side air dry-bulb temperature difference using both sets of instrumentation, ΔT (Set SS) and ΔT (Set CYC), for each equally spaced data sample. If using a consistent data sampling rate that is less than 1 minute, calculate and record minutely averages for the two temperature differences. If using a consistent sampling rate of one minute or more, calculate and record the two temperature differences from each data sample. After having recorded the seventh (i=7) set of temperature differences, calculate the following ratio using the first seven sets of values:

$$F_{CD} = \frac{1}{7}\sum_{i-6}^{i}\frac{\Delta T(Set\ SS)}{\Delta T(Set\ CYC)}$$

Each time a subsequent set of temperature differences is recorded (if sampling more frequently than every 5 minutes), calculate F_{CD} using the most recent seven sets of values. Continue these calculations until the 30-minute period is completed or until a value for F_{CD} is calculated that falls outside the allowable range of 0.94–1.06. If the latter occurs, immediately suspend the test and identify the cause for the disparity in the two temperature difference measurements. Recalibration of one or both sets of instrumentation may be required. If all the values for F_{CD} are within the allowable range, save the final value of the ratio from the 30-minute test as F_{CD}*. If the temperature sensors used to provide the primary measurement of the indoor-side dry bulb temperature difference during the steady-

state dry-coil test and the subsequent cyclic dry-coil test are the same, set F_{CD}*= 1.

3.5 Test Procedures for the Cyclic Dry-Coil Cooling-Mode Tests (the D, D_1, D_2, and I_1 Tests)

After completing the steady-state dry-coil test, remove the outdoor air enthalpy method test apparatus, if connected, and begin manual OFF/ON cycling of the unit's compressor. The test set-up should otherwise be identical to the set-up used during the steady-state dry coil test. When testing heat pumps, leave the reversing valve during the compressor OFF cycles in the same position as used for the compressor ON cycles, unless automatically changed by the controls of the unit. For units having a variable-speed indoor blower, the manufacturer has the option of electing at the outset whether to conduct the cyclic test with the indoor blower enabled or disabled. Always revert to testing with the indoor blower disabled if cyclic testing with the fan enabled is unsuccessful.

a. For all cyclic tests, the measured capacity must be adjusted for the thermal mass stored in devices and connections located between measured points. Follow the procedure outlined in section 7.4.3.4.5 of ASHRAE 116–2010 (incorporated by reference, see § 430.3) to ensure any required measurements are taken.

b. For units having a single-speed or two-capacity compressor, cycle the compressor OFF for 24 minutes and then ON for 6 minutes ($\Delta\tau_{cyc,dry}$ = 0.5 hours). For units having a variable-speed compressor, cycle the compressor OFF for 48 minutes and then ON for 12 minutes ($\Delta\tau_{cyc,dry}$ = 1.0 hours). Repeat the OFF/ON compressor cycling pattern until the test is completed. Allow the controls of the unit to regulate cycling of the outdoor fan. If an upturned duct is used, measure the dry-bulb temperature at the inlet of the device at least once every minute and ensure that its test operating tolerance is within 1.0 °F for each compressor OFF period.

c. Sections 3.5.1 and 3.5.2 of this appendix specify airflow requirements through the indoor coil of ducted and non-ducted indoor units, respectively. In all cases, use the exhaust fan of the airflow measuring apparatus (covered under section 2.6 of this appendix) along with the indoor blower of the unit, if installed and operating, to approximate a step response in the indoor coil airflow. Regulate the exhaust fan to quickly obtain and then maintain the flow nozzle static pressure difference or velocity pressure at the same value as was measured during the steady-state dry coil test. The pressure difference or velocity pressure should be within 2 percent of the value from the steady-state dry coil test within 15 seconds after airflow initiation. For units having a variable-speed indoor blower that ramps when cycling on and/or off, use the exhaust fan of the airflow measuring apparatus to impose a step response that begins at the initiation of ramp up and ends at the termination of ramp down.

d. For units having a variable-speed indoor blower, conduct the cyclic dry coil test using the pull-thru approach described below if any of the following occur when testing with the fan operating:

(1) The test unit automatically cycles off;

(2) Its blower motor reverses; or

(3) The unit operates for more than 30 seconds at an external static pressure that is 0.1 inches of water or more higher than the value measured during the prior steady-state test.

For the pull-thru approach, disable the indoor blower and use the exhaust fan of the airflow measuring apparatus to generate the specified flow nozzles static pressure difference or velocity pressure. If the exhaust fan cannot deliver the required pressure difference because of resistance created by the unpowered indoor blower, temporarily remove the indoor blower.

e. Conduct three complete compressor OFF/ON cycles with the test tolerances given in Table 10 satisfied. Calculate the degradation coefficient C_D for each complete cycle. If all three C_D values are within 0.02 of the average C_D then stability has been achieved, and the highest C_D value of these three shall be used. If stability has not been achieved, conduct additional cycles, up to a maximum of eight cycles total, until stability has been achieved between three consecutive cycles. Once stability has been achieved, use the highest C_D value of the three consecutive cycles that establish stability. If stability has not been achieved after eight cycles, use the highest C_D from cycle one through cycle eight, or the default C_D, whichever is lower.

f. With regard to the Table 10 parameters, continuously record the dry-bulb temperature of the air entering the indoor and outdoor coils during periods when air flows through the respective coils. Sample the water vapor content of the indoor coil inlet air at least every 2 minutes during periods when air flows through the coil. Record external static pressure and the air volume rate indicator (either nozzle pressure difference or velocity pressure) at least every minute during the interval that air flows through the indoor coil. (These regular measurements of the airflow rate indicator are in addition to the required measurement at 15 seconds after flow initiation.) Sample the electrical voltage at least every 2 minutes beginning 30 seconds after compressor start-up. Continue until the compressor, the outdoor fan, and the indoor blower (if it is installed and operating) cycle off.

g. For ducted units, continuously record the dry-bulb temperature of the air entering (as noted above) and leaving the indoor coil. Or if using a thermopile, continuously record the difference between these two temperatures during the interval that air flows through the indoor coil. For non-ducted units, make the same dry-bulb temperature measurements beginning when the compressor cycles on and ending when indoor coil airflow ceases.

h. Integrate the electrical power over complete cycles of length $\Delta\tau_{cyc,dry}$. For ducted blower coil systems tested with the unit's indoor blower operating for the cycling test, integrate electrical power from indoor blower OFF to indoor blower OFF. For all other ducted units and for non-ducted units, integrate electrical power from compressor OFF to compressor OFF. (Some cyclic tests will use the same data collection intervals to determine the electrical energy and the total space cooling. For other units, terminate data collection used to determine the electrical energy before terminating data collection used to determine total space cooling.)

TABLE 10—TEST OPERATING AND TEST CONDITION TOLERANCES FOR CYCLIC DRY COIL COOLING MODE TESTS

	Test operating tolerance [1]	Test condition tolerance [1]
Indoor entering dry-bulb temperature,[2] °F	2.0	0.5
Indoor entering wet-bulb temperature, °F	.....	([3])
Outdoor entering dry-bulb temperature,[2] °F	2.0	0.5
External resistance to airflow,[2] inches of water	0.05	.....
Airflow nozzle pressure difference or velocity pressure,[2] % of reading	2.0	[4] 2.0
Electrical voltage,[5] % of rdg	2.0	1.5

[1] See section 1.2 of this appendix, Definitions.

[2] Applies during the interval that air flows through the indoor (outdoor) coil except for the first 30 seconds after flow initiation. For units having a variable-speed indoor blower that ramps, the tolerances listed for the external resistance to airflow apply from 30 seconds after achieving full speed until ramp down begins.

[3] Shall at no time exceed a wet-bulb temperature that results in condensate forming on the indoor coil.

[4] The test condition shall be the average nozzle pressure difference or velocity pressure measured during the steady-state dry coil test.

[5] Applies during the interval when at least one of the following—the compressor, the outdoor fan, or, if applicable, the indoor blower—are operating except for the first 30 seconds after compressor start-up.

If the Table 10 tolerances are satisfied over the complete cycle, record the measured electrical energy consumption as $e_{cyc,dry}$ and express it in units of watt-hours. Calculate the total space cooling delivered, $q_{cyc,dry}$, in units of Btu using,

$$q_{cyc,dry} = \frac{60*\overline{\dot{V}}*C_{p,a}*\Gamma}{[v_n'*(1+W_n)]} = \frac{60*\overline{\dot{V}}*C_{p,a}*\Gamma}{v_n} \quad \text{and} \quad \Gamma = F_{CD}^{*}\int_{\tau_1}^{\tau_2}[T_{a1}(\tau) - T_{a2}(\tau)]\delta\tau,\ hr*°\text{F}$$

Where,

$\overline{V}$, $C_{p,a}$, v_n' (or v_n), W_n, and $F_{CD}*$ are the values recorded during the section 3.4 dry coil steady-state test and

$T_{a1}(\tau)$ = dry bulb temperature of the air entering the indoor coil at time τ, °F.

$T_{a2}(\tau)$ = dry bulb temperature of the air leaving the indoor coil at time τ, °F.

τ_1 = for ducted units, the elapsed time when airflow is initiated through the indoor coil; for non-ducted units, the elapsed time when the compressor is cycled on, hr.

τ_2 = the elapsed time when indoor coil airflow ceases, hr.

Adjust the total space cooling delivered, $q_{cyc,dry}$, according to calculation method outlined in section 7.4.3.4.5 of ASHRAE 116–2010 (incorporated by reference, see § 430.3).

3.5.1 Procedures When Testing Ducted Systems

The automatic controls that are installed in the test unit must govern the OFF/ON cycling of the air moving equipment on the indoor side (exhaust fan of the airflow measuring apparatus and the indoor blower of the test unit). For ducted coil-only systems rated based on using a fan time-delay relay, control the indoor coil airflow according to the OFF delay listed by the manufacturer in the certification report. For ducted units having a variable-speed indoor blower that has been disabled (and possibly removed), start and stop the indoor airflow at the same instances as if the fan were enabled. For all other ducted coil-only systems, cycle the indoor coil airflow in unison with the cycling of the compressor. If air damper boxes are used, close them on the inlet and outlet side during the OFF period. Airflow through the indoor coil should stop within 3 seconds after the automatic controls of the test unit (act to) de-energize the indoor blower. For ducted coil-only systems (excluding the special case where a variable-speed fan is temporarily removed), increase $e_{cyc,dry}$ by the quantity,

$$\text{Equation 3.5-2.} \quad \frac{365\ W}{1000\ scfm} * \overline{\dot{V}}_s * [\tau_2 - \tau_1]$$

and decrease $q_{cyc,dry}$ by,

$$\text{Equation 3.5-3.} \quad \frac{1250\ Btu/h}{1000\ scfm} * \overline{\dot{V}}_s * [\tau_2 - \tau_1]$$

where $\overline{V}_s$ is the average indoor air volume rate from the section 3.4 dry coil steady-state test and is expressed in units of cubic feet per minute of standard air (scfm). For units having a variable-speed indoor blower that is disabled during the cyclic test, increase $e_{cyc,dry}$ and decrease $q_{cyc,dry}$ based on:

a. The product of $[\tau_2 - \tau_1]$ and the indoor blower power measured during or following the dry coil steady-state test; or,

b. The following algorithm if the indoor blower ramps its speed when cycling.

(1) Measure the electrical power consumed by the variable-speed indoor blower at a minimum of three operating conditions: At the speed/air volume rate/external static pressure that was measured during the steady-state test, at operating conditions associated with the midpoint of the ramp-up interval, and at conditions associated with the midpoint of the ramp-down interval. For these measurements, the tolerances on the airflow volume or the external static pressure are the same as required for the section 3.4 steady-state test.

(2) For each case, determine the fan power from measurements made over a minimum of 5 minutes.

(3) Approximate the electrical energy consumption of the indoor blower if it had operated during the cyclic test using all three power measurements. Assume a linear profile during the ramp intervals. The manufacturer must provide the durations of the ramp-up and ramp-down intervals. If the test setup instructions included with the unit by the manufacturer specifies a ramp interval that exceeds 45 seconds, use a 45-second ramp interval nonetheless when estimating the fan energy.

3.5.2 Procedures When Testing Non-Ducted Indoor Units

Do not use airflow prevention devices when conducting cyclic tests on non-ducted indoor units. Until the last OFF/ON compressor cycle, airflow through the indoor coil must cycle off and on in unison with the compressor. For the last OFF/ON compressor cycle—the one used to determine $e_{cyc,dry}$ and $q_{cyc,dry}$—use the exhaust fan of the airflow measuring apparatus and the indoor blower of the test unit to have indoor airflow start 3 minutes prior to compressor cut-on and end three minutes after compressor cutoff. Subtract the electrical energy used by the indoor blower during the 3 minutes prior to compressor cut-on from the integrated electrical energy, $e_{cyc,dry.}$ Add the electrical energy used by the indoor blower during the 3 minutes after compressor cutoff to the integrated cooling capacity, $q_{cyc,dry.}$ For the case where the non-ducted indoor unit uses a variable-speed indoor blower which is disabled during the cyclic test, correct $e_{cyc,dry}$ and $q_{cyc,dry}$ using the same approach as prescribed in section 3.5.1 of this appendix for ducted units having a disabled variable-speed indoor blower.

3.5.3 Cooling-Mode Cyclic-Degradation Coefficient Calculation

Use the two dry-coil tests to determine the cooling-mode cyclic-degradation coefficient, C_D^c. Append ''(k=2)'' to the coefficient if it corresponds to a two-capacity unit cycling at high capacity. If the two optional tests are conducted but yield a tested CD^c that exceeds the default CD^c or if the two optional tests are not conducted, assign CD^c the default value of 0.25 for variable-speed compressor systems and outdoor units with no match, and 0.20 for all other systems. The default value for two-capacity units cycling at high capacity, however, is the low-capacity coefficient, *i.e.,* $C_D^c(k=2) = C_D^c$. Evaluate C_D^c using the above results and those from the section 3.4 dry-coil steady-state test.

$$C_D^c = \frac{1 - \frac{EER_{cyc,dry}}{EER_{ss,dry}}}{1 - CLF}$$

where:

$$EER_{cyc,dry} = \frac{q_{cyc,dry}}{e_{cyc,dry}}$$

the average energy efficiency ratio during the cyclic dry coil cooling mode test, Btu/W·h

$$EER_{ss,dry} = \frac{\dot{Q}_{ss,dry}}{\dot{E}_{ss,dry}}$$

the average energy efficiency ratio during the steady-state dry coil cooling mode test, Btu/W·h

$$CLF = \frac{q_{cyc,dry}}{Q_{ss,dry} * \Delta\tau_{cyc,dry}}$$

the cooling load factor dimensionless

Round the calculated value for C_D^c to the nearest 0.01. If C_D^c is negative, then set it equal to zero.

3.6 Heating Mode Tests for Different Types of Heat Pumps, Including Heating-Only Heat Pumps

3.6.1 Tests for a Heat Pump Having a Single-Speed Compressor and Fixed Heating Air Volume Rate

This set of tests is for single-speed-compressor heat pumps that do not have a heating minimum air volume rate or a heating intermediate air volume rate that is different than the heating full load air volume rate. Conduct the optional high temperature cyclic (H1C) test to determine the heating mode cyclic-degradation coefficient, C_D^h. If this optional test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. Test conditions for the four tests are specified in Table 10.

TABLE 11—HEATING MODE TEST CONDITIONS FOR UNITS HAVING A SINGLE-SPEED COMPRESSOR AND A FIXED-SPEED INDOOR BLOWER, A CONSTANT AIR VOLUME RATE INDOOR BLOWER, OR NO INDOOR BLOWER

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
H1 Test (required, steady)	70	60 (max)	47	43	Heating Full-load.[1]
H1C Test (optional, cyclic)	70	60 (max)	47	43	([2])
H2 Test (required)	70	60 (max)	35	33	Heating Full-load.[1]
H3 Test (required, steady)	70	60 (max)	17	15	Heating Full-load.[1]

[1] Defined in section 3.1.4.4 of this appendix.
[2] Maintain the airflow nozzles static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the H1 Test.

3.6.2 Tests for a Heat Pump Having a Single-Speed Compressor and a Single Indoor Unit Having Either (1) a Variable Speed, Variable-Air-Rate Indoor Blower Whose Capacity Modulation Correlates With Outdoor Dry Bulb Temperature or (2) Multiple Indoor Blowers

Conduct five tests: Two high temperature tests ($H1_2$ and $H1_1$), one frost accumulation test ($H2_2$), and two low temperature tests ($H3_2$ and $H3_1$). Conducting an additional frost accumulation test ($H2_1$) is optional. Conduct the optional high temperature cyclic ($H1C_1$) test to determine the heating mode cyclic-degradation coefficient, C_D^h. If this optional test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. Test conditions for the seven tests are specified in Table 12. If the optional $H2_1$ test is not performed, use the following equations to approximate the capacity and electrical power of the heat pump at the $H2_1$ test conditions:

$$\dot{Q}_h^{k=1}(35) = QR_h^{k=2}(35) * \left\{\dot{Q}_h^{k=1}(17) + 0.6 * \left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=1}(17)\right]\right\}$$

$$\dot{E}_h^{k=1}(35) = PR_h^{k=2}(35) * \left\{\dot{E}_h^{k=1}(17) + 0.6 * \left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=1}(17)\right]\right\}$$

where:

$$\dot{Q}R_h^{k=2}(35) = \frac{\dot{Q}_h^{k=2}(35)}{\dot{Q}^{k=2}(17) + 0.6 * [\dot{Q}_h^{k=2}(47) - \dot{Q}_h^{k=2}(17)]}$$

$$PR_h^{k=2}(35) = \frac{\dot{E}_h^{k=2}(35)}{\dot{E}_h^{k=2}(17) + 0.6 * \left[\dot{E}_h^{k=2}(47) - \dot{E}_h^{k=2}(17)\right]}$$

The quantities $\dot{Q}_h^{k=2}(47)$, $\dot{E}_h^{k=2}(47)$, $\dot{Q}_h^{k=1}(47)$, and $\dot{E}_h^{k=1}(47)$ are determined from the $H1_2$ and $H1_1$ tests and evaluated as specified in section 3.7 of this appendix; the quantities $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ are determined from the $H2_2$ test and evaluated as specified in section 3.9 of this appendix; and the quantities $\dot{Q}_h^{k=2}(17)$, $\dot{E}_h^{k=2}(17)$, $\dot{Q}_h^{k=1}(17)$, and $\dot{E}_h^{k=1}(17)$, are determined from the $H3_2$ and $H3_1$ tests and evaluated as specified in section 3.10 of this appendix.

TABLE 12—TABLE HEATING MODE TEST CONDITIONS FOR UNITS WITH A SINGLE-SPEED COMPRESSOR THAT MEET THE SECTION 3.6.2 INDOOR UNIT REQUIREMENTS

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
$H1_2$ Test (required, steady)	70	60 (max)	47	43	Heating Full-load.[1]
$H1_1$ Test (required, steady)	70	60 (max)	47	43	Heating Minimum.[2]
$H1C_1$ Test (optional, cyclic)	70	60 (max)	47	43	([3])
$H2_2$ Test (required)	70	60 (max)	35	33	Heating Full-load.[1]
$H2_1$ Test (optional)	70	60 (max)	35	33	Heating Minimum.[2]
$H3_2$ Test (required, steady)	70	60 (max)	17	15	Heating Full-load.[1]
$H3_1$ Test (required, steady)	70	60 (max)	17	15	Heating Minimum.[2]

[1] Defined in section 3.1.4.4 of this appendix.
[2] Defined in section 3.1.4.5 of this appendix.
[3] Maintain the airflow nozzles static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the $H1_1$ test.

3.6.3 Tests for a Heat Pump Having a Two-Capacity Compressor (see section 1.2 of this appendix, Definitions), Including Two-Capacity, Northern Heat Pumps (see section 1.2 of this appendix, Definitions)

a. Conduct one maximum temperature test ($H0_1$), two high temperature tests ($H1_2$and $H1_1$), one frost accumulation test ($H2_2$), and one low temperature test ($H3_2$). Conduct an additional frost accumulation test ($H2_1$) and low temperature test ($H3_1$) if both of the following conditions exist:

(1) Knowledge of the heat pump's capacity and electrical power at low compressor capacity for outdoor temperatures of 37 °F and less is needed to complete the section 4.2.3 of this appendix seasonal performance calculations; and

(2) The heat pump's controls allow low-capacity operation at outdoor temperatures of 37 °F and less.

If the above two conditions are met, an alternative to conducting the $H2_1$ frost accumulation is to use the following equations to approximate the capacity and electrical power:

$$\dot{Q}_h^{k=1}(35) = 0.90 * \left\{\dot{Q}_h^{k=1}(17) + 0.6 * \left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=1}(17)\right]\right\}$$

$$\dot{E}_h^{k=1}(35) = 0.985 * \left\{\dot{E}_h^{k=1}(17) + 0.6 * \left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=1}(17)\right]\right\}$$

Determine the quantities $\dot{Q}_h^{k=1}$ (47) and $\dot{E}_h^{k=1}$ (47) from the $H1_1$ test and evaluate them according to section 3.7 of this appendix. Determine the quantities $\dot{Q}_h^{k=1}$ (17) and $\dot{E}_h^{k=1}$ (17) from the $H3_1$ test and evaluate them according to section 3.10 of this appendix.

b. Conduct the optional high temperature cyclic test ($H1C_1$) to determine the heating mode cyclic-degradation coefficient, C_D^h. If this optional test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. If a two-capacity heat pump locks out low capacity operation at lower outdoor temperatures, conduct the high temperature cyclic test ($H1C_2$) to determine the high-capacity heating mode cyclic-degradation coefficient, C_D^h (k=2). If this optional test at high capacity is conducted but yields a tested C_D^h (k = 2) that exceeds the default C_D^h (k = 2) or if the optional test is not conducted, assign C_D^h the default value. The default C_D^h (k=2) is the same value as determined or assigned for the low-capacity cyclic-degradation coefficient, C_D^h [or equivalently, C_D^h (k=1)]. Table 13 specifies test conditions for these nine tests.

TABLE 13—HEATING MODE TEST CONDITIONS FOR UNITS HAVING A TWO-CAPACITY COMPRESSOR

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Compressor capacity	Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
$H0_1$ Test (required, steady)	70	60 (max)	62	56.5	Low	Heating Minimum.[1]
$H1_2$ Test (required, steady)	70	60 (max)	47	43	High	Heating Full-Load.[2]
$H1C_2$ Test (optional[7], cyclic)	70	60 (max)	47	43	High	([3])
$H1_1$ Test (required)	70	60 (max)	47	43	Low	Heating Minimum.[1]
$H1C_1$ Test (optional, cyclic)	70	60 (max)	47	43	Low	([4])
$H2_2$ Test (required)	70	60 (max)	35	33	High	Heating Full-Load.[2]
$H2_1$ Test[5 6] (required)	70	60 (max)	35	33	Low	Heating Minimum.[1]
$H3_2$ Test (required, steady)	70	60 (max)	17	15	High	Heating Full-Load.[2]
$H3_1$ Test[5] (required, steady)	70	60 (max)	17	15	Low	Heating Minimum.[1]

[1] Defined in section 3.1.4.5 of this appendix.
[2] Defined in section 3.1.4.4 of this appendix.
[3] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H1_2$ test.
[4] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H1_1$ test.
[5] Required only if the heat pump's performance when operating at low compressor capacity and outdoor temperatures less than 37 °F is needed to complete the section 4.2.3 *HSPF* calculations.
[6] If table note #5 applies, the section 3.6.3 equations for $\dot{Q}_h^{k=1}$ (35) and $\dot{E}_h^{k=1}$ (17) may be used in lieu of conducting the $H2_1$ test.

[7] Required only if the heat pump locks out low capacity operation at lower outdoor temperatures.

3.6.4 Tests for a Heat Pump Having a Variable-Speed Compressor

a. Conduct one maximum temperature test ($H0_1$), two high temperature tests ($H1_N$ and $H1_1$), one frost accumulation test ($H2_V$), and one low temperature test ($H3_2$). Conducting one or both of the following tests is optional: An additional high temperature test ($H1_2$) and an additional frost accumulation test ($H2_2$). If desired, conduct the optional maximum temperature cyclic ($H0C_1$) test to determine the heating mode cyclic-degradation coefficient, C_D^h. If this optional test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. Test conditions for the eight tests are specified in Table 14. The compressor shall operate at the same heating full speed, measured by RPM or power input frequency (Hz), for the $H1_2$, $H2_2$ and $H3_2$ tests. For a cooling/heating heat pump, the compressor shall operate for the $H1_N$ test at a speed, measured by RPM or power input frequency (Hz), no lower than the speed used in the A_2 test if the tested $H1_2$ heating capacity is less than the tested cooling capacity in A_2 test. The compressor shall operate at the same heating minimum speed, measured by RPM or power input frequency (Hz), for the $H0_1$, $H1C_1$, and $H1_1$ tests. Determine the heating intermediate compressor speed cited in Table 14 using the heating mode full and minimum compressors speeds and:

$$\text{Heating intermediate speed} = \text{Heating minimum speed} + \frac{\text{Heating full speed} - \text{Heating minimum speed}}{3}$$

Where a tolerance on speed of plus 5 percent or the next higher inverter frequency step from the calculated value is allowed.

b. If the $H1_2$ test is conducted, set the 47 °F capacity and power input values used for calculation of HSPF equal to the measured values for that test:

$$\dot{Q}_{hcalc}^{k=2}(47) = \dot{Q}_h^{k=2}(47);\ \dot{E}_{hcalc}^{k=2}(47) = \dot{E}_h^{k=2}(47)$$

Where:

$\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ are the capacity and power input representing full-speed operation at 47 °F for the HSPF calculations,

$\dot{Q}_h^{k=2}(47)$ is the capacity measured in the $H1_2$ test, and

$\dot{E}_h^{k=2}(47)$ is the power input measured in the $H1_2$ test.

Evaluate the quantities $\dot{Q}_h^{k=2}(47)$ and from $\dot{E}_h^{k=2}(47)$ according to section 3.7.

Otherwise, if the $H1_N$ test is conducted using the same compressor speed (RPM or power input frequency) as the $H3_2$ test, set the 47 °F capacity and power input values used for calculation of HSPF equal to the measured values for that test:

$$\dot{Q}_{hcalc}^{k=2}(47) = \dot{Q}_h^{k=N}(47);\ \dot{E}_{hcalc}^{k=2}(47) = \dot{E}_h^{k=N}(47)$$

Where:

$\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ are the capacity and power input representing full-speed operation at 47 °F for the HSPF calculations,

$\dot{Q}_h^{k=N}(47)$ is the capacity measured in the $H1_N$ test, and

$\dot{E}_h^{k=N}(47)$ is the power input measured in the $H1_N$ test.

Evaluate the quantities $\dot{Q}_h^{k=N}(47)$ and from $\dot{E}_h^{k=N}(47)$ according to section 3.7.

Otherwise (if no high temperature test is conducted using the same speed (RPM or power input frequency) as the $H3_2$ test), calculate the 47 °F capacity and power input values used for calculation of HSPF as follows:

$$\dot{Q}_{hcalc}^{k=2}(47) = \dot{Q}_h^{k=2}(17) * (1 + 30^{\circ}F * CSF);$$

$$\dot{E}_{hcalc}^{k=2}(47) = \dot{E}_h^{k=2}(17) * (1 + 30^{\circ}F * PSF)$$

Where:

$\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ are the capacity and power input representing full-speed operation at 47 °F for the HSPF calculations,

$\dot{Q}_h^{k=2}(17)$ is the capacity measured in the $H3_2$ test,

$\dot{E}_h^{k=2}(17)$ is the power input measured in the $H3_2$ test,

CSF is the capacity slope factor, equal to 0.0204/°F for split systems and 0.0262/°F for single-package systems, and

PSF is the Power Slope Factor, equal to 0.00455/°F.

c. If the $H2_2$ test is not done, use the following equations to approximate the capacity and electrical power at the $H2_2$ test conditions:

$$\dot{Q}_h^{k=2}(35) = 0.90 * \left\{\dot{Q}_h^{k=2}(17) + 0.6 * \left[\dot{Q}_{hcalc}^{k=2}(47) - \dot{Q}_h^{k=2}(17)\right]\right\}$$

$$\dot{E}_h^{k=2}(35) = 0.985 * \left\{\dot{E}_h^{k=2}(17) + 0.6 * \left[\dot{E}_{hcalc}^{k=2}(47) - \dot{E}_h^{k=2}(17)\right]\right\}$$

Where:

$\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ are the capacity and power input representing full-speed operation at 47 °F for the HSPF

calculations,calculated as described in section b above.

$\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ are the capacity and power input measured in the $H3_2$ test.

d. Determine the quantities $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test, determine the quantities $\dot{Q}_h^{k=2}(5)$ and $\dot{E}_h^{k=2}(5)$ from the $H4_2$ test, and evaluate all four according to section 3.10.

TABLE 14—HEATING MODE TEST CONDITIONS FOR UNITS HAVING A VARIABLE-SPEED COMPRESSOR

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Compressor speed	Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
$H0_1$ test (required, steady)	70	$60^{(max)}$	62	56.5	Heating minimum.	Heating minimum.[1]
$H1_2$ test (optional, steady)	70	$60^{(max)}$	47	43	Heating full[4]	Heating full-load.[3]
$H1_1$ test (required, steady)	70	$60^{(max)}$	47	43	Heating minimum.	Heating minimum.[1]
$H1_N$ test (required, steady)	70	$60^{(max)}$	47	43	Heating full	Heating full-load.[3]
$H1C_1$ test (optional, cyclic)	70	$60^{(max)}$	47	43	Heating minimum.	([2])
$H2_2$ test (optional)	70	$60^{(max)}$	35	33	Heating full[4]	Heating full-load.[3]
$H2_V$ test (required)	70	$60^{(max)}$	35	33	Heating intermediate.	Heating intermediate.[5]
$H3_2$ test (required, steady)	70	$60^{(max)}$	17	15	Heating full	Heating full-load.[3]

[1] Defined in section 3.1.4.5 of this appendix.
[2] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during an ON period at the same pressure or velocity as measured during the $H1_1$ test.
[3] Defined in section 3.1.4.4 of this appendix.
[4] The same compressor speed used in the $H3_2$ test. The $H1_2$ test is not needed if the $H1_N$ test uses this same compressor speed.
[5] Defined in section 3.1.4.6 of this appendix.

3.6.5 Additional Test for a Heat Pump Having a Heat Comfort Controller

Test any heat pump that has a heat comfort controller (see section 1.2 of this appendix, Definitions) according to section 3.6.1, 3.6.2, or 3.6.3, whichever applies, with the heat comfort controller disabled. Additionally, conduct the abbreviated test described in section 3.1.10 of this appendix with the heat comfort controller active to determine the system's maximum supply air temperature. (**Note:** Heat pumps having a variable speed compressor and a heat comfort controller are not covered in the test procedure at this time.)

3.6.6 Heating Mode Tests for Northern Heat Pumps With Triple-Capacity Compressors.

Test triple-capacity, northern heat pumps for the heating mode as follows:

a. Conduct one maximum-temperature test ($H0_1$), two high-temperature tests ($H1_2$ and $H1_1$), one frost accumulation test ($H2_2$), two low-temperature tests ($H3_2$, $H3_3$), and one minimum-temperature test ($H4_3$). Conduct an additional frost accumulation test ($H2_1$) and low-temperature test ($H3_1$) if both of the following conditions exist: (1) Knowledge of the heat pump's capacity and electrical power at low compressor capacity for outdoor temperatures of 37 °F and less is needed to complete the section 4.2.6 seasonal performance calculations; and (2) the heat pump's controls allow low-capacity operation at outdoor temperatures of 37 °F and less. If the above two conditions are met, an alternative to conducting the $H2_1$ frost accumulation test to determine $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ is to use the following equations to approximate this capacity and electrical power:

$$\dot{Q}_h^{k=1}(35) = 0.90 * \left\{\dot{Q}_h^{k=1}(17) + 0.6 * \left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=1}(17)\right]\right\}$$

$$\dot{E}_h^{k=1}(35) = 0.985 * \left\{\dot{E}_h^{k=1}(17) + 0.6 * \left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=1}(17)\right]\right\}$$

In evaluating the above equations, determine the quantities $\dot{Q}_h^{k=1}(47)$ from the $H1_1$ test and evaluate them according to section 3.7 of this appendix. Determine the quantities $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ from the $H3_1$ test and evaluate them according to section 3.10 of this appendix. Use the paired values of $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ derived from conducting the $H2_1$ frost accumulation test and evaluated as specified in section 3.9.1 of this appendix or use the paired values calculated using the above default equations, whichever contribute to a higher Region IV HSPF based on the DHRmin.

b. Conducting a frost accumulation test ($H2_3$) with the heat pump operating at its booster capacity is optional. If this optional test is not conducted, determine $\dot{Q}_h^{k=3}(35)$ and $\dot{E}_h^{k=3}(35)$ using the following equations to approximate this capacity and electrical power:

$$\dot{Q}_h^{k=3}(35) = QR_h^{k=2}(35) * \left\{\dot{Q}_h^{k=3}(17) + 1.20 * \left[\dot{Q}_h^{k=3}(17) - \dot{Q}_h^{k=3}(5)\right]\right\}$$

$$\dot{E}_h^{k=3}(35) = PR_h^{k=2}(35) * \left\{\dot{E}_h^{k=3}(17) + 1.20 * \left[\dot{E}_h^{k=3}(17) - \dot{E}_h^{k=3}(5)\right]\right\}$$

Where:

$$QR_h^{k=2}(35) = \frac{\dot{Q}_h^{k=2}(35)}{\dot{Q}_h^{k=2}(17) + 0.6 * \left[\dot{Q}_h^{k=2}(47) - \dot{Q}_h^{k=2}(17)\right]}$$

$$PR_h^{k=2}(35) = \frac{\dot{E}_h^{k=2}(35)}{\dot{E}_h^{k=2}(17) + 0.6 * \left[\dot{E}_h^{k=2}(47) - \dot{E}_h^{k=2}(17)\right]}$$

Determine the quantities $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test and evaluate them according to section 3.7 of this appendix. Determine the quantities $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$ test and evaluate them according to section 3.9.1 of this appendix. Determine the quantities $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test, determine the quantities $\dot{Q}_h^{k=3}(17)$ and $\dot{E}_h^{k=3}(17)$ from the $H3_3$ test, and determine the quantities $\dot{Q}_h^{k=3}(5)$ and $\dot{E}_h^{k=3}(5)$ from the $H4_3$ test. Evaluate all six quantities according to section 3.10 of this appendix. Use the paired values of $\dot{Q}_h^{k=3}(35)$ and $\dot{E}_h^{k=3}(35)$ derived from conducting the $H2_3$ frost accumulation test and calculated as specified in section 3.9.1 of this appendix or use the paired values calculated using the above default equations, whichever contribute to a higher Region IV HSPF2 based on the DHRmin.

c. Conduct the optional high-temperature cyclic test ($H1C_1$) to determine the heating mode cyclic-degradation coefficient, C_D^h. A default value for C_D^h may be used in lieu of conducting the cyclic. The default value of C_D^h is 0.25. If a triple-capacity heat pump locks out low capacity operation at lower outdoor temperatures, conduct the high-temperature cyclic test ($H1C_2$) to determine the high-capacity heating mode cyclic-degradation coefficient, C_D^h (k=2). The default C_D^h (k=2) is the same value as determined or assigned for the low-capacity cyclic-degradation coefficient, C_D^h [or equivalently, C_D^h (k=1)]. Finally, if a triple-capacity heat pump locks out both low and high capacity operation at the lowest outdoor temperatures, conduct the low-temperature cyclic test ($H3C_3$) to determine the booster-capacity heating mode cyclic-degradation coefficient, C_D^h (k=3). The default C_D^h (k=3) is the same value as determined or assigned for the high-capacity cyclic-degradation coefficient, C_D^h [or equivalently, C_D^h (k=2)]. Table 15 specifies test conditions for all 13 tests.

TABLE 15—HEATING MODE TEST CONDITIONS FOR UNITS WITH A TRIPLE-CAPACITY COMPRESSOR

Test description	Air entering indoor unit temperature °F		Air entering outdoor unit temperature °F		Compressor capacity	Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
$H0_1$ Test (required, steady)	70	60(max)	62	56.5	Low	Heating Minimum.[1]
$H1_2$ Test (required, steady)	70	60(max)	47	43	High	Heating Full-Load.[2]
$H1C_2$ Test (optional,[8] cyclic)	70	60(max)	47	43	High	([3]).
$H1_1$ Test (required)	70	60(max)	47	43	Low	Heating Minimum.[1]
$H1C_1$ Test (optional, cyclic)	70	60(max)	47	43	Low	([4]).
$H2_3$ Test (optional, steady)	70	60(max)	35	33	Booster	Heating Full-Load.[2]
$H2_2$ Test (required)	70	60(max)	35	33	High	Heating Full-Load.[2]
$H2_1$ Test (required)	70	60(max)	35	33	Low	Heating Minimum.[1]
$H3_3$ Test (required, steady)	70	60(max)	17	15	Booster	Heating Full-Load.[2]
$H3C_3$ Test[5 6] (optional, cyclic)	70	60(max)	17	15	Booster	([7]).
$H3_2$ Test (required, steady)	70	60(max)	17	15	High	Heating Full-Load.[2]
$H3_1$ Test[5] (required, steady)	70	60(max)	17	15	Low	Heating Minimum.[1]
$H4_3$ Test (required, steady)	70	60(max)	5	3(max)	Booster	Heating Full-Load.[2]

[1] Defined in section 3.1.4.5 of this appendix.
[2] Defined in section 3.1.4.4 of this appendix.
[3] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H1_2$ test.
[4] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H1_1$ test.
[5] Required only if the heat pump's performance when operating at low compressor capacity and outdoor temperatures less than 37 °F is needed to complete the section 4.2.6 HSPF2 calculations.
[6] If table note [5] applies, the section 3.6.6 equations for $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(17)$ may be used in lieu of conducting the $H2_1$ test.
[7] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H3_3$ test.
[8] Required only if the heat pump locks out low capacity operation at lower outdoor temperatures.

3.6.7 Tests for a Heat Pump Having a Single Indoor Unit Having Multiple Indoor Blowers and Offering Two Stages of Compressor Modulation

Conduct the heating mode tests specified in section 3.6.3 of this appendix.

3.7 Test Procedures for Steady-State Maximum Temperature and High Temperature Heating Mode Tests (the $H0_1$, $H1$, $H1_2$, $H1_1$, and $H1_N$ Tests)

a. For the pretest interval, operate the test room reconditioning apparatus and the heat pump until equilibrium conditions are maintained for at least 30 minutes at the specified section 3.6 test conditions. Use the exhaust fan of the airflow measuring apparatus and, if installed, the indoor blower of the heat pump to obtain and then maintain the indoor air volume rate and/or the external static pressure specified for the particular test. Continuously record the dry-bulb temperature of the air entering the indoor coil, and the dry-bulb temperature and water vapor content of the air entering the outdoor coil. Refer to section 3.11 of this appendix for additional requirements that depend on the selected secondary test method. After satisfying the pretest equilibrium requirements, make the measurements specified in Table 3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) for the indoor air enthalpy method and the user-selected secondary method. Make said Table 3 measurements at equal intervals that span 5 minutes or less. Continue data sampling until a 30-minute period (*e.g.*, seven consecutive 5-minute samples) is reached where the test tolerances specified in Table 16 are satisfied. For those continuously recorded parameters,

use the entire data set for the 30-minute interval when evaluating Table 16 compliance. Determine the average electrical power consumption of the heat pump over the same 30-minute interval.

TABLE 16—TEST OPERATING AND TEST CONDITION TOLERANCES FOR SECTION 3.7 AND SECTION 3.10 STEADY-STATE HEATING MODE TESTS

	Test operating tolerance [1]	Test condition tolerance [1]
Indoor dry-bulb, °F:		
Entering temperature	2.0	0.5
Leaving temperature	2.0	.....
Indoor wet-bulb, °F:		
Entering temperature	1.0	.....
Leaving temperature	1.0	.....
Outdoor dry-bulb, °F:		
Entering temperature	2.0	0.5
Leaving temperature	[2] 2.0	.....
Outdoor wet-bulb, °F:		
Entering temperature	1.0	0.3
Leaving temperature	[2] 1.0	.....
External resistance to airflow, inches of water	0.05	[3] 0.02
Electrical voltage, % of rdg	2.0	1.5
Nozzle pressure drop, % of rdg	2.0	.....

[1] See section 1.2 of this appendix, Definitions.
[2] Only applies when the Outdoor Air Enthalpy Method is used.
[3] Only applies when testing non-ducted units.

b. Calculate indoor-side total heating capacity as specified in sections 7.3.4.1 and 7.3.4.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). To calculate capacity, use the averages of the measurements (*e.g.* inlet and outlet dry bulb temperatures measured at the psychrometers) that are continuously recorded for the same 30-minute interval used as described above to evaluate compliance with test tolerances. Do not adjust the parameters used in calculating capacity for the permitted variations in test conditions. Assign the average space heating capacity and electrical power over the 30-minute data collection interval to the variables $\dot{Q}_h^k$ and $\dot{E}_h^k(T)$ respectively. The ''T'' and superscripted ''k'' are the same as described in section 3.3 of this appendix. Additionally, for the heating mode, use the superscript to denote results from the optional $H1_N$ test, if conducted.

c. For coil-only system heat pumps, increase $\dot{Q}_h^k(T)$ by

$$\frac{1250\ BTU/h}{1000\ scfm} * \overline{\dot{V}_s}$$

and increase $\dot{E}_h^k(T)$ by,

$$\frac{365\ W}{1000\ scfm} * \overline{\dot{V}_s}$$

where $\overline{V}_s$ is the average measured indoor air volume rate expressed in units of cubic feet per minute of standard air (scfm). During the 30-minute data collection interval of a high temperature test, pay attention to preventing a defrost cycle. Prior to this time, allow the heat pump to perform a defrost cycle if automatically initiated by its own controls. As in all cases, wait for the heat pump's defrost controls to automatically terminate the defrost cycle. Heat pumps that undergo a defrost should operate in the heating mode for at least 10 minutes after defrost termination prior to beginning the 30-minute data collection interval. For some heat pumps, frost may accumulate on the outdoor coil during a high temperature test. If the indoor coil leaving air temperature or the difference between the leaving and entering air temperatures decreases by more than 1.5 °F over the 30-minute data collection interval, then do not use the collected data to determine capacity. Instead, initiate a defrost cycle. Begin collecting data no sooner than 10 minutes after defrost termination. Collect 30 minutes of new data during which the Table 16 test tolerances are satisfied. In this case, use only the results from the second 30-minute data collection interval to evaluate $\dot{Q}_h^k(47)$ and $\dot{E}_h^k(47)$.

d. If conducting the cyclic heating mode test, which is described in section 3.8 of this appendix, record the average indoor-side air volume rate, $\overline{V}$, specific heat of the air, $C_{p,a}$ (expressed on dry air basis), specific volume of the air at the nozzles, v_n' (or v_n), humidity ratio at the nozzles, W_n, and either pressure difference or velocity pressure for the flow nozzles. If either or both of the below criteria apply, determine the average, steady-state, electrical power consumption of the indoor blower motor ($\dot{E}_{fan,1}$):

(1) The section 3.8 cyclic test will be conducted and the heat pump has a variable-speed indoor blower that is expected to be disabled during the cyclic test; or

(2) The heat pump has a (variable-speed) constant-air volume-rate indoor blower and during the steady-state test the average external static pressure (ΔP_1) exceeds the applicable section 3.1.4.4 minimum (or targeted) external static pressure (ΔP_{min}) by 0.03 inches of water or more.

Determine $\dot{E}_{fan,1}$ by making measurements during the 30-minute data collection interval, or immediately following the test and prior to changing the test conditions. When the above ''2'' criteria applies, conduct the following four steps after determining $\dot{E}_{fan,1}$ (which corresponds to ΔP_1):

(i) While maintaining the same test conditions, adjust the exhaust fan of the airflow measuring apparatus until the external static pressure increases to approximately $\Delta P_1 + (\Delta P_1 - \Delta P_{min})$.

(ii) After re-establishing steady readings for fan motor power and external static pressure, determine average values for the indoor blower power ($\dot{E}_{fan,2}$) and the external static pressure (ΔP_2) by making measurements over a 5-minute interval.

(iii) Approximate the average power consumption of the indoor blower motor if the 30-minute test had been conducted at ΔP_{min} using linear extrapolation:

$$\dot{E}_{fan,\min} = \frac{\dot{E}_{fan,2} - \dot{E}_{fan,1}}{\Delta P_2 - \Delta P_1}(\Delta P_{\min} - \Delta P_1) + \dot{E}_{fan,1}$$

(iv) Decrease the total space heating capacity, $\dot{Q}_h^k(T)$, by the quantity ($\dot{E}_{fan,1} - \dot{E}_{fan,min}$), when expressed on a Btu/h basis. Decrease the total electrical power, $\dot{E}_h^k(T)$ by the same fan power difference, now expressed in watts.

e. If the temperature sensors used to provide the primary measurement of the indoor-side dry bulb temperature difference during the steady-state dry-coil test and the subsequent cyclic dry-coil test are different, include measurements of the latter sensors among the regularly sampled data. Beginning at the start of the 30-minute data collection period, measure and compute the indoor-side air dry-bulb temperature difference using both sets of instrumentation, ΔT (Set SS) and ΔT (Set CYC), for each equally spaced data sample. If using a consistent data sampling rate that is less than 1 minute, calculate and record minutely averages for the two temperature differences. If using a consistent sampling rate of one minute or more, calculate and record the two temperature differences from each data sample. After having recorded the seventh (i=7) set of temperature differences, calculate the following ratio using the first seven sets of values:

$$F_{CD} = \frac{1}{7}\sum_{i-6}^{i}\frac{\Delta T(Set\ SS)}{\Delta T(Set\ CYC)}$$

Each time a subsequent set of temperature differences is recorded (if sampling more frequently than every 5 minutes), calculate F_{CD} using the most recent seven sets of values. Continue these calculations until the 30-minute period is completed or until a value for F_{CD} is calculated that falls outside the allowable range of 0.94–1.06. If the latter occurs, immediately suspend the test and identify the cause for the disparity in the two temperature difference measurements. Recalibration of one or both sets of instrumentation may be required. If all the values for F_{CD} are within the allowable range, save the final value of the ratio from the 30-minute test as F_{CD}*. If the temperature sensors used to provide the primary measurement of the indoor-side dry bulb temperature difference during the steady-state dry-coil test and the subsequent cyclic dry-coil test are the same, set F_{CD}*= 1.

3.8 Test Procedures for the Cyclic Heating Mode Tests (the H0C1, H1C, H1C1 and H1C2 Tests)

a. Except as noted below, conduct the cyclic heating mode test as specified in section 3.5 of this appendix. As adapted to the heating mode, replace section 3.5 references to ''the steady-state dry coil test'' with ''the heating mode steady-state test conducted at the same test conditions as the cyclic heating mode test.'' Use the test tolerances in Table 17 rather than Table 10. Record the outdoor coil entering wet-bulb temperature according to the requirements given in section 3.5 of this appendix for the outdoor coil entering dry-bulb temperature. Drop the subscript ''dry'' used in variables cited in section 3.5 of this appendix when referring to quantities from the cyclic heating mode test. Determine the total space heating delivered during the cyclic heating test, q_{cyc}, as specified in section 3.5 of this appendix except for making the following changes:

(1) When evaluating Equation 3.5–1, use the values of $\bar{V}$, $C_{p,a}$,v_n', (or v_n), and W_n that were recorded during the section 3.7 steady-state test conducted at the same test conditions.

(2) Calculate Γ using

$$\Gamma \text{ using, } \Gamma = F_{CD}^{*}\int_{\tau_1}^{\tau_2}[T_{a1}(\tau) - T_{a2}(\tau)]\delta\tau,\ \ hr \times {}^{\circ}F,$$

where F_{CD}* is the value recorded during the section 3.7 steady-state test conducted at the same test condition.

b. For ducted coil-only system heat pumps (excluding the special case where a variable-speed fan is temporarily removed), increase q_{cyc} by the amount calculated using Equation 3.5–3. Additionally, increase e_{cyc} by the amount calculated using Equation 3.5–2. In making these calculations, use the average indoor air volume rate ($\bar{\dot{V}}_s$) determined from the section 3.7 steady-state heating mode test conducted at the same test conditions.

c. For non-ducted heat pumps, subtract the electrical energy used by the indoor blower during the 3 minutes after compressor cutoff from the non-ducted heat pump's integrated heating capacity, q_{cyc}.

d. If a heat pump defrost cycle is manually or automatically initiated immediately prior to or during the OFF/ON cycling, operate the heat pump continuously until 10 minutes after defrost termination. After that, begin cycling the heat pump immediately or delay until the specified test conditions have been re-established. Pay attention to preventing defrosts after beginning the cycling process. For heat pumps that cycle off the indoor blower during a defrost cycle, make no effort here to restrict the air movement through the indoor coil while the fan is off. Resume the OFF/ON cycling while conducting a minimum of two complete compressor OFF/ON cycles before determining q_{cyc} and e_{cyc}.

3.8.1 Heating Mode Cyclic-Degradation Coefficient Calculation

Use the results from the required cyclic test and the required steady-state test that were conducted at the same test conditions to determine the heating mode cyclic-degradation coefficient C_D^h. Add ''(k=2)'' to the coefficient if it corresponds to a two-capacity unit cycling at high capacity. For the below calculation of the heating mode cyclic degradation coefficient, do not include the duct loss correction from section 7.3.3.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) in determining $\dot{Q}_h^k(T_{cyc})$ (or q_{cyc}). If the optional cyclic test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. The default value for two-capacity units cycling at high capacity, however, is the low-capacity coefficient, *i.e.*, C_D^h (k=2) = C_D^h. The tested C_D^h is calculated as follows:

$$C_D^h = \frac{1 - \frac{COP_{cyc}}{COP_{ss}(T_{cyc})}}{1 - HLF}$$

where:

$$COP_{cyc} = \frac{q_{cyc}}{3.413\frac{Btu/h}{W} * e_{cyc}}$$

the average coefficient of performance during the cyclic heating mode test, dimensionless.

$$COP_{ss}(T_{cyc}) = \frac{\dot{Q}_h^k(T_{cyc})}{3.413\frac{Btu/h}{W} * \dot{E}_h^k(T_{cyc})}$$

the average coefficient of performance during the steady-state heating mode test conducted at the same test conditions—*i.e.,* same outdoor dry bulb temperature, T_{cyc}, and speed/capacity, k, if applicable—as specified for the cyclic heating mode test, dimensionless.

$$HLF = \frac{q_{cyc}}{\dot{Q}_h^k(T_{cyc}) * \Delta\tau_{cyc}}$$

the heating load factor, dimensionless.

T_{cyc} = the nominal outdoor temperature at which the cyclic heating mode test is conducted, 62 or 47 °F.

$\Delta\tau_{cyc}$ = the duration of the OFF/ON intervals; 0.5 hours when testing a heat pump having a single-speed or two-capacity compressor and 1.0 hour when testing a heat pump having a variable-speed compressor.

Round the calculated value for C_D^h to the nearest 0.01. If C_D^h is negative, then set it equal to zero.

TABLE 17—TEST OPERATING AND TEST CONDITION TOLERANCES FOR CYCLIC HEATING MODE TESTS

	Test operating tolerance [1]	Test condition tolerance [1]
Indoor entering dry-bulb temperature,[2] °F	2.0	0.5
Indoor entering wet-bulb temperature,[2] °F	1.0	.....
Outdoor entering dry-bulb temperature,[2] °F	2.0	0.5
Outdoor entering wet-bulb temperature,[2] °F	2.0	1.0
External resistance to air-flow,[2] inches of water	0.05	.....
Airflow nozzle pressure difference or velocity pressure,[2]% of reading	2.0	[3] 2.0
Electrical voltage,[4] % of rdg	2.0	1.5

[1] See section 1.2 of this appendix, Definitions.

[2] Applies during the interval that air flows through the indoor (outdoor) coil except for the first 30 seconds after flow initiation. For units having a variable-speed indoor blower that ramps, the tolerances listed for the external resistance to airflow shall apply from 30 seconds after achieving full speed until ramp down begins.

[3] The test condition shall be the average nozzle pressure difference or velocity pressure measured during the steady-state test conducted at the same test conditions.

[4] Applies during the interval that at least one of the following—the compressor, the outdoor fan, or, if applicable, the indoor blower—are operating, except for the first 30 seconds after compressor start-up.

3.9 Test Procedures for Frost Accumulation Heating Mode Tests (the H2, $H2_2$, $H2_V$, and $H2_1$ tests)

a. Confirm that the defrost controls of the heat pump are set as specified in section 2.2.1 of this appendix. Operate the test room reconditioning apparatus and the heat pump for at least 30 minutes at the specified section 3.6 test conditions before starting the ''preliminary'' test period. The preliminary test period must immediately precede the ''official'' test period, which is the heating and defrost interval over which data are collected for evaluating average space heating capacity and average electrical power consumption.

b. For heat pumps containing defrost controls which are likely to cause defrosts at intervals less than one hour, the preliminary test period starts at the termination of an automatic defrost cycle and ends at the termination of the next occurring automatic defrost cycle. For heat pumps containing defrost controls which are likely to cause defrosts at intervals exceeding one hour, the preliminary test period must consist of a heating interval lasting at least one hour followed by a defrost cycle that is either manually or automatically initiated. In all cases, the heat pump's own controls must govern when a defrost cycle terminates.

c. The official test period begins when the preliminary test period ends, at defrost termination. The official test period ends at the termination of the next occurring automatic defrost cycle. When testing a heat pump that uses a time-adaptive defrost control system (see section 1.2 of this appendix, Definitions), however, manually initiate the defrost cycle that ends the official test period at the instant indicated by instructions provided by the manufacturer. If the heat pump has not undergone a defrost after 6 hours, immediately conclude the test and use the results from the full 6-hour period to calculate the average space heating capacity and average electrical power consumption.

For heat pumps that turn the indoor blower off during the defrost cycle, take steps to cease forced airflow through the indoor coil and block the outlet duct whenever the heat pump's controls cycle off the indoor blower. If it is installed, use the outlet damper box described in section 2.5.4.1 of this appendix to affect the blocked outlet duct.

d. Defrost termination occurs when the controls of the heat pump actuate the first change in converting from defrost operation to normal heating operation. Defrost initiation occurs when the controls of the heat pump first alter its normal heating operation in order to eliminate possible accumulations of frost on the outdoor coil.

e. To constitute a valid frost accumulation test, satisfy the test tolerances specified in Table 18 during both the preliminary and official test periods. As noted in Table 18, test operating tolerances are specified for two sub-intervals:

(1) When heating, except for the first 10 minutes after the termination of a defrost cycle (sub-interval H, as described in Table 18) and

(2) When defrosting, plus these same first 10 minutes after defrost termination (sub-interval D, as described in Table 18). Evaluate compliance with Table 18 test condition tolerances and the majority of the test operating tolerances using the averages from measurements recorded only during sub-interval H. Continuously record the dry bulb temperature of the air entering the indoor coil, and the dry bulb temperature and water vapor content of the air entering the outdoor coil. Sample the remaining parameters listed in Table 18 at equal intervals that span 5 minutes or less.

f. For the official test period, collect and use the following data to calculate average space heating capacity and electrical power. During heating and defrosting intervals when the controls of the heat pump have the indoor blower on, continuously record the

dry-bulb temperature of the air entering (as noted above) and leaving the indoor coil. If using a thermopile, continuously record the difference between the leaving and entering dry-bulb temperatures during the interval(s) that air flows through the indoor coil. For coil-only system heat pumps, determine the corresponding cumulative time (in hours) of indoor coil airflow, $\Delta\tau_a$. Sample measurements used in calculating the air volume rate (refer to sections 7.7.2.1 and 7.7.2.2 of ANSI/ASHRAE 37–2009) at equal intervals that span 10 minutes or less. (**Note:** In the first printing of ANSI/ASHRAE 37–2009, the second IP equation for Q_{mi} should read:) Record the electrical energy consumed, expressed in watt-hours, from defrost termination to defrost termination, $e_{DEF}{}^k(35)$, as well as the corresponding elapsed time in hours, $\Delta\tau_{FR}$.

TABLE 18—TEST OPERATING AND TEST CONDITION TOLERANCES FOR FROST ACCUMULATION HEATING MODE TESTS

	Test operating tolerance [1]		Test condition tolerance [1]
	Sub-interval H [2]	Sub-interval D [3]	Sub-interval H [2]
Indoor entering dry-bulb temperature, °F	2.0	[4] 4.0	0.5
Indoor entering wet-bulb temperature, °F	1.0	.....	.....
Outdoor entering dry-bulb temperature, °F	2.0	10.0	1.0
Outdoor entering wet-bulb temperature, °F	1.5	.....	0.5
External resistance to airflow, inches of water	0.05	.....	[5] 0.02
Electrical voltage, % of rdg	2.0	.....	1.5

[1] See section 1.2 of this appendix, Definitions.
[2] Applies when the heat pump is in the heating mode, except for the first 10 minutes after termination of a defrost cycle.
[3] Applies during a defrost cycle and during the first 10 minutes after the termination of a defrost cycle when the heat pump is operating in the heating mode.
[4] For heat pumps that turn off the indoor blower during the defrost cycle, the noted tolerance only applies during the 10 minute interval that follows defrost termination.
[5] Only applies when testing non-ducted heat pumps.

3.9.1 Average Space Heating Capacity and Electrical Power Calculations

a. Evaluate average space heating capacity, $\dot{Q}_h{}^k(35)$, when expressed in units of Btu per hour, using:

$$\dot{Q}_h^k(35) = \frac{60 * \bar{\dot{V}} * C_{p,a} * \Gamma}{\Delta\tau_{FR}[v_n' * (1 + W_n)]} = \frac{60 * \bar{\dot{V}} * C_{p,a} * \Gamma}{\Delta\tau_{FR} v_n}$$

Where,

$\bar{V}$ = the average indoor air volume rate measured during sub-interval H, cfm.

$C_{p,a} = 0.24 + 0.444 \cdot W_n$, the constant pressure specific heat of the air-water vapor mixture that flows through the indoor coil and is expressed on a dry air basis, $Btu/lbm_{da} \cdot °F$.

v_n' = specific volume of the air-water vapor mixture at the nozzle, ft^3/lbm_{mx}.

W_n = humidity ratio of the air-water vapor mixture at the nozzle, lbm of water vapor per lbm of dry air.

$\Delta\tau_{FR} = \tau_2 - \tau_1$, the elapsed time from defrost termination to defrost termination, hr.

$$\Gamma = \int_{\tau_1}^{\tau_2} [T_{a2}(\tau) - T_{a1}(\tau)] d\tau,\ hr * °F$$

$T_{a1}(\tau)$ = dry bulb temperature of the air entering the indoor coil at elapsed time τ, °F; only recorded when indoor coil airflow occurs; assigned the value of zero during periods (if any) where the indoor blower cycles off.

$T_{a2}(\tau)$ = dry bulb temperature of the air leaving the indoor coil at elapsed time τ, °F; only recorded when indoor coil airflow occurs; assigned the value of zero during periods (if any) where the indoor blower cycles off.

τ_1 = the elapsed time when the defrost termination occurs that begins the official test period, hr.

τ_2 = the elapsed time when the next automatically occurring defrost termination occurs, thus ending the official test period, hr.

v_n = specific volume of the dry air portion of the mixture evaluated at the dry-bulb temperature, vapor content, and barometric pressure existing at the nozzle, ft^3 per lbm of dry air.

To account for the effect of duct losses between the outlet of the indoor unit and the section 2.5.4 dry-bulb temperature grid, adjust $\dot{Q}_h{}^k(35)$ in accordance with section 7.3.4.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3).

b. Evaluate average electrical power, $\dot{E}_h{}^k(35)$, when expressed in units of watts, using:

$$\dot{E}_h^k(35) = \frac{e_{def}(35)}{\Delta\tau_{FR}}$$

For coil-only system heat pumps, increase $\dot{Q}_h{}^k(35)$ by,

$$\frac{1250\ Btu/h}{1000\ scfm} * \bar{\dot{V}}_s * \frac{\Delta\tau_a}{\Delta\tau_{FR}}$$

and increase $\dot{E}_h{}^k(35)$ by,

$$\frac{365\ W}{1000\ scfm} * \bar{\dot{V}}_s * \frac{\Delta\tau_a}{\Delta\tau_{FR}}$$

where $\bar{V}_s$ is the average indoor air volume rate measured during the frost accumulation heating mode test and is expressed in units of cubic feet per minute of standard air (scfm).

c. For heat pumps having a constant-air-volume-rate indoor blower, the five additional steps listed below are required if the average of the external static pressures measured during sub-interval H exceeds the applicable section 3.1.4.4, 3.1.4.5, or 3.1.4.6 minimum (or targeted) external static pressure (ΔP_{min}) by 0.03 inches of water or more:

(1) Measure the average power consumption of the indoor blower motor ($\dot{E}_{fan,1}$) and record the corresponding external

static pressure (ΔP_1) during or immediately following the frost accumulation heating mode test. Make the measurement at a time when the heat pump is heating, except for the first 10 minutes after the termination of a defrost cycle.

(2) After the frost accumulation heating mode test is completed and while maintaining the same test conditions, adjust the exhaust fan of the airflow measuring apparatus until the external static pressure increases to approximately $\Delta P_1 + (\Delta P_1 - \Delta P_{min})$.

(3) After re-establishing steady readings for the fan motor power and external static pressure, determine average values for the indoor blower power ($\dot{E}_{fan,2}$) and the external static pressure (ΔP_2) by making measurements over a 5-minute interval.

(4) Approximate the average power consumption of the indoor blower motor had the frost accumulation heating mode test been conducted at ΔP_{min} using linear extrapolation:

$$\dot{E}_{fan,\min} = \frac{\dot{E}_{fan,2} - \dot{E}_{fan,1}}{\Delta P_2 - \Delta P_1}(\Delta P_{\min} - \Delta P_1) + \dot{E}_{fan,1}$$

(5) Decrease the total heating capacity, $\dot{Q}_h^k(35)$, by the quantity $[(\dot{E}_{fan,1} - \dot{E}_{fan,min}) \cdot (\Delta\tau_a/\Delta\tau_{FR}]$, when expressed on a Btu/h basis. Decrease the total electrical power, $E_h^k(35)$, by the same quantity, now expressed in watts.

3.9.2 Demand Defrost Credit

a. Assign the demand defrost credit, F_{def}, that is used in section 4.2 of this appendix to the value of 1 in all cases except for heat pumps having a demand-defrost control system (see section 1.2 of this appendix, Definitions). For such qualifying heat pumps, evaluate F_{def} using,

$$F_{def} = 1 + 0.03 * \left[1 - \frac{\Delta\tau_{def} - 1.5}{\Delta\tau_{\max} - 1.5}\right]$$

where:

$\Delta\tau_{def}$ = the time between defrost terminations (in hours) or 1.5, whichever is greater. A value of 6 must be assigned to $\Delta\tau_{def}$ if this limit is reached during a frost accumulation test and the heat pump has not completed a defrost cycle.

$\Delta\tau_{max}$ = maximum time between defrosts as allowed by the controls (in hours) or 12, whichever is less, as provided in the certification report.

b. For two-capacity heat pumps and for section 3.6.2 units, evaluate the above equation using the $\Delta\tau_{def}$ that applies based on the frost accumulation test conducted at high capacity and/or at the heating full-load air volume rate. For variable-speed heat pumps, evaluate $\Delta\tau_{def}$ based on the required frost accumulation test conducted at the intermediate compressor speed.

3.10 Test Procedures for Steady-State Low Temperature Heating Mode Tests (the H3, $H3_2$, and $H3_1$ Tests)

Except for the modifications noted in this section, conduct the low temperature heating mode test using the same approach as specified in section 3.7 of this appendix for the maximum and high temperature tests. After satisfying the section 3.7 requirements for the pretest interval but before beginning to collect data to determine $\dot{Q}_h^k(17)$ and $\dot{E}_h^k(17)$, conduct a defrost cycle. This defrost cycle may be manually or automatically initiated. The defrost sequence must be terminated by the action of the heat pump's defrost controls. Begin the 30-minute data collection interval described in section 3.7 of this appendix, from which $\dot{Q}_h^k(17)$ and $\dot{E}_h^k(17)$ are determined, no sooner than 10 minutes after defrost termination. Defrosts should be prevented over the 30-minute data collection interval.

3.11 Additional Requirements for the Secondary Test Methodst

3.11.1 If Using the Outdoor Air Enthalpy Method as the Secondary Test Method

a. For all cooling mode and heating mode tests, first conduct a test without the outdoor air-side test apparatus described in section 2.10.1 of this appendix connected to the outdoor unit (''free outdoor air'' test).

b. For the first section 3.2 steady-state cooling mode test and the first section 3.6 steady-state heating mode test, conduct a second test in which the outdoor-side apparatus is connected (''ducted outdoor air'' test). No other cooling mode or heating mode tests require the ducted outdoor air test so long as the unit operates the outdoor fan during all cooling mode steady-state tests at the same speed and all heating mode steady-state tests at the same speed. If using more than one outdoor fan speed for the cooling mode steady-state tests, however, conduct the ducted outdoor air test for each cooling mode test where a different fan speed is first used. This same requirement applies for the heating mode tests.

3.11.1.1 Free Outdoor Air Test

a. For the free outdoor air test, connect the indoor air-side test apparatus to the indoor coil; do not connect the outdoor air-side test apparatus. Allow the test room reconditioning apparatus and the unit being tested to operate for at least one hour. After attaining equilibrium conditions, measure the following quantities at equal intervals that span 5 minutes or less:

(1) The section 2.10.1 evaporator and condenser temperatures or pressures;

(2) Parameters required according to the indoor air enthalpy method.

Continue these measurements until a 30-minute period (*e.g.,* seven consecutive 5-minute samples) is obtained where the Table 9 or Table 16, whichever applies, test tolerances are satisfied.

b. For cases where a ducted outdoor air test is not required per section 3.11.1.b of this appendix, the free outdoor air test constitutes the ''official'' test for which validity is not based on comparison with a secondary test.

c. For cases where a ducted outdoor air test is required per section 3.11.1.b of this appendix, the following conditions must be met for the free outdoor air test to constitute a valid ''official'' test:

(1) Achieve the energy balance specified in section 3.1.1 of this appendix for the ducted outdoor air test (*i.e.,* compare the capacities determined using the indoor air enthalpy method and the outdoor air enthalpy method).

(2) The capacities determined using the indoor air enthalpy method from the ducted outdoor air and free outdoor tests must agree within 2 percent.

3.11.1.2 Ducted Outdoor Air Test

a. The test conditions and tolerances for the ducted outdoor air test are the same as specified for the free outdoor air test described in Section 3.11.1.1 of this appendix.

b. After collecting 30 minutes of steady-state data during the free outdoor air test, connect the outdoor air-side test apparatus to the unit for the ducted outdoor air test. Adjust the exhaust fan of the outdoor airflow measuring apparatus until averages for the evaporator and condenser temperatures, or the saturated temperatures corresponding to the measured pressures, agree within ±0.5 °F of the averages achieved during the free outdoor air test. Collect 30 minutes of steady-state data after re-establishing equilibrium conditions.

c. During the ducted outdoor air test, at intervals of 5 minutes or less, measure the parameters required according to the indoor air enthalpy method and the outdoor air enthalpy method for the prescribed 30 minutes.

d. For cooling mode ducted outdoor air tests, calculate capacity based on outdoor air-enthalpy measurements as specified in sections 7.3.3.2 and 7.3.3.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see

§ 430.3). For heating mode ducted tests, calculate heating capacity based on outdoor air-enthalpy measurements as specified in sections 7.3.4.2 and 7.3.3.4.3 of the same ANSI/ASHRAE Standard. Adjust the outdoor-side capacity according to section 7.3.3.4 of ANSI/ASHRAE 37–2009 to account for line losses when testing split systems. As described in section 8.6.2 of ANSI/ASHRAE 37–2009, use the outdoor air volume rate as measured during the ducted outdoor air tests to calculate capacity for checking the agreement with the capacity calculated using the indoor air enthalpy method.

3.11.2 If Using the Compressor Calibration Method as the Secondary Test Method

a. Conduct separate calibration tests using a calorimeter to determine the refrigerant flow rate. Or for cases where the superheat of the refrigerant leaving the evaporator is less than 5 °F, use the calorimeter to measure total capacity rather than refrigerant flow rate. Conduct these calibration tests at the same test conditions as specified for the tests in this appendix. Operate the unit for at least one hour or until obtaining equilibrium conditions before collecting data that will be used in determining the average refrigerant flow rate or total capacity. Sample the data at equal intervals that span 5 minutes or less. Determine average flow rate or average capacity from data sampled over a 30-minute period where the Table 9 (cooling) or the Table 16 (heating) tolerances are satisfied. Otherwise, conduct the calibration tests according to sections 5, 6, 7, and 8 of ASHRAE 23.1–2010 (incorporated by reference, see § 430.3); sections 5, 6, 7, 8, 9, and 11 of ASHRAE 41.9–2011 (incorporated by reference, see § 430.3); and section 7.4 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3).

b. Calculate space cooling and space heating capacities using the compressor calibration method measurements as specified in section 7.4.5 and 7.4.6 respectively, of ANSI/ASHRAE 37–2009.

3.11.3 If Using the Refrigerant-Enthalpy Method as the Secondary Test Method

Conduct this secondary method according to section 7.5 of ANSI/ASHRAE 37–2009. Calculate space cooling and heating capacities using the refrigerant-enthalpy method measurements as specified in sections 7.5.4 and 7.5.5, respectively, of the same ASHRAE Standard.

3.12 Rounding of Space Conditioning Capacities for Reporting Purposes

a. When reporting rated capacities, round them off as specified in § 430.23 (for a single unit) and in 10 CFR 429.16 (for a sample).

b. For the capacities used to perform the calculations in section 4 of this appendix, however, round only to the nearest integer.

3.13 Laboratory Testing to Determine Off Mode Average Power Ratings

Voltage tolerances: As a percentage of reading, test operating tolerance shall be 2.0 percent and test condition tolerance shall be 1.5 percent (see section 1.2 of this appendix for definitions of these tolerances).

Conduct one of the following tests: If the central air conditioner or heat pump lacks a compressor crankcase heater, perform the test in section 3.13.1 of this appendix; if the central air conditioner or heat pump has a compressor crankcase heater that lacks controls and is not self-regulating, perform the test in section 3.13.1 of this appendix; if the central air conditioner or heat pump has a crankcase heater with a fixed power input controlled with a thermostat that measures ambient temperature and whose sensing element temperature is not affected by the heater, perform the test in section 3.13.1 of this appendix; if the central air conditioner or heat pump has a compressor crankcase heater equipped with self-regulating control or with controls for which the sensing element temperature is affected by the heater, perform the test in section 3.13.2 of this appendix.

3.13.1 This Test Determines the Off Mode Average Power Rating for Central Air Conditioners and Heat Pumps That Lack a Compressor Crankcase Heater, or Have a Compressor Crankcase Heating System That Can Be Tested Without Control of Ambient Temperature During the Test. This Test Has No Ambient Condition Requirements

a. Test Sample Set-up and Power Measurement: For coil-only systems, provide a furnace or modular blower that is compatible with the system to serve as an interface with the thermostat (if used for the test) and to provide low-voltage control circuit power. Make all control circuit connections between the furnace (or modular blower) and the outdoor unit as specified by the manufacturer's installation instructions. Measure power supplied to both the furnace or modular blower and power supplied to the outdoor unit. Alternatively, provide a compatible transformer to supply low-voltage control circuit power, as described in section 2.2.d of this appendix. Measure transformer power, either supplied to the primary winding or supplied by the secondary winding of the transformer, and power supplied to the outdoor unit. For blower coil and single-package systems, make all control circuit connections between components as specified by the manufacturer's installation instructions, and provide power and measure power supplied to all system components.

b. Configure Controls: Configure the controls of the central air conditioner or heat pump so that it operates as if connected to a building thermostat that is set to the OFF position. Use a compatible building thermostat if necessary to achieve this configuration. For a thermostat-controlled crankcase heater with a fixed power input, bypass the crankcase heater thermostat if necessary to energize the heater.

c. Measure $P2_x$: If the unit has a crankcase heater time delay, make sure that time delay function is disabled or wait until delay time has passed. Determine the average power from non-zero value data measured over a 5-minute interval of the non-operating central air conditioner or heat pump and designate the average power as $P2_x$, the heating season total off mode power.

d. Measure P_x for coil-only split systems and for blower coil split systems for which a furnace or a modular blower is the designated air mover: Disconnect all low-voltage wiring for the *outdoor* components and *outdoor* controls from the low-voltage transformer. Determine the average power from non-zero value data measured over a 5-minute interval of the power supplied to the (remaining) low-voltage components of the central air conditioner or heat pump, or low-voltage power, P_x. This power measurement does not include line power supplied to the outdoor unit. It is the line power supplied to the air mover, or, if a compatible transformer is used instead of an air mover, it is the line power supplied to the transformer primary coil. If a compatible transformer is used instead of an air mover and power output of the low-voltage secondary circuit is measured, P_x is zero.

e. Calculate *P2*: Set the number of compressors equal to the unit's number of single-stage compressors plus 1.75 times the unit's number of compressors that are not single-stage.

For single-package systems and blower coil split systems for which the designated air mover is not a furnace or modular blower, divide the heating season total off mode power ($P2_x$) by the number of compressors to calculate *P2*, the heating season per-compressor off mode power. Round *P2* to the nearest watt. The expression for calculating *P2* is as follows:

$$P2 = \frac{P2_x}{number\ of\ compressors}.$$

For coil-only split systems and blower coil split systems for which a furnace or a modular blower is the designated air mover, subtract the low-voltage power (P_x) from the heating season total off mode power ($P2_x$) and divide by the number of compressors to calculate *P2*, the heating season per-compressor off mode power. Round *P2* to the nearest watt. The expression for calculating *P2* is as follows:

$$P2 = \frac{P2_x - P_x}{number\ of\ compressors}.$$

f. Shoulder-season per-compressor off mode power, P1: If the system does not have a crankcase heater, has a crankcase heater without controls that is not self-regulating, or has a value for the crankcase heater turn-on temperature (as certified in the DOE Compliance Certification Database) that is higher than 71 °F, P1 is equal to P2.

Otherwise, de-energize the crankcase heater (by removing the thermostat bypass or otherwise disconnecting only the power supply to the crankcase heater) and repeat the measurement as described in section 3.13.1.c of this appendix. Designate the measured average power as $P1_x$, the shoulder season total off mode power.

Determine the number of compressors as described in section 3.13.1.e of this appendix.

For single-package systems and blower coil systems for which the designated air mover is not a furnace or modular blower, divide the shoulder season total off mode power ($P1_x$) by the number of compressors to calculate *P1*, the shoulder season per-compressor off mode power. Round *P1* to the nearest watt. The expression for calculating *P1* is as follows:

$$P1 = \frac{P1_x}{number\ of\ compressors}.$$

For coil-only split systems and blower coil split systems for which a furnace or a modular blower is the designated air mover, subtract the low-voltage power (P_x) from the shoulder season total off mode power ($P1_x$) and divide by the number of compressors to calculate *P1*, the shoulder season per-compressor off mode power. Round *P1* to the nearest watt. The expression for calculating *P1* is as follows:

$$P1 = \frac{P1_x - P_x}{number\ of\ compressors}.$$

3.13.2 This Test Determines the Off Mode Average Power Rating for Central Air Conditioners and Heat Pumps for Which Ambient Temperature Can Affect the Measurement of Crankcase Heater Power

a. Test Sample Set-up and Power Measurement: Set up the test and measurement as described in section 3.13.1.a of this appendix.

b. Configure Controls: Position a temperature sensor to measure the outdoor dry-bulb temperature in the air between 2 and 6 inches from the crankcase heater control temperature sensor or, if no such temperature sensor exists, position it in the air between 2 and 6 inches from the crankcase heater. Utilize the temperature measurements from this sensor for this portion of the test procedure. Configure the controls of the central air conditioner or heat pump so that it operates as if connected to a building thermostat that is set to the OFF position. Use a compatible building thermostat if necessary to achieve this configuration.

Conduct the test after completion of the B, B_1, or B_2 test. Alternatively, start the test when the outdoor dry-bulb temperature is at 82 °F and the temperature of the compressor shell (or temperature of each compressor's shell if there is more than one compressor) is at least 81 °F. Then adjust the outdoor temperature at a rate of change of no more than 20 °F per hour and achieve an outdoor dry-bulb temperature of 72 °F. Maintain this temperature within ±2 °F while making the power measurement, as described in section 3.13.2.c of this appendix.

c. Measure $P1_x$: If the unit has a crankcase heater time delay, make sure that time delay function is disabled or wait until delay time has passed. Determine the average power from non-zero value data measured over a 5-minute interval of the non-operating central air conditioner or heat pump and designate the average power as $P1_x$, the shoulder season total off mode power. For units with crankcase heaters which operate during this part of the test and whose controls cycle or vary crankcase heater power over time, the test period shall consist of three complete crankcase heater cycles or 18 hours, whichever comes first. Designate the average power over the test period as $P1_x$, the shoulder season total off mode power.

d. Reduce outdoor temperature: Approach the target outdoor dry-bulb temperature by adjusting the outdoor temperature at a rate of change of no more than 20 °F per hour. This target temperature is five degrees Fahrenheit less than the temperature specified by the manufacturer in the DOE Compliance Certification Database at which the crankcase heater turns on. Maintain the target temperature within ±2 °F while making the power measurement, as described in section 3.13.2.e of this appendix.

e. Measure $P2_x$: If the unit has a crankcase heater time delay, make sure that time delay function is disabled or wait until delay time has passed. Determine the average non-zero power of the non-operating central air conditioner or heat pump over a 5-minute interval and designate it as $P2_x$, the heating season total off mode power. For units with crankcase heaters whose controls cycle or vary crankcase heater power over time, the test period shall consist of three complete crankcase heater cycles or 18 hours, whichever comes first. Designate the average power over the test period as $P2_x$, the heating season total off mode power.

f. Measure P_x for coil-only split systems and for blower coil split systems for which a furnace or modular blower is the designated air mover: Disconnect all low-voltage wiring for the *outdoor* components and *outdoor* controls from the low-voltage transformer. Determine the average power from non-zero value data measured over a 5-minute interval of the power supplied to the (remaining) low-voltage components of the central air conditioner or heat pump, or low-voltage power, P_x.. This power measurement does not include line power supplied to the outdoor unit. It is the line power supplied to the air mover, or, if a compatible transformer is used instead of an air mover, it is the line power supplied to the transformer primary coil. If a compatible transformer is used instead of an air mover and power output of the low-voltage secondary circuit is measured, P_x is zero.

g. Calculate *P1*:

Set the number of compressors equal to the unit's number of single-stage compressors plus 1.75 times the unit's number of compressors that are not single-stage.

For single-package systems and blower coil split systems for which the air mover is not a furnace or modular blower, divide the shoulder season total off mode power ($P1_x$) by the number of compressors to calculate *P1*, the shoulder season per-compressor off mode power. Round to the nearest watt. The expression for calculating *P1* is as follows:

$$P1 = \frac{P1_x}{number\ of\ compressors}.$$

For coil-only split systems and blower coil split systems for which a furnace or a modular blower is the designated air mover, subtract the low-voltage power (P_x) from the shoulder season total off mode power ($P1_x$) and divide by the number of compressors to calculate *P1*, the shoulder season per-compressor off mode power. Round to the nearest watt. The expression for calculating *P1* is as follows:

$$P1 = \frac{P1_x - P_x}{number\ of\ compressors}.$$

h. Calculate *P2*:

Determine the number of compressors as described in section 3.13.2.g of this appendix.

For single-package systems and blower coil split systems for which the air mover is not a furnace, divide the heating season total off mode power ($P2_x$) by the number of compressors to calculate *P2*, the heating season per-compressor off mode power. Round to the nearest watt. The expression for calculating *P2* is as follows:

$$P2 = \frac{P2_x}{number\ of\ compressors}.$$

For coil-only split systems and blower coil split systems for which a furnace or a modular blower is the designated air mover, subtract the low-voltage power (P_x) from the heating season total off mode power ($P2_x$) and divide by the number of compressors to calculate *P2*, the heating season per-compressor off mode power. Round to the nearest watt. The expression for calculating *P2* is as follows:

$$P2 = \frac{P2_x - P_x}{number\ of\ compressors}.$$

4. Calculations of Seasonal Performance Descriptors

4.1 Seasonal Energy Efficiency Ratio (SEER) Calculations. SEER must be calculated as follows: For equipment covered under sections 4.1.2, 4.1.3, and 4.1.4 of this appendix, evaluate the seasonal energy efficiency ratio,

$$\text{Equation 4.1-1 } SEER = \frac{\sum_{j=1}^{8} q_c(T_j)}{\sum_{j=1}^{8} e_c(T_j)} = \frac{\sum_{j=1}^{8} \frac{q_c(T_j)}{N}}{\sum_{j=1}^{8} \frac{e_c(T_j)}{N}}$$

where:

$\frac{q_c(T_j)}{N}$ = the ratio of the total space cooling provided during periods of the space cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season (N), Btu/h.

$\frac{e_c(T_j)}{N}$ = the electrical energy consumed by the test unit during periods of the space cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season (N), W.

T_j = the outdoor bin temperature, °F. Outdoor temperatures are grouped or ''binned.'' Use bins of 5 °F with the 8 cooling season bin temperatures being 67, 72, 77, 82, 87, 92, 97, and 102 °F.

j = the bin number. For cooling season calculations, j ranges from 1 to 8.

Additionally, for sections 4.1.2, 4.1.3, and 4.1.4 of this appendix, use a building cooling load, $BL(T_j)$. When referenced, evaluate $BL(T_j)$ for cooling using,

Equation 4.1-2 $$BL(T_j) = \frac{(T_j - 65)}{95 - 65} * \frac{\dot{Q}_c^{k=2}(95)}{1.1}$$

where:

$\dot{Q}_c^{k=2}(95)$ = the space cooling capacity determined from the A_2 test and calculated as specified in section 3.3 of this appendix, Btu/h.

1.1 = sizing factor, dimensionless.

The temperatures 95 °F and 65 °F in the building load equation represent the selected outdoor design temperature and the zero-load base temperature, respectively.

4.1.1 SEER Calculations for a Blower Coil System Having a Single-Speed Compressor and Either a Fixed-Speed Indoor Blower or a Constant-Air-Volume-Rate Indoor Blower, or a Coil-Only System Air Conditioner or Heat Pump

a. Evaluate the seasonal energy efficiency ratio, expressed in units of Btu/watt-hour, using:

$SEER = PLF(0.5) * EER_B$

where:

$EER_B = \frac{\dot{Q}_c(82)}{\dot{E}_c(82)}$ = the energy efficiency ratio determined from the B test described in sections 3.2.1, 3.1.4.1, and 3.3 of this appendix, Btu/h per watt.

$PLF(0.5) = 1 - 0.5 \cdot C_D^c$, the part-load performance factor evaluated at a cooling load factor of 0.5, dimensionless.

b. Refer to section 3.3 of this appendix regarding the definition and calculation of $\dot{Q}_c(82)$ and $\dot{E}_c(82)$. Evaluate the cooling mode cyclic degradation factor C_D^c as specified in section 3.5.3 of this appendix.

4.1.2 SEER Calculations for an Air Conditioner or Heat Pump Having a Single-Speed Compressor and a Variable-Speed Variable-Air-Volume-Rate Indoor Blower

4.1.2.1 Units Covered by Section 3.2.2.1 of This Appendix Where Indoor Blower Capacity Modulation Correlates With the Outdoor Dry Bulb Temperature

The manufacturer must provide information on how the indoor air volume rate or the indoor blower speed varies over the outdoor temperature range of 67 °F to 102 °F. Calculate SEER using Equation 4.1–1. Evaluate the quantity $q_c(T_j)/N$ in Equation 4.1–1 using,

Equation 4.1.2-1 $$\frac{q_c(T_j)}{N} = X(T_j) * \dot{Q}_c(T_j) * \frac{n_j}{N}$$

where:

$$X(T_j) = \begin{Bmatrix} BL(T_j)/\dot{Q}_c(T_j) \\ or \\ 1 \end{Bmatrix}$$ whichever is less; the cooling mode load factor for temperature bin j, dimensionless.

$\dot{Q}_c(T_j)$ = the space cooling capacity of the test unit when operating at outdoor temperature, T_j, Btu/h.

n_j/N = fractional bin hours for the cooling season; the ratio of the number of hours during the cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season, dimensionless.

a. For the space cooling season, assign n_j/N as specified in Table 19. Use Equation 4.1–2 to calculate the building load, $BL(T_j)$. Evaluate $\dot{Q}_c(T_j)$ using,

Equation 4.1.2-2 $$\dot{Q}_c(T_j) = \dot{Q}_c^{k=1}(T_j) + \frac{\dot{Q}_c^{k=2}(T_j) - \dot{Q}_c^{k=1}(T_j)}{\mathrm{FP}_c^{k=2} - \mathrm{FP}_c^{k=1}} * \left[\mathrm{FP}_c(T_j) - \mathrm{FP}_c^{k=1}\right]$$

where:

$$\dot{Q}_c^{k=1}(T_j) = \dot{Q}_c^{k=1}(82) + \frac{\dot{Q}_c^{k=1}(95) - \dot{Q}_c^{k=1}(82)}{95 - 82} * (T_j - 82)$$

the space cooling capacity of the test unit at outdoor temperature T_j if operated at the cooling minimum air volume rate, Btu/h.

$$\dot{Q}_c^{k=2}(T_j) = \dot{Q}_c^{k=2}(82) + \frac{\dot{Q}_c^{k=2}(95) - \dot{Q}_c^{k=2}(82)}{95 - 82} * (T_j - 82)$$

the space cooling capacity of the test unit at outdoor temperature T_j if operated at the Cooling full-load air volume rate, Btu/h.

b. For units where indoor blower speed is the primary control variable, $FP_c^{k=1}$ denotes the fan speed used during the required A_1 and B_1 tests (see section 3.2.2.1 of this appendix), $FP_c^{k=2}$ denotes the fan speed used during the required A_2 and B_2 tests, and $FP_c(T_j)$ denotes the fan speed used by the unit when the outdoor temperature equals T_j. For units where indoor air volume rate is the primary control variable, the three FP_c's are similarly defined only now being expressed in terms of air volume rates rather than fan speeds. Refer to sections 3.2.2.1, 3.1.4 to 3.1.4.2, and 3.3 of this appendix regarding the definitions and calculations of $\dot{Q}_c^{k=1}(82)$, $\dot{Q}_c^{k=1}(95)$, $\dot{Q}_c^{k=2}(82)$, and $\dot{Q}_c^{k=2}(95)$.

Calculate $e_c(T_j)/N$ in Equation 4.1-1 using, Equation 4.1.2-3 $$\frac{e_c(T_j)}{N} = \frac{X(T_j) * \dot{E}_c(T_j)}{PLF_j} * \frac{n_j}{N}$$

where:

$PLF_j = 1 - C_D^c \cdot [1 - X(T_j)]$, the part load factor, dimensionless.

$\dot{E}_c(T_j)$ = the electrical power consumption of the test unit when operating at outdoor temperature T_j, W.

c. The quantities $X(T_j)$ and n_j/N are the same quantities as used in Equation 4.1.2–1. Evaluate the cooling mode cyclic degradation factor C_D^c as specified in section 3.5.3 of this appendix.

d. Evaluate $\dot{E}_c(T_j)$ using,

$$\dot{E}_c(T_j) = \dot{E}_c^{k=1}(T_j) + \frac{\dot{E}_c^{k=2}(T_j) - \dot{E}_c^{k=1}(T_j)}{\mathrm{FP}_c^{k=2} - \mathrm{FP}_c^{k=1}} * \left[\mathrm{FP}_c(T_j) - \mathrm{FP}_c^{k=1}\right]$$

where:

$$\dot{E}_c^{k=1}(T_j) = \dot{E}_c^{k=1}(82) + \frac{\dot{E}_c^{k=1}(95) - \dot{E}_c^{k=1}(82)}{95-82} * (T_j - 82)$$

the electrical power consumption of the test unit at outdoor temperature T_j if operated at the Cooling Minimum Air Volume Rate, W.

$\dot{E}_c^{k=2}(T_j) = \dot{E}_c^{k=2}(82) + \frac{\dot{E}_c^{k=2}(95) - \dot{E}_c^{k=2}(82)}{95-82} * (T_j - 82)$ the electrical power consumption of the test unit at outdoor temperature T_j if operated at the cooling full-load air volume rate, W.

e. The parameters $FP_c^{k=1}$, and $FP_c^{k=2}$, and $FP_c(T_j)$ are the same quantities that are used when evaluating Equation 4.1.2–2. Refer to sections 3.2.2.1, 3.1.4 to 3.1.4.2, and 3.3 of this appendix regarding the definitions and calculations of $\dot{E}_c^{k=1}(82)$, $\dot{E}_c^{k=1}(95)$, $\dot{E}_c^{k=2}(82)$, and $\dot{E}_c^{k=2}(95)$.

4.1.2.2 Units Covered by Section 3.2.2.2 of This Appendix Where Indoor Blower Capacity Modulation Is Used To Adjust the Sensible to Total Cooling Capacity Ratio. Calculate SEER as specified in section 4.1.1 of this appendix.

4.1.3 SEER Calculations for an Air Conditioner or Heat Pump Having a Two-Capacity Compressor

Calculate SEER using Equation 4.1–1. Evaluate the space cooling capacity, $\dot{Q}_c^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=1}(T_j)$, of the test unit when operating at low compressor capacity and outdoor temperature T_j using,

Equation 4.1.3-1 $$\dot{Q}_c^{k=1}(T_j) = \dot{Q}_c^{k=1}(67) + \frac{\dot{Q}_c^{k=1}(82) - \dot{Q}_c^{k=1}(67)}{82-67} * (T_j - 67)$$

Equation 4.1.3-2 $$\dot{E}_c^{k=1}(T_j) = \dot{E}_c^{k=1}(67) + \frac{\dot{E}_c^{k=1}(82) - \dot{E}_c^{k=1}(67)}{82-67} * (T_j - 67)$$

where $\dot{Q}_c^{k=1}(82)$ and $\dot{E}_c^{k=1}(82)$ are determined from the B_1 test, $\dot{Q}_c^{k=1}(67)$ and $\dot{E}_c^{k=1}(67)$ are determined from the F_1 test, and all four quantities are calculated as specified in section 3.3 of this appendix. Evaluate the space cooling capacity, $\dot{Q}_c^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=2}(T_j)$, of the test unit when operating at high compressor capacity and outdoor temperature T_j using,

Equation 4.1.3-3 $$\dot{Q}_c^{k=2}(T_j) = \dot{Q}_c^{k=2}(82) + \frac{\dot{Q}_c^{k=2}(95) - \dot{Q}_c^{k=2}(82)}{95-82} * (T_j - 82)$$

Equation 4.1.3-4 $$\dot{E}_c^{k=2}(T_j) = \dot{E}_c^{k=2}(82) + \frac{\dot{E}_c^{k=2}(95) - \dot{E}_c^{k=2}(82)}{95-82} * (T_j - 82)$$

where $\dot{Q}_c^{k=2}(95)$ and $\dot{E}_c^{k=2}(95)$ are determined from the A_2 test, $\dot{Q}_c^{k=2}(82)$, and $\dot{E}_c^{k=2}(82)$, are determined from the B_2test, and all are calculated as specified in section 3.3 of this appendix.

The calculation of Equation 4.1–1 quantities $q_c(T_j)/N$ and $e_c(T_j)/N$ differs depending on whether the test unit would operate at low capacity (section 4.1.3.1 of this appendix), cycle between low and high capacity (section 4.1.3.2 of this appendix), or operate at high capacity (sections 4.1.3.3 and 4.1.3.4 of this appendix) in responding to the building load. For units that lock out low capacity operation at higher outdoor temperatures, the outdoor temperature at which the unit locks out must be that specified by the manufacturer in the certification report so that the appropriate equations are used. Use Equation 4.1–2 to calculate the building load, $BL(T_j)$, for each temperature bin.

4.1.3.1 Steady-State Space Cooling Capacity at Low Compressor Capacity Is Greater Than or Equal to the Building Cooling Load at Temperature T_j, $\dot{Q}_c^{k=1}(T_j) \geq BL(T_j)$

$$\frac{q_c(T_j)}{N} = X^{k=1}(T_j) * \dot{Q}_c^{k=1}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \frac{X^{k=1}(T_j) * \dot{E}_c^{k=1}(T_j)}{PLF_j} * \frac{n_j}{N}$$

where:

$X^{k=1}(T_j) = BL(T_j)/\dot{Q}_c^{k=1}(T_j)$, the cooling mode low capacity load factor for temperature bin j, dimensionless.

$PLF_j = 1 - C_D^c \cdot [1 - X^{k=1}(T_j)]$, the part load factor, dimensionless.

$\frac{n_j}{N}$ = fractional bin hours for the cooling season; the ratio of the number of hours during the cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season, dimensionless.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–1 and 4.1.3–2, respectively, to evaluate $\dot{Q}_c^{k=1}(T_j)$ and $\dot{E}_c^{k=1}(T_j)$. Evaluate the cooling mode cyclic degradation factor C_D^c as specified in section 3.5.3 of this appendix.

TABLE 19—DISTRIBUTION OF FRACTIONAL HOURS WITHIN COOLING SEASON TEMPERATURE BINS

Bin number, j	Bin temperature range °F	Representative temperature for bin °F	Fraction of of total temperature bin hours, n_j/N
1	65–69	67	0.214
2	70–74	72	0.231
3	75–79	77	0.216
4	80–84	82	0.161
5	85–89	87	0.104
6	90–94	92	0.052
7	95–99	97	0.018
8	100–104	102	0.004

4.1.3.2 Unit Alternates Between High (k=2) and Low (k=1) Compressor Capacity To Satisfy the Building Cooling Load at Temperature T_j, $\dot{Q}_c^{k=1}(T_j)$ $BL(T_j)$ $\dot{Q}_c^{k=2}(T_j)$

$$\frac{q_c(T_j)}{N} = [X^{k=1}(T_j) * \dot{Q}_c^{k=1}(T_j) + X^{k=2}(T_j) * \dot{Q}_c^{k=2}(T_j)] * \frac{n_j}{N}$$

$$\frac{e_c(T_j)}{N} = [X^{k=1}(T_j) * \dot{E}_c^{k=1}(T_j) + X^{k=2}(T_j) * \dot{E}_c^{k=2}(T_j)] * \frac{n_j}{N}$$

where:

$X^{k=1}(T_j) = \frac{\dot{Q}_c^{k=2}(T_j) - BL(T_j)}{\dot{Q}_c^{k=2}(T_j) - \dot{Q}_c^{k=1}(T_j)}$ the cooling mode, low capacity load factor for temperature bin j, dimensionless.

$X^{k=2}(T_j) = 1 - X^{k=1}(T_j)$, the cooling mode, high capacity load factor for temperature bin j, dimensionless.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–1 and 4.1.3–2, respectively, to evaluate $\dot{Q}_c^{k=1}(T_j)$ and $\dot{E}_c^{k=1}(T_j)$. Use Equations 4.1.3–3 and 4.1.3–4, respectively, to evaluate $\dot{Q}_c^{k=2}(T_j)$ and $\dot{E}_c^{k=2}(T_j)$.

4.1.3.3 Unit Only Operates at High (k=2) Compressor Capacity at Temperature T_j and Its Capacity Is Greater Than the Building Cooling Load, $BL(T_j)$ $\dot{Q}_c^{k=2}(T_j)$. This section applies to units that lock out low compressor capacity operation at higher outdoor temperatures.

$$\frac{q_c(T_j)}{N} = X^{k=2}(T_j) * \dot{Q}_c^{k=2}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \frac{X^{k=2}(T_j) * \dot{E}_c^{k=2}(T_j)}{PLF_j} * \frac{n_j}{N}$$

where:

$X^{k=2}(T_j) = BL(T_j)/\dot{Q}_c^{k=2}(T_j)$, the cooling mode high capacity load factor for temperature bin j, dimensionless.

$PLF_j = 1 - C_D^c(k = 2) * [1 - X^{k=2}(T_j)$ the part load factor, dimensionless.

Obtain the fraction bin hours for the cooling season, $\frac{n_j}{N}$, from Table 19. Use Equations 4.1.3-3 and 4.1.3-4, respectively, to evaluate $\dot{Q}_c^{k=2}(T_j)$ and $\dot{E}_c^{k=2}(T_j)$. If the C_2 and D_2 tests described in section 3.2.3 and Table 7 of this appendix are not conducted, set C_D^c (k=2) equal to the default value specified in section 3.5.3 of this appendix.

4.1.3.4 Unit Must Operate Continuously at High (k=2) Compressor Capacity at Temperature T_j, $BL(T_j) \geq \dot{Q}_c^{k=2}(T_j)$

$$\frac{q_c(T_j)}{N} = \dot{Q}_c^{k=2}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \dot{E}_c^{k=2}(T_j) * \frac{n_j}{N}$$

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–3 and 4.1.3–4, respectively, to evaluate $\dot{Q}_c^{k=2}(T_j)$ and $\dot{E}_c^{k=2}(T_j)$.

4.1.4 SEER Calculations for an Air Conditioner or Heat Pump Having a Variable-Speed Compressor

Calculate SEER using Equation 4.1–1. Evaluate the space cooling capacity, $\dot{Q}_c^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=1}(T_j)$, of the test unit when operating at minimum compressor speed and outdoor temperature T_j. Use,

$$\text{Equation 4.1.4-1} \quad \dot{Q}_c^{k=1}(T_j) = \dot{Q}_c^{k=1}(67) + \frac{\dot{Q}_c^{k=1}(82) - \dot{Q}_c^{k=1}(67)}{82-67} * (T_j - 67)$$

$$\text{Equation 4.1.4-2} \quad \dot{E}_c^{k=1}(T_j) = \dot{E}_c^{k=1}(67) + \frac{\dot{E}_c^{k=1}(82) - \dot{E}_c^{k=1}(67)}{82-67} * (T_j - 67)$$

where $\dot{Q}_c^{k=1}(82)$ and $\dot{E}_c^{k=1}(82)$ are determined from the B_1 test, $\dot{Q}_c^{k=1}(67)$ and $\dot{E}_c^{k=1}(67)$ are determined from the F1 test, and all four quantities are calculated as specified in section 3.3 of this appendix.

Evaluate the space cooling capacity, $\dot{Q}_c^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=2}(T_j)$, of the test unit when operating at full compressor speed and outdoor temperature T_j. Use Equations 4.1.3–3 and 4.1.3–4, respectively, where $\dot{Q}_c^{k=2}(95)$ and $\dot{E}_c^{k=2}(95)$ are determined from the A_2 test, $\dot{Q}_c^{k=2}(82)$ and $\dot{E}_c^{k=2}(82)$ are determined from the B_2 test, and all four quantities are calculated as specified in section 3.3 of this appendix. Calculate the space cooling capacity, $\dot{Q}_c^{k=v}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=v}(T_j)$, of the test unit when operating at outdoor temperature T_j and the intermediate compressor speed used during the section 3.2.4 (and Table 8) E_V test of this appendix using,

$$\text{Equation 4.1.4-3} \quad \dot{Q}_c^{k=v}(T_j) = \dot{Q}_c^{k=v}(87) + M_Q * (T_j - 87)$$

$$\text{Equation 4.1.4-4} \quad \dot{E}_c^{k=v}(T_j) = \dot{E}_h^{k=v}(87) + M_E * (T_j - 87)$$

where $\dot{Q}_c^{k=v}(87)$ and $\dot{E}_c^{k=v}(87)$ are determined from the E_V test and calculated as specified in section 3.3 of this appendix.

Approximate the slopes of the k=v intermediate speed cooling capacity and electrical power input curves, M_Q and M_E, as follows:

$$M_Q = \left[\frac{\dot{Q}_c^{k=1}(82) - \dot{Q}_c^{k=1}(67)}{82-67} * (1 - N_Q)\right] + \left[N_Q * \frac{\dot{Q}_c^{k=2}(95) - \dot{Q}_c^{k=2}(82)}{95-82}\right]$$

$$M_E = \left[\frac{\dot{E}_c^{k=1}(82) - \dot{E}_c^{k=1}(67)}{82-67} * (1 - N_E)\right] + \left[N_E * \frac{\dot{E}_c^{k=2}(95) - \dot{E}_c^{k=2}(82)}{95-82}\right]$$

where,

$$N_Q = \frac{\dot{Q}_c^{k=v}(87) - \dot{Q}_c^{k=1}(87)}{\dot{Q}_c^{k=2}(87) - \dot{Q}_c^{k=1}(87)} \qquad N_E = \frac{\dot{E}_c^{k=v}(87) - \dot{E}_c^{k=1}(87)}{\dot{E}_c^{k=2}(87) - \dot{E}_c^{k=1}(87)}$$

Use Equations 4.1.4–1 and 4.1.4–2, respectively, to calculate $\dot{Q}_c^{k=1}(87)$ and $\dot{E}_c^{k=1}(87)$.

4.1.4.1 Steady-State Space Cooling Capacity When Operating at Minimum Compressor Speed Is Greater Than or Equal to the Building Cooling Load at Temperature T_j, $\dot{Q}_c^{k=1}(T_j) \geq BL(T_j)$

$$\frac{q_c(T_j)}{N} = X^{k=1}(T_j) * \dot{Q}_c^{k=1}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \frac{X^{k=1}(T_j) * \dot{E}_c^{k=1}(T_j)}{PLF_j} * \frac{n_j}{N}$$

where:

$X^{k=1}(T_j) = BL(T_j)/\dot{Q}_c^{k=1}(T_j)$, the cooling mode minimum speed load factor for temperature bin j, dimensionless.

$PLF_j = 1 - C_D^c \cdot [1 - X^{k=1}(T_j)]$, the part load factor, dimensionless.

n_j/N = fractional bin hours for the cooling season; the ratio of the number of hours during the cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season, dimensionless.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–1 and 4.1.3–2, respectively, to evaluate $\dot{Q}_c^{k=1}(T_j)$ and $\dot{E}_c^{k=1}(T_j)$. Evaluate the cooling mode cyclic degradation factor C_D^c as specified in section 3.5.3 of this appendix.

4.1.4.2 Unit Operates at an Intermediate Compressor Speed (k=i) In Order To Match the Building Cooling Load at Temperature T_j, $\dot{Q}_c^{k=1}(T_j)$ $BL(T_j)$ $\dot{Q}_c^{k=2}(T_j)$

$$\frac{q_c(T_j)}{N} = \dot{Q}_c^{k=i}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \dot{E}_c^{k=i}(T_j) * \frac{n_j}{N}$$

where:

$\dot{Q}_c^{k=i}(T_j) = BL(T_j)$, the space cooling capacity delivered by the unit in matching the building load at temperature T_j, Btu/h. The matching occurs with the unit operating at compressor speed k = i.

$\dot{E}_c^{k=i}(T_j) = \frac{\dot{Q}_c^{k=i}(T_j)}{EER^{k=i}(T_j)}$ the electrical power input required by the test unit when operating at a compressor speed of k = i and temperature T_j, W.

$EER^{k=i}(T_j)$ = the steady-state energy efficiency ratio of the test unit when operating at a compressor speed of k = i and temperature T_j, Btu/h per W.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. For each temperature bin where the unit operates at an intermediate compressor speed, determine the energy efficiency ratio $EER^{k=i}(T_j)$ using, $EER^{k=i}(T_j) = A + B \cdot T_j + C \cdot T_j^2$.

For each unit, determine the coefficients A, B, and C by conducting the following calculations once:

$$D = \frac{T_2^2 - T_1^2}{T_v^2 - T_1^2} \qquad B = \frac{EER^{k=1}(T_1) - EER^{k=2}(T_2) - D*[EER^{k=1}(T_1) - EER^{k=v}(T_v)]}{T_1 - T_2 - D*(T_1 - T_v)}$$

$$C = \frac{EER^{k=1}(T_1) - EER^{k=2}(T_2) - B*(T_1 - T_2)}{T_1^2 - T_2^2} \qquad A = EER^{k=1}(T_2) - B * T_2 - C * T_2^2$$

where:

T_1 = the outdoor temperature at which the unit, when operating at minimum compressor speed, provides a space cooling capacity that is equal to the building load ($\dot{Q}_c^{k=1}(T_1) = BL(T_1)$), °F. Determine T_1 by equating Equations 4.1.3–1 and 4.1–2 and solving for outdoor temperature.

T_v = the outdoor temperature at which the unit, when operating at the intermediate compressor speed used during the section 3.2.4 E_V test of this appendix, provides a space cooling capacity that is equal to the building load ($\dot{Q}_c^{k=v}(T_v) = BL(T_v)$), °F. Determine T_v by equating Equations 4.1.4–3 and 4.1–2 and solving for outdoor temperature.

T_2 = the outdoor temperature at which the unit, when operating at full compressor speed, provides a space cooling capacity that is equal to the building load ($\dot{Q}_c^{k=2}(T_2) = BL(T_2)$), °F. Determine T_2 by equating Equations 4.1.3–3 and 4.1–2 and solving for outdoor temperature.

$$EER^{k=1}(T_1) = \frac{\dot{Q}_c^{k=1}(T_j)[Eqn.\,4.1.4-1, substituting\ T_1\ for\ T_j]}{\dot{E}_c^{k=1}(T_j)[Eqn.\,4.1.4-2, substituting\ T_1\ for\ T_j]}, Btu/h \text{ per } W$$

$$EER^{k=v}(T_v) = \frac{\dot{Q}_c^{k=v}(T_v)[Eqn.\,4.1.4-3, substituting\ T_v\ for\ T_j]}{\dot{E}_c^{k=v}(T_v)[Eqn.\,4.1.4-4, substituting\ T_v\ for\ T_j]}, Btu/h \text{ per } W$$

$$EER^{k=2}(T_2) = \frac{\dot{Q}_c^{k=2}(T_2)[Eqn.\,4.1.3-3, substituting\ T_2\ for\ T_j]}{\dot{E}_c^{k=2}(T_2)[Eqn.\,4.1.3-4, substituting\ T_2\ for\ T_j]}, Btu/h \text{ per } W$$

4.1.4.3 Unit Must Operate Continuously at Full (k=2) Compressor Speed at Temperature Tj, $BL(T_j) \geq \dot{Q}_c^{k=2}(T_j)$. Evaluate the Equation 4.1–1 Quantities

$$\frac{q_c(T_j)}{N} \text{ and } \frac{e_c(T_j)}{N}$$

as specified in section 4.1.3.4 of this appendix with the understanding that $\dot{Q}_c^{k=2}(T_j)$ and $\dot{E}_c^{k=2}(T_j)$ correspond to full compressor speed operation and are derived from the results of the tests specified in section 3.2.4 of this appendix.

4.1.5 SEER Calculations for an Air Conditioner or Heat Pump Having a Single Indoor Unit With Multiple Indoor Blowers

Calculate SEER using Eq. 4.1–1, where $q_c(Tj)/N$ and $e_c(Tj)/N$ are evaluated as specified in the applicable subsection.

4.1.5.1 For Multiple Indoor Blower Systems That Are Connected to a Single, Single-Speed Outdoor Unit

a. Calculate the space cooling capacity, $\dot{Q}_c^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=1}(T_j)$, of the test unit when operating at the cooling minimum air volume rate and outdoor temperature T_j using the equations given in section 4.1.2.1 of this appendix. Calculate the space cooling capacity, $\dot{Q}_c^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=2}(T_j)$, of the test unit when operating at the cooling full-load air volume rate and outdoor temperature T_j using the equations given in section 4.1.2.1 of this appendix. In evaluating the section 4.1.2.1 equations, determine the quantities $\dot{Q}_c^{k=1}(82)$ and $\dot{E}_c^{k=1}(82)$ from the B1 test, $\dot{Q}_c^{k=1}(95)$ and $\dot{E}_c^{k=1}(95)$ from the Al test, $\dot{Q}_c^{k=2}(82)$ and $\dot{E}_c^{k=2}(82)$ from the B2 test, and $\dot{Q}_c^{k=2}(95)$ and $\dot{E}_c^{k=2}(95)$ from the A2 test. Evaluate all eight quantities as specified in section 3.3 of this appendix. Refer to section 3.2.2.1 and Table 6 of this appendix for additional information on the four referenced laboratory tests.

b. Determine the cooling mode cyclic degradation coefficient, CD_c, as per sections 3.2.2.1 and 3.5 to 3.5.3 of this appendix. Assign this same value to $CD_c(K=2)$.

c. Except for using the above values of $\dot{Q}_c^{k=1}(T_j)$, $\dot{E}_c^{k=1}(T_j)$, $\dot{E}_c^{k=2}(T_j)$, $\dot{Q}_c^{k=2}(T_j)$, CD_c, and CD_c (K=2), calculate the quantities $q_c(T_j)/N$ and $e_c(T_j)/N$ as specified in section 4.1.3.1 of this appendix for cases where $\dot{Q}_c^{k=1}(T_j) \geq BL(T_j)$. For all other outdoor bin temperatures, T_j, calculate $q_c(Tj)/N$ and $e_c(Tj)/N$ as specified in section 4.1.3.3 of this appendix if $\dot{Q}_c^{k=2}(T_j) > BL(T_j)$ or as specified in section 4.1.3.4 of this appendix if $\dot{Q}_c^{k=2}(T_j) \leq BL(T_j)$.

4.1.5.2 Unit Operates at an Intermediate Compressor Speed (k=i) In Order To Match the Building Cooling Load at Temperature T_j, $\dot{Q}_c^{k=1}(T_j) < BL(T_j) < \dot{Q}_c^{k=2}(T_j)$

$$\frac{q_c(T_j)}{N} = \dot{Q}_c^{k=i}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \dot{E}_c^{k=i}(T_j) * \frac{n_j}{N}$$

where,

$\dot{Q}_c^{k=i}(T_j) = BL(T_j)$, the space cooling capacity delivered by the unit in matching the building load at temperature T_j, Btu/h. The matching occurs with the unit operating at compressor speed k = i.

$\dot{E}_c^{k=i}(T_j) = \frac{\dot{Q}_c^{k=i}(T_j)}{EER^{k=i}(T_j)}$, the electrical power input required by the test unit when operating at a compressor speed of k = i and temperature T_j, W.

$EER^{k=i}(T_j)$, the steady-state energy efficiency ratio of the test unit when operating at a compressor speed of k = i and temperature T_j, Btu/h per W.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. For each temperature bin where the unit operates at an intermediate compressor speed, determine the energy efficiency ratio $EER^{k=i}(T_j)$ using the following equations,

For each temperature bin where $\dot{Q}_c^{k=1}(T_j) < BL(T_j) < \dot{Q}_c^{k=v}(T_j)$,

$$EER^{k=i}(T_j) = EER^{k=1}(T_j) + \frac{EER^{k=v}(T_j) - EER^{k=1}(T_j)}{Q^{k=v}(T_j) - Q^{k=1}(T_j)} * (BL(T_j) - Q^{k=1}(T_j))$$

For each temperature bin where $\dot{Q}_c^{k=v}(T_j) \leq BL(T_j) < \dot{Q}_c^{k=2}(T_j)$,

$$EER^{k=i}(T_j) = EER^{k=v}(T_j) + \frac{EER^{k=2}(T_j) - EER^{k=v}(T_j)}{Q^{k=2}(T_j) - Q^{k=v}(T_j)} * (BL(T_j) - Q^{k=v}(T_j))$$

Where:

$EER^{k=1}(T_j)$ is the steady-state energy efficiency ratio of the test unit when operating at minimum compressor speed and temperature Tj, Btu/h per W, calculated using capacity $\dot{Q}_c^{k=1}(T_j)$ calculated using Equation 4.1.4–1 and electrical power consumption $\dot{E}_c^{k=1}(T_j)$ calculated using Equation 4.1.4–2;

$EER^{k=v}(T_j)$ is the steady-state energy efficiency ratio of the test unit when operating at intermediate compressor speed and temperature Tj, Btu/h per W, calculated using capacity $\dot{Q}_c^{k=v}(T_j)$ calculated using Equation 4.1.4–3 and electrical power consumption $\dot{E}_c^{k=v}(T_j)$ calculated using Equation 4.1.4–4;

$EER^{k=2}(T_j)$ is the steady-state energy efficiency ratio of the test unit when operating at full compressor speed and temperature Tj, Btu/h per W, calculated using capacity $\dot{Q}_c^{k=2}(T_j)$ and electrical power consumption $\dot{E}_c^{k=2}(T_j)$, both calculated as described in section 4.1.4; and

$BL(T_j)$ is the building cooling load at temperature T_j, Btu/h.

4.2 Heating Seasonal Performance Factor (HSPF) Calculations

Unless an approved alternative efficiency determination method is used, as set forth in 10 CFR 429.70(e), HSPF must be calculated as follows: Six generalized climatic regions are depicted in Figure 1 and otherwise defined in Table 20. For each of these regions and for each applicable standardized design heating requirement, evaluate the heating seasonal performance factor using,

Equation 4.2-1

$$HSPF = \frac{\sum_j^J n_j * BL(T_j)}{\sum_j^J e_h(T_j) + \sum_j^J RH(T_j)} * F_{def} = \frac{\sum_j^J \left[\frac{n_j}{N} * BL(T_j)\right]}{\sum_j^J \frac{e_h(T_j)}{N} + \sum_j^J \frac{RH(T_j)}{N}} * F_{def}$$

where:

$e2(T_j)/N$ = The ratio of the electrical energy consumed by the heat pump during periods of the space heating season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the heating season (N), W. For heat pumps having a heat comfort controller, this ratio may also include electrical energy used by resistive elements to maintain a minimum air delivery temperature (see 4.2.5).

$RH(T_j)/N$ = The ratio of the electrical energy used for resistive space heating during periods when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the heating season (N), W. Except as noted in section 4.2.5 of this appendix, resistive space heating is modeled as being used to meet that portion of the building load that the heat pump does not meet because of insufficient capacity or because the heat pump automatically turns off at the lowest outdoor temperatures. For heat pumps having a heat comfort controller, all or part of the electrical energy used by resistive heaters at a particular bin temperature may be reflected in $e_h(T_j)/N$ (see section 4.2.5 of this appendix).

T_j = the outdoor bin temperature, °F. Outdoor temperatures are ''binned'' such that calculations are only performed based one temperature within the bin. Bins of 5 °F are used.

n_j/N= Fractional bin hours for the heating season; the ratio of the number of hours during the heating season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the heating season, dimensionless. Obtain n_j/N values from Table 20.

j = the bin number, dimensionless.

J = for each generalized climatic region, the total number of temperature bins, dimensionless. Referring to Table 20, J is the highest bin number (j) having a nonzero entry for the fractional bin hours for the generalized climatic region of interest.

F_{def} = the demand defrost credit described in section 3.9.2 of this appendix, dimensionless.

$BL(T_j)$ = the building space conditioning load corresponding to an outdoor temperature of T_j; the heating season building load also depends on the generalized climatic region's outdoor design temperature and the design heating requirement, Btu/h.

TABLE 20—GENERALIZED CLIMATIC REGION INFORMATION

	Region No.					
	I	II	III	IV	V	VI
Heating Load Hours, HLH	750	1,250	1,750	2,250	2,750	*2,750
Outdoor Design Temperature, T_{OD}	37	27	17	5	−10	30

TABLE 20—GENERALIZED CLIMATIC REGION INFORMATION—Continued

		Region No.					
		I	II	III	IV	V	VI
j	T_j (°F)	Fractional Bin Hours, n_j/N					
1	62	.291	.215	.153	.132	.106	.113
2	57	.239	.189	.142	.111	.092	.206
3	52	.194	.163	.138	.103	.086	.215
4	47	.129	.143	.137	.093	.076	.204
5	42	.081	.112	.135	.100	.078	.141
6	37	.041	.088	.118	.109	.087	.076
7	32	.019	.056	.092	.126	.102	.034
8	27	.005	.024	.047	.087	.094	.008
9	22	.001	.008	.021	.055	.074	.003
10	17	0	.002	.009	.036	.055	0
11	12	0	0	.005	.026	.047	0
12	7	0	0	.002	.013	.038	0
13	2	0	0	.001	.006	.029	0
14	−3	0	0	0	.002	.018	0
15	−8	0	0	0	.001	.010	0
16	−13	0	0	0	0	.005	0
17	−18	0	0	0	0	.002	0
18	−23	0	0	0	0	.001	0

* Pacific Coast Region.

Evaluate the building heating load using

$$\text{Equation 4.2-2} \qquad BL(T_j) = \frac{(65-T_j)}{65-T_{OD}} * C * DHR$$

Where:

T_{OD} = the outdoor design temperature, °F. An outdoor design temperature is specified for each generalized climatic region in Table 20.

C = 0.77, a correction factor which tends to improve the agreement between calculated and measured building loads, dimensionless.

DHR = the design heating requirement (see section 1.2 of this appendix, Definitions), Btu/h.

Calculate the minimum and maximum design heating requirements for each generalized climatic region as follows:

$$DHR_{min} = \begin{Bmatrix} \dot{Q}_h^k(47) * \left[\frac{65-T_{OD}}{60}\right], for\ Regions\ I, II, III, IV, \& VI \\ \dot{Q}_h^k(47), \qquad for\ Region\ V \end{Bmatrix}$$

and

$$DHR_{max} = \begin{Bmatrix} 2 * \dot{Q}_h^k(47) * \left[\frac{65-T_{OD}}{60}\right], for\ Regions\ I, II, III, IV, \& VI \\ 2.2 * \dot{Q}_h^k(47), \qquad for\ Region\ V \end{Bmatrix}$$

Rounded to the nearest standardized DHR given in Table 20

where $\dot{Q}_h^k(47)$ is expressed in units of Btu/h and otherwise defined as follows:

a. For a single-speed heat pump tested as per section 3.6.1 of this appendix, $\dot{Q}_h^k(47) = \dot{Q}_h(47)$, the space heating capacity determined from the H1 test.

b. For a section 3.6.2 single-speed heat pump or a two-capacity heat pump not covered by item d, $\dot{Q}_h^k(47) = \dot{Q}_h^{k=2}(47)$, the space heating capacity determined from the H1 or $H1_2$ test.

c. For a variable-speed heat pump, $\dot{Q}_h^k(47) = \dot{Q}_h^{k=N}(47)$, the space heating capacity determined from the $H1_N$ test.

d. For two-capacity, northern heat pumps (see section 1.2 of this appendix, Definitions), $\dot{Q}^k_h(47) = \dot{Q}^{k=1}_h(47)$, the space heating capacity determined from the $H1_1$ test.

For all heat pumps, HSPF accounts for the heating delivered and the energy consumed by auxiliary resistive elements when operating below the balance point. This condition occurs when the building load exceeds the space heating capacity of the heat pump condenser. For HSPF calculations for all heat pumps, see either section 4.2.1, 4.2.2, 4.2.3, or 4.2.4 of this appendix, whichever applies.

For heat pumps with heat comfort controllers (see section 1.2 of this appendix, Definitions), HSPF also accounts for resistive heating contributed when operating above

for all heat pumps, see either section 4.2.1, 4.2.2, 4.2.3, or 4.2.4 of this appendix, whichever applies.

For heat pumps with heat comfort controllers (see section 1.2 of this appendix, Definitions), HSPF also accounts for resistive heating contributed when operating above the heat-pump-plus-comfort-controller balance point as a result of maintaining a minimum supply temperature. For heat pumps having a heat comfort controller, see section 4.2.5 of this appendix for the additional steps required for calculating the HSPF.

TABLE 21—STANDARDIZED DESIGN HEATING REQUIREMENTS

[Btu/h]
5,000
10,000
15,000
20,000
25,000
30,000
35,000
40,000
50,000
60,000
70,000
80,000

TABLE 21—STANDARDIZED DESIGN HEATING REQUIREMENTS—Continued

[Btu/h]
90,000
100,000
110,000
130,000

4.2.1 Additional Steps for Calculating the HSPF of a Blower Coil System Heat Pump Having a Single-Speed Compressor and Either a Fixed-Speed Indoor Blower or a Constant-Air-Volume-Rate Indoor Blower Installed, or a Coil-Only System Heat Pump

Equation 4.2.1-1 $$\frac{e_h(T_j)}{N} = \frac{X(T_j)*\dot{E}_h(T_j)*\delta(T_j)}{PLF_j} * \frac{n_j}{N}$$

Equation 4.2.1-2 $$\frac{RH(T_j)}{N} = \frac{BL(T_j)-[X(T_j)*\dot{Q}_h(T_j)*\delta(T_j)]}{3.413\frac{Btu/h}{W}} * \frac{n_j}{N}$$

Where:

$$X(T_j) = \begin{Bmatrix} BL(T_J)/\dot{Q}_h(T_j) \\ or \\ 1 \end{Bmatrix}$$

whichever is less; the heating mode load factor for temperature bin j, dimensionless.

$\dot{Q}_h(T_j)$ = the space heating capacity of the heat pump when operating at outdoor temperature T_j, Btu/h.

$\dot{E}_h(T_j)$ = the electrical power consumption of the heat pump when operating at outdoor temperature T_j, W.

$\delta(T_j)$ = the heat pump low temperature cut-out factor, dimensionless.

$PLF_j = 1 - \dot{C}_D^h \cdot [1 - X(T_j)]$ the part load factor, dimensionless.

Use Equation 4.2–2 to determine $BL(T_j)$. Obtain fractional bin hours for the heating season, n_j/N, from Table 20. Evaluate the heating mode cyclic degradation factor $\dot{C}_D^h$ as specified in section 3.8.1 of this appendix.

Determine the low temperature cut-out factor using

Equation 4.2.1-3 $$\delta(T_j) = \begin{Bmatrix} 0, if\ T_j \le T_{off}\ or\ \frac{\dot{Q}_h(T_j)}{3.413*\dot{E}_h(T_j)} < 1 \\ 1/2\,, if\ T_{off} < T_j \le T_{on}\ and\ \frac{\dot{Q}_h(T_j)}{3.413*\dot{E}_h(T_j)} \ge 1 \\ 1, if\ T_j > T_{on}\ and\ \frac{\dot{Q}_h(T_j)}{3.413*\dot{E}_h(T_j)} \ge 1 \end{Bmatrix}$$

Where:

T_{off} = the outdoor temperature when the compressor is automatically shut off, °F.

(If no such temperature exists, T_j is always greater than T_{off} and T_{on}).

T_{on} = the outdoor temperature when the compressor is automatically turned back on, if applicable, following an automatic shut-off, °F.

Calculate $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ using,

Equation 4.2.1-4 $$\dot{Q}_h(T_j) = \begin{cases} \dot{Q}_h(17) + \frac{[\dot{Q}_h(47)-\dot{Q}_h(17)]*(T_j-17)}{47-17},\ if\ T_j\ \ge 45\ °\text{F}\ or\ T_j\ \le 17\ °\text{F} \\ \dot{Q}_h(17) + \frac{[\dot{Q}_h(35)-\dot{Q}_h(17)]*(T_j-17)}{35-17},\ if\ 17\ °\text{F} < T_j < 45\ °\text{F} \end{cases}$$

Equation 4.2.1-5

$$\dot{E}_h(T_j) = \begin{cases} \dot{E}_h(17) + \dfrac{\left[\dot{E}_h(47) - \dot{E}_h(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\text{F}\ or\ T_j \leq 17\ °\text{F} \\ \dot{E}_h(17) + \dfrac{\left[\dot{E}_h(35) - \dot{E}_h(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\text{F} < T_j < 45\ °\text{F} \end{cases}$$

where $\dot{Q}_h(47)$ and $\dot{E}_h(47)$ are determined from the H1 test and calculated as specified in section 3.7 of this appendix; $\dot{Q}_h(35)$ and $\dot{E}_h(35)$ are determined from the H2 test and calculated as specified in section 3.9.1 of this appendix; and $\dot{Q}_h(17)$ and $\dot{E}_h(17)$ are determined from the H3 test and calculated as specified in section 3.10 of this appendix.

4.2.2 Additional Steps for Calculating the HSPF of a Heat Pump Having a Single-Speed Compressor and a Variable-Speed, Variable-Air-Volume-Rate Indoor Blower

The manufacturer must provide information about how the indoor air volume rate or the indoor blower speed varies over the outdoor temperature range of 65 °F to −23 °F. Calculate the quantities

$$\frac{e_h(T_j)}{N} \text{ and } \frac{RH(T_j)}{N}$$

in Equation 4.2–1 as specified in section 4.2.1 of this appendix with the exception of replacing references to the H1C test and section 3.6.1 of this appendix with the $H1C_1$ test and section 3.6.2 of this appendix. In addition, evaluate the space heating capacity and electrical power consumption of the heat pump $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ using

Equation 4.2.2-1 $$\dot{Q}_h(T_j) = \dot{Q}_h^{k=1}(T_j) + \frac{\dot{Q}_h^{k=2}(T_j) - \dot{Q}_h^{k=1}(T_j)}{\text{FP}_h^{k=2} - \text{FP}_h^{k=1}} * \left[\text{FP}_h(T_j) - \text{FP}_h^{k=1}\right]$$

Equation 4.2.2-2 $$\dot{E}_h(T_j) = \dot{E}_h^{k=1}(T_j) + \frac{\dot{E}_h^{k=2}(T_j) - \dot{E}_h^{k=1}(T_j)}{\text{FP}_h^{k=2} - \text{FP}_h^{k=1}} * \left[\text{FP}_h(T_j) - \text{FP}_h^{k=1}\right]$$

where the space heating capacity and electrical power consumption at both low capacity (k=1) and high capacity (k=2) at outdoor temperature Tj are determined using

Equation 4.2.2-3 $$\dot{Q}_h^k(T_j) = \begin{cases} \dot{Q}_h^k(17) + \dfrac{\left[\dot{Q}_h^k(47) - \dot{Q}_h^k(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\text{F}\ or\ T_j \leq 17\ °\text{F} \\ \dot{Q}_h^k(17) + \dfrac{\left[\dot{Q}_h^k(35) - \dot{Q}_h^k(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\text{F} < T_j < 45\ °\text{F} \end{cases}$$

Equation 4.2.2-4

$$\dot{E}_h^k(T_j) = \begin{cases} \dot{E}_h^k(17) + \dfrac{\left[\dot{E}_h^k(47) - \dot{E}_h^k(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\text{F}\ or\ T_j \leq 17\ °\text{F} \\ \dot{E}_h^k(17) + \dfrac{\left[\dot{E}_h^k(35) - \dot{E}_h^k(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\text{F} < T_j < 45\ °\text{F} \end{cases}$$

For units where indoor blower speed is the primary control variable, $FP_h^{k=1}$ denotes the fan speed used during the required $H1_1$ and $H3_1$ tests (see Table 12), $FP_h^{k=2}$ denotes the fan speed used during the required $H1_2$, $H2_2$, and $H3_2$ tests, and $FP_h(T_j)$ denotes the fan speed used by the unit when the outdoor temperature equals T_j. For units where indoor air volume rate is the primary control variable, the three FP_h's are similarly defined only now being expressed in terms of air volume rates rather than fan speeds. Determine $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test, and $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test. Calculate all four quantities as specified in section 3.7 of this appendix. Determine $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ as specified in section 3.6.2 of this appendix; determine $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ and from the $H2_2$ test and the calculation specified in section 3.9 of this appendix. Determine $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ from the $H3_1$ test, and $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test. Calculate all four quantities as specified in section 3.10 of this appendix.

4.2.3 Additional Steps for Calculating the HSPF of a Heat Pump Having a Two-Capacity Compressor

The calculation of the Equation 4.2–1 quantities differ depending upon whether the heat pump would operate at low capacity (section 4.2.3.1 of this appendix), cycle between low and high capacity (section 4.2.3.2 of this appendix), or operate at high capacity (sections 4.2.3.3 and 4.2.3.4 of this appendix) in responding to the building load. For heat pumps that lock out low capacity operation at low outdoor temperatures, the outdoor temperature at which the unit locks out must be that specified by the manufacturer in the certification report so that the appropriate equations can be selected.

$$\frac{e_h(T_j)}{N} \text{ and } \frac{RH(T_j)}{N}$$

a. Evaluate the space heating capacity and electrical power consumption of the heat pump when operating at low compressor capacity and outdoor temperature T_j using

$$\dot{Q}_h^{k=1}(T_j) = \begin{cases} \dot{Q}_h^{k=1}(47) + \dfrac{\left[\dot{Q}_h^{k=1}(62) - \dot{Q}_h^{k=1}(47)\right] * (T_j - 47)}{62 - 47}, & if\ T_j \geq 40\ °\mathrm{F} \\ \dot{Q}_h^{k=1}(17) + \dfrac{\left[\dot{Q}_h^{k=1}(35) - \dot{Q}_h^{k=1}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\mathrm{F} \leq T_j < 40\ °\mathrm{F} \\ \dot{Q}_h^{k=1}(17) + \dfrac{\left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=1}(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j < 17\ °\mathrm{F} \end{cases}$$

$$\dot{E}_h^{k=1}(T_j) = \begin{cases} \dot{E}_h^{k=1}(47) + \dfrac{\left[\dot{E}_h^{k=1}(62) - \dot{E}_h^{k=1}(47)\right] * (T_j - 47)}{62 - 47}, & if\ T_j \geq 40\ °\mathrm{F} \\ \dot{E}_h^{k=1}(17) + \dfrac{\left[\dot{E}_h^{k=1}(35) - \dot{E}_h^{k=1}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\mathrm{F} \leq T_j < 40\ °\mathrm{F} \\ \dot{E}_h^{k=1}(17) + \dfrac{\left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=1}(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j < 17\ °\mathrm{F} \end{cases}$$

b. Evaluate the space heating capacity and electrical power consumption ($\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$) of the heat pump when operating at high compressor capacity and outdoor temperature Tj by solving Equations 4.2.2–3 and 4.2.2–4, respectively, for k=2. Determine $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test, and $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test. Calculate all six quantities as specified in section 3.7 of this appendix. Determine $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$ test and, if required as described in section 3.6.3 of this appendix, determine $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ from the $H2_1$ test. Calculate the required 35 °F quantities as specified in section 3.9 of this appendix. Determine $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test and, if required as described in section 3.6.3 of this appendix, determine $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ from the $H3_1$ test. Calculate the required 17 °F quantities as specified in section 3.10 of this appendix.

4.2.3.1 Steady-State Space Heating Capacity When Operating at Low Compressor Capacity is Greater Than or Equal to the Building Heating Load at Temperature T_j, $\dot{Q}_h^{k=1}(T_j) \geq BL(T_j)$

Equation 4.2.3-1 $$\frac{e_h(T_j)}{N} = \frac{X^{k=1}(T_j) * \dot{E}_h^{k=1}(T_j) * \delta(T_j)}{PLF_j} * \frac{n_j}{N}$$

Equation 4.2.3-2 $$\frac{RH(T_j)}{N} = \frac{BL(T_j) * [1 - \delta(T_j)]}{3.413 \frac{Btu/h}{W}} * \frac{n_j}{N}$$

Where:

$X^{k=1}(T_j) = BL(T_j)/\dot{Q}_h^{k=1}(T_j)$, the heating mode low capacity load factor for temperature bin *j*, dimensionless.

$PLF_j = 1 - C_D^h \cdot [\ 1 - X^{k=1}(T_j)\ ]$, the part load factor, dimensionless.

$\delta'(T_j)$ = the low temperature cutoff factor, dimensionless.

Evaluate the heating mode cyclic degradation factor C_D^h as specified in section 3.8.1 of this appendix.

Determine the low temperature cut-out factor using

Equation 4.2.3-3 $$\delta(T_j) = \begin{cases} 0, & if\ T_j \leq T_{off} \\ 1/2, & if\ T_{off} < T_j \leq T_{on} \\ 1, & if\ T_j > T_{on} \end{cases}$$

where T_{off} and T_{on} are defined in section 4.2.1 of this appendix. Use the calculations given in section 4.2.3.3 of this appendix, and not the above, if:

a. The heat pump locks out low capacity operation at low outdoor temperatures and

b. T_j is below this lockout threshold temperature.

4.2.3.2 Heat Pump Alternates Between High (k=2) and Low (k=1) Compressor Capacity To Satisfy the Building Heating Load at a Temperature T_j, $\dot{Q}_h^{k=1}(T_j) < BL(T_j) < \dot{Q}_h^{k=2}(T_j)$

Calculate $\frac{RH(T_j)}{N}$ using Equation 4.2.3-2. Evaluate $\frac{e_h(T_j)}{N}$ using

$$\frac{e_h(T_j)}{N} = [X^{k=1}(T_j) * \dot{E}_h^{k=1}(T_j) + X^{k=2}(T_j) * \dot{E}_h^{k=2}(T_j)] * \delta(T_j) * \frac{n_j}{N}$$

where:

$$X^{k=1}(T_j) = \frac{\dot{Q}_h^{k=2}(T_j) - BL(T_j)}{\dot{Q}_h^{k=2}(T_j) - \dot{Q}_h^{k=1}(T_j)}$$

$X^{k=2}(T_j) = 1 - X^{k=1}(T_j)$ the heating mode, high capacity load factor for temperature bin $_j$, dimensionless.

Determine the low temperature cut-out factor, $\delta'(T_j)$, using Equation 4.2.3–3.

4.2.3.3 Heat Pump Only Operates at High (k=2) Compressor Capacity at Temperature T_j and its Capacity Is Greater Than the Building Heating Load, $BL(T_j) < \dot{Q}_h^{k=2}(T_j)$

This section applies to units that lock out low compressor capacity operation at low outdoor temperatures.

Calculate $\frac{RH(T_j)}{N}$ using Equation 4.2.3-2. Evaluate $\frac{e_h(T_j)}{N}$ using

$$\frac{e_h(T_j)}{N} = \frac{X^{k=2}(T_j) * \dot{E}_h^{k=2}(T_j) * \delta(T_j)}{PLF_j} * \frac{n_j}{N}$$

Where:

$X^{k=2}(T_j) = BL(T_j)/\dot{Q}_h^{k=2}(T_j)$. $PLF_j = 1 - C_D^h(k = 2) * [1 - X^{k=1}(T_j)]$

If the $H1C_2$ test described in section 3.6.3 and Table 13 of this appendix is not conducted, set C_D^h (k=2) equal to the default value specified in section 3.8.1 of this appendix.

Determine the low temperature cut-out factor, $\delta(T_j)$, using Equation 4.2.3–3.

4.2.3.4 Heat Pump Must Operate Continuously at High (k=2) Compressor Capacity at Temperature T_j, $BL(T_j) \geq \dot{Q}_h^{k=2}(T_j)$

$$\frac{e_h(T_j)}{N} = \dot{E}_h^{k=2}(T_j) * \delta'(T_j) * \frac{n_j}{N} \qquad \frac{RH(T_j)}{N} = \frac{BL(T_j) * [\dot{Q}_h^{k=2}(T_j) * \delta'(T_j)]}{3.413 \frac{Btu/h}{W}} * \frac{n_j}{N}$$

where:

$$\delta'(T_j) = \begin{cases} 0, & if\ T_j \leq T_{off}\ or\ \frac{\dot{Q}_h^{k=2}(T_j)}{3.413 * \dot{E}_h^{k=2}(T_j)} < 1 \\ 1/2, & if\ T_{off} < T_j \leq T_{on}\ and\ \frac{\dot{Q}_h^{k=2}(T_j)}{3.413 * \dot{E}_h^{k=2}(T_j)} \geq 1 \\ 1, & if\ T_j > T_{on}\ and\ \frac{\dot{Q}_h^{k=2}(T_j)}{3.413 * \dot{E}_h^{k=2}(T_j)} \geq 1 \end{cases}$$

4.2.4 Additional Steps for Calculating the HSPF of a Heat Pump Having a Variable-Speed Compressor

Calculate HSPF using Equation 4.2–1. Evaluate the space heating capacity, $\dot{Q}_h^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=1}(T_j)$, of the heat pump when operating at minimum compressor speed and outdoor temperature T_j using

$$\text{Equation 4.2.4-1} \quad \dot{Q}_h^{k=1}(T_j) = \dot{Q}_h^{k=1}(47) + \frac{\dot{Q}_h^{k=1}(62) - \dot{Q}_h^{k=1}(47)}{62-47} * (T_j - 47)$$

$$\text{Equation 4.2.4-2} \quad \dot{E}_h^{k=1}(T_j) = \dot{E}_h^{k=1}(47) + \frac{\dot{E}_h^{k=1}(62) - \dot{E}_h^{k=1}(47)}{62-47} * (T_j - 47)$$

where $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ are determined from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ are determined from the $H1_1$ test, and all four quantities are calculated as specified in section 3.7 of this appendix.

Evaluate the space heating capacity, $\dot{Q}_h^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=2}(T_j)$, of the heat pump when operating at full compressor speed and outdoor temperature T_j by solving Equations 4.2.2–3 and 4.2.2–4, respectively, for k=2. For Equation 4.2.2–3, use $\dot{Q}_{hcalc}^{k=2}(47)$ to represent $\dot{Q}_h^{k=2}(47)$, and for Equation 4.2.2–4, use $\dot{E}_{hcalc}^{k=2}(47)$ to represent $\dot{E}_{hcalc}^{k=2}(47)$—evaluate $\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ as specified in section 3.6.4b of this appendix.

$$\text{Equation 4.2.4-3} \quad \dot{Q}_h^{k=v}(T_j) = \dot{Q}_h^{k=v}(35) + M_Q * (T_j - 35)$$

$$\text{Equation 4.2.4-4} \quad \dot{E}_h^{k=v}(T_j) = \dot{E}_h^{k=v}(35) + M_E * (T_j - 35)$$

where $\dot{Q}_h^{k=v}(35)$ and $\dot{E}_h^{k=v}(35)$ are determined from the $H2_V$ test and calculated as specified in section 3.9 of this appendix. Approximate the slopes of the k=v intermediate speed heating capacity and electrical power input curves, M_Q and M_E, as follows:

$$M_Q = \left[\frac{\dot{Q}_h^{k=1}(62) - \dot{Q}_h^{k=1}(47)}{62-47} * (1 - N_Q)\right] + \left[N_Q * \frac{\dot{Q}_h^{k=2}(35) - \dot{Q}_h^{k=2}(17)}{35-17}\right]$$

$$M_E = \left[\frac{\dot{E}_h^{k=1}(62) - \dot{E}_h^{k=1}(47)}{62-47} * (1 - N_E)\right] + \left[N_E * \frac{\dot{E}_h^{k=2}(35) - \dot{E}_h^{k=2}(17)}{35-17}\right]$$

where,

$$N_Q = \frac{\dot{Q}_h^{k=v}(35) - \dot{Q}_h^{k=1}(35)}{\dot{Q}_h^{k=2}(35) - \dot{Q}_h^{k=1}(35)} \qquad N_E = \frac{\dot{E}_h^{k=v}(35) - \dot{E}_h^{k=1}(35)}{\dot{E}_h^{k=2}(35) - \dot{E}_h^{k=1}(35)}$$

Use Equations 4.2.4-1 and 4.2.4-2, respectively, to calculate $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$.

The calculation of Equation 4.2-1 quantities $\frac{RH(T_j)}{N}$ and $\frac{e_h(T_j)}{N}$ differs depending upon whether the heat pump would operate at minimum speed (section 4.2.4.1 of this appendix), operate at an intermediate speed (section 4.2.4.2 of this appendix), or operate at full speed (section 4.2.4.3 of this appendix) in responding to the building load.

4.2.4.1 Steady-State Space Heating Capacity When Operating at Minimum Compressor Speed Is Greater Than or Equal to the Building Heating Load at Temperature T_j, $\dot{Q}_h^{k=1}(T_j) \geq BL(T_j)$

Evaluate the Equation 4.2–1 quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.1 of this appendix. Except now use Equations 4.2.4–1 and 4.2.4–2 to evaluate $\dot{Q}_h^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j)$, respectively, and replace section 4.2.3.1 references to ''low capacity'' and section 3.6.3 of this appendix with ''minimum speed'' and section 3.6.4 of this appendix. Also, the last sentence of section 4.2.3.1 of this appendix does not apply.

4.2.4.2 Heat Pump Operates at an Intermediate Compressor Speed (k=i) in Order To Match the Building Heating Load at a Temperature T_j, $\dot{Q}_h^{k=1}(T_j) < BL(T_j) < \dot{Q}_h^{k=2}(T_j)$

Calculate $\frac{RH(T_j)}{N}$ using Equation 4.2.3-2 while evaluating $\frac{e_h(T_j)}{N}$ using,

$$\frac{e_h(T_j)}{N} = \dot{E}_h^{k=i}(T_j) * \delta(T_j) * \frac{n_j}{N}$$

where,

$$\dot{E}_h^{k=i}(T_j) = \frac{\dot{Q}_h^{k=i}(T_j)}{3.413\frac{Btu/h}{W} * COP^{k=i}(T_j)}$$

and $\delta(T_j)$ is evaluated using Equation 4.2.3–3 while,

$\dot{Q}_h^{k=i}(T_j) = BL(T_j)$, the space heating capacity delivered by the unit in matching the building load at temperature (T_j), Btu/h.

The matching occurs with the heat pump operating at compressor speed k=i.

$COP^{k=i}(T_j)$ = the steady-state coefficient of performance of the heat pump when operating at compressor speed k=i and temperature T_j, dimensionless.

For each temperature bin where the heat pump operates at an intermediate compressor speed, determine $COP^{k=i}(T_j)$ using the following equations,

For each temperature bin where $\dot{Q}_h^{k=1}(T_j) < BL(T_j) < \dot{Q}_h^{k=v}(T_j)$,

$$COP_h^{k=i}(T_j) = COP_h^{k=1}(T_j) + \frac{COP_h^{k=v}(T_j) - COP_h^{k=1}(T_j)}{Q_h^{k=v}(T_j) - Q_h^{k=1}(T_j)} * (BL(T_j) - Q_h^{k=1}(T_j))$$

For each temperature bin where $\dot{Q}_h^{k=v}(T_j) \leq BL(T_j) < \dot{Q}_h^{k=2}(T_j)$,

$$COP_h^{k=i}(T_j) = COP_h^{k=v}(T_j) + \frac{COP_h^{k=2}(T_j) - COP_h^{k=v}(T_j)}{Q_h^{k=2}(T_j) - Q_h^{k=v}(T_j)} * (BL(T_j) - Q_h^{k=v}(T_j))$$

Where:

$COP_h^{k=1}(T_j)$ is the steady-state coefficient of performance of the heat pump when operating at minimum compressor speed and temperature Tj, dimensionless, calculated using capacity $\dot{Q}_h^{k=1}(T_j)$ calculated using Equation 4.2.4–1 and electrical power consumption $\dot{E}_h^{k=1}(T_j)$ calculated using Equation 4.2.4–2;

$COP_h^{k=v}(T_j)$ is the steady-state coefficient of performance of the heat pump when operating at intermediate compressor speed and temperature Tj, dimensionless, calculated using capacity $\dot{Q}_h^{k=v}(T_j)$ calculated using Equation 4.2.4–3 and electrical power consumption $\dot{E}_h^{k=v}(T_j)$ calculated using Equation 4.2.4–4;

$COP_h^{k=2}(T_j)$ is the steady-state coefficient of performance of the heat pump when operating at full compressor speed and temperature Tj, dimensionless, calculated using capacity $\dot{Q}_h^{k=2}(T_j)$ and electrical power consumption $\dot{E}_h^{k=2}(T_j)$, both calculated as described in section 4.2.4; and

$BL(T_j)$ is the building heating load at temperature T_j, Btu/h.

4.2.4.3 Heat Pump Must Operate Continuously at Full (k=2) Compressor Speed at Temperature T_j, $BL(T_j) \geq \dot{Q}_h^{k=2}(T_j)$

Evaluate the Equation 4.2–1 Quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.4 of this appendix with the understanding that $\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$ correspond to full compressor speed operation and are derived from the results of the specified section 3.6.4 tests of this appendix.

4.2.5 Heat Pumps Having a Heat Comfort Controller

Heat pumps having heat comfort controllers, when set to maintain a typical minimum air delivery temperature, will cause the heat pump condenser to operate less because of a greater contribution from the resistive elements. With a conventional heat pump, resistive heating is only initiated if the heat pump condenser cannot meet the building load (*i.e.,* is delayed until a second stage call from the indoor thermostat). With a heat comfort controller, resistive heating can occur even though the heat pump condenser has adequate capacity to meet the building load (*i.e.,* both on during a first stage call from the indoor thermostat). As a result, the outdoor temperature where the heat pump compressor no longer cycles (*i.e.,* starts to run continuously), will be lower than if the heat pump did not have the heat comfort controller.

4.2.5.1 Blower Coil System Heat Pump Having a Heat Comfort Controller: Additional Steps for Calculating the HSPF of a Heat Pump Having a Single-Speed Compressor and Either a Fixed-Speed Indoor Blower or a Constant-Air-Volume-Rate Indoor Blower Installed, or a Coil-Only System Heat Pump

Calculate the space heating capacity and electrical power of the heat pump without the heat comfort controller being active as specified in section 4.2.1 of this appendix (Equations 4.2.1–4 and 4.2.1–5) for each outdoor bin temperature, T_j, that is listed in Table 20. Denote these capacities and electrical powers by using the subscript ''hp'' instead of ''h.'' Calculate the mass flow rate (expressed in pounds-mass of dry air per hour) and the specific heat of the indoor air (expressed in Btu/lbm_{da} · °F) from the results of the H1 test using:

$$\dot{m}_{da} = \overline{\dot{V}_s} * 0.075 \frac{lbm_{da}}{ft^3} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v'_n * [1 + W_n]} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v_n} * \frac{60_{min}}{hr}$$

where $\overline{\dot{V}}_s$, $\overline{\dot{V}}_{mx}$, v'_n (or v_n), and W_n are defined following Equation 3–1. For each outdoor bin temperature listed in Table 20, calculate the nominal temperature of the air leaving the heat pump condenser coil using,

$$T_0(T_j) = 70°\text{F} + \frac{\dot{Q}_{hp}(T_j)}{\dot{m}_{da} * C_{p,da}}$$

Evaluate $e_h(T_j/N)$, $RH(T_j)/N$, $X(T_j)$, PLF_j, and $\delta(T_j)$ as specified in section 4.2.1 of this appendix. For each bin calculation, use the space heating capacity and electrical power from Case 1 or Case 2, whichever applies.

Case 1. For outdoor bin temperatures where $T_o(T_j)$ is equal to or greater than T_{CC} (the maximum supply temperature determined according to section 3.1.9 of this appendix), determine $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ as specified in section 4.2.1 of this appendix (*i.e.,* $\dot{Q}_h(T_j) = \dot{Q}_{hp}(T_j)$ and $\dot{E}_{hp}(T_j) = \dot{E}_{hp}(T_j)$). **Note:** Even though $T_o(T_j) \geq T_{cc}$, resistive heating may be required; evaluate Equation 4.2.1–2 for all bins.

Case 2. For outdoor bin temperatures where $T_o(T_j) > T_{cc}$, determine $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ using,

$$\dot{Q}_h(T_j) = \dot{Q}_{hp}(T_j) + \dot{Q}_{CC}(T_j) \qquad \dot{E}_h(T_j) = \dot{E}_{hp}(T_j) + \dot{E}_{CC}(T_j)$$

where,

$$\dot{Q}_{CC}(T_j) = \dot{m}_{da} * C_{p,da} * [T_{CC} - T_0(T_j)] \qquad \dot{E}_{CC}(T_j) = \frac{\dot{Q}_{CC}(T_j)}{3.413 \frac{Btu/h}{W}}$$

Note: Even though $T_o(T_j)$ T_{cc}, additional resistive heating may be required; evaluate Equation 4.2.1–2 for all bins.

4.2.5.2 Heat Pump Having a Heat Comfort Controller: Additional Steps for Calculating the HSPF of a Heat Pump Having a Single-Speed Compressor and a Variable-Speed, Variable-Air-Volume-Rate Indoor Blower

Calculate the space heating capacity and electrical power of the heat pump without the heat comfort controller being active as specified in section 4.2.2 of this appendix (Equations 4.2.2–1 and 4.2.2–2) for each outdoor bin temperature, T_j, that is listed in Table 20. Denote these capacities and electrical powers by using the subscript ''hp'' instead of ''h.'' Calculate the mass flow rate (expressed in pounds-mass of dry air per hour) and the specific heat of the indoor air (expressed in Btu/lbm_{da} · °F) from the results of the $H1_2$ test using:

$$\dot{m}_{da} = \overline{\dot{V}_s} * 0.075 \frac{lbm_{da}}{ft^3} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v'_n * [1 + W_n]} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v_n} * \frac{60_{min}}{hr}$$

$$C_{p,da} = 0.24 + 0.444 * W_n$$

where $\overline{\dot{V}}_S$, $\overline{\dot{V}}_{mx}$, v'_n (or v_n), and W_n are defined following Equation 3–1. For each outdoor bin temperature listed in Table 20, calculate the nominal temperature of the air leaving the heat pump condenser coil using,

$$T_0(T_j) = 70°\text{F} + \frac{\dot{Q}_{hp}(T_j)}{\dot{m}_{da} * C_{p,da}}$$

Evaluate $e_h(T_j)/N$, $RH(T_j)/N$, $X(T_j)$, PLF_j, and $\delta(T_j)$ as specified in section 4.2.1 of this appendix with the exception of replacing references to the H1C test and section 3.6.1 of this appendix with the $H1C_1$ test and section 3.6.2 of this appendix. For each bin calculation, use the space heating capacity and electrical power from Case 1 or Case 2, whichever applies.

Case 1. For outdoor bin temperatures where $T_o(T_j)$ is equal to or greater than T_{CC}

(the maximum supply temperature determined according to section 3.1.9 of this appendix), determine $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ as specified in section 4.2.2 of this appendix (*i.e.* $\dot{Q}_h(T_j) = \dot{Q}_{hp}(T_j)$ and $\dot{E}_h(T_j) = \dot{E}_{hp}(T_j)$). Note: Even though $T_o(T_j) \geq T_{CC}$, resistive heating may be required; evaluate Equation 4.2.1–2 for all bins.

Case 2. For outdoor bin temperatures where $T_o(T_j)$ T_{CC}, determine $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ using,

$$\dot{Q}_h(T_j) = \dot{Q}_{hp}(T_j) + \dot{Q}_{CC}(T_j) \qquad \dot{E}_h(T_j) = \dot{E}_{hp}(T_j) + \dot{E}_{CC}(T_j)$$

where,

$$\dot{Q}_{CC}(T_j) = \dot{m}_{da} * C_{p,da} * [T_{CC} - T_0(T_j)] \qquad \dot{E}_{CC}(T_j) = \frac{\dot{Q}_{CC}(T_j)}{3.413\frac{Btu/h}{W}}$$

Note: Even though $T_o(T_j)$ T_{cc}, additional resistive heating may be required; evaluate Equation 4.2.1–2 for all bins.

4.2.5.3 Heat Pumps Having a Heat Comfort Controller: Additional Steps for Calculating the HSPF of a Heat Pump Having a Two-Capacity Compressor

Calculate the space heating capacity and electrical power of the heat pump without the heat comfort controller being active as specified in section 4.2.3 of this appendix for both high and low capacity and at each outdoor bin temperature, T_j, that is listed in Table 20. Denote these capacities and electrical powers by using the subscript ''hp'' instead of ''h.'' For the low capacity case, calculate the mass flow rate (expressed in pounds-mass of dry air per hour) and the specific heat of the indoor air (expressed in $Btu/lbm_{da} \cdot °F$) from the results of the $H1_1$ test using:

$$\dot{m}_{da}^{k=1} = \overline{\dot{V}_s} * 0.075\frac{lbm_{da}}{ft^3} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v_n' * [1 + W_n]} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v_n} * \frac{60_{min}}{hr}$$

$$C_{p,da}^{k=1} = 0.24 + 0.444 * W_n$$

where $\overline{V}_s$, $\overline{V}_{mx}$, v'_n (or v_n), and W_n are defined following Equation 3–1. For each outdoor bin temperature listed in Table 20, calculate the nominal temperature of the air leaving the heat pump condenser coil when operating at low capacity using,

$$T_0^{k=1}(T_j) = 70°F + \frac{\dot{Q}_{hp}^{k=1}(T_j)}{\dot{m}_{da}^{k=1} * C_{p,da}^{k=1}}$$

Repeat the above calculations to determine the mass flow rate ($\dot{m}_{da}^{k=2}$) and the specific heat of the indoor air ($C_{p,da}^{k=2}$) when operating at high capacity by using the results of the $H1_2$ test. For each outdoor bin temperature listed in Table 20, calculate the nominal temperature of the air leaving the heat pump condenser coil when operating at high capacity using,

$$T_0^{k=2}(T_j) = 70°F + \frac{\dot{Q}_{hp}^{k=2}(T_j)}{\dot{m}_{da}^{k=2} * C_{p,da}^{k=2}}$$

Evaluate $e_h(T_j)/N$, $RH(T_j)/N$, $X^{k=1}(T_j)$, and/or $X^{k=2}(T_j)$, PLF_j, and $\delta'(T_j)$ or $\delta''(T_j)$ as specified in section 4.2.3.1. 4.2.3.2, 4.2.3.3, or 4.2.3.4 of this appendix, whichever applies, for each temperature bin. To evaluate these quantities, use the low-capacity space heating capacity and the low-capacity electrical power from Case 1 or Case 2, whichever applies; use the high-capacity space heating capacity and the high-capacity electrical power from Case 3 or Case 4, whichever applies.

Case 1. For outdoor bin temperatures where $T_o^{k=1}(T_j)$ is equal to or greater than T_{CC} (the maximum supply temperature determined according to section 3.1.9 of this appendix), determine $\dot{Q}_h^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j)$ as specified in section 4.2.3 of this appendix (*i.e.,* $\dot{Q}_h^{k=1}(T_j) = \dot{Q}_{hp}^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j) = \dot{E}_{hp}^{k=1}(T_j)$.

Note: Even though $T_o^{k=1}(T_j) \geq T_{CC}$, resistive heating may be required; evaluate $RH(T_j)/N$ for all bins.

Case 2. For outdoor bin temperatures where $T_o^{k=1}(T_j)$ T_{CC}, determine $\dot{Q}_h^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j)$ using,

$$\dot{Q}_h^{k=1}(T_j) = \dot{Q}_{hp}^{k=1}(T_j) + \dot{Q}_{CC}^{k=1}(T_j) \qquad \dot{E}_h^{k=1}(T_j) = \dot{E}_{hp}^{k=1}(T_j) + \dot{E}_{CC}^{k=1}(T_j)$$

where,

$$\dot{Q}_{CC}^{k=1}(T_j) = \dot{m}_{da}^{k=1} * C_{p,da}^{k=1} * [T_{CC} - T_0^{k=1}(T_j)] \qquad \dot{E}_{CC}^{k=1}(T_j) = \frac{\dot{Q}_{CC}^{k=1}(T_j)}{3.413\frac{Btu/h}{W}}$$

Note: Even though $T_o^{k=1}(T_j) \geq T_{cc}$, additional resistive heating may be required; evaluate $RH(T_j)/N$ for all bins.

Case 3. For outdoor bin temperatures where $T_o^{k=2}(T_j)$ is equal to or greater than T_{CC}, determine $\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$ as specified in section 4.2.3 of this appendix (*i.e.,* $\dot{Q}_h^{k=2}(T_j) = \dot{Q}_{hp}^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j) = \dot{E}_{hp}^{k=2}(T_j)$).

Note: Even though $T_o^{k=2}(T_j) < T_{CC}$, resistive heating may be required; evaluate $RH(T_j)/N$ for all bins.

Case 4. For outdoor bin temperatures where $T_o^{k=2}(T_j) < T_{CC}$, determine $\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$ using,

$$\dot{Q}_h^{k=2}(T_j) = \dot{Q}_{hp}^{k=2}(T_j) + \dot{Q}_{CC}^{k=2}(T_j) \quad \dot{E}_h^{k=2}(T_j) = \dot{E}_{hp}^{k=2}(T_j) + \dot{E}_{CC}^{k=2}(T_j)$$

where,

$$\dot{Q}_{CC}^{k=2}(T_j) = \dot{m}_{da}^{k=2} * C_{p,da}^{k=2} * [T_{CC} - T_0^{k=2}(T_j)] \qquad \dot{E}_{CC}^{k=2}(T_j) = \frac{\dot{Q}_{CC}^{k=2}(T_j)}{3.413\frac{Btu/h}{W}}$$

Note: Even though $T_o^{k=2}(T_j) < T_{cc}$, additional resistive heating may be required; evaluate $RH(T_j)/N$ for all bins.

4.2.5.4 Heat Pumps Having a Heat Comfort Controller: Additional Steps for Calculating the HSPF of a Heat Pump Having a Variable-Speed Compressor. [Reserved]

4.2.6 Additional Steps for Calculating the HSPF of a Heat Pump Having a Triple-Capacity Compressor

The only triple-capacity heat pumps covered are triple-capacity, northern heat pumps. For such heat pumps, the calculation of the Eq. 4.2–1 quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

differ depending on whether the heat pump would cycle on and off at low capacity (section 4.2.6.1 of this appendix), cycle on and off at high capacity (section 4.2.6.2 of this appendix), cycle on and off at booster capacity (section 4.2.6.3 of this appendix), cycle between low and high capacity (section 4.2.6.4 of this appendix), cycle between high and booster capacity (section 4.2.6.5 of this appendix), operate continuously at low capacity (4.2.6.6 of this appendix), operate continuously at high capacity (section 4.2.6.7 of this appendix), operate continuously at booster capacity (section 4.2.6.8 of this appendix), or heat solely using resistive heating (also section 4.2.6.8 of this appendix) in responding to the building load. As applicable, the manufacturer must supply information regarding the outdoor temperature range at which each stage of compressor capacity is active. As an informative example, data may be submitted in this manner: At the low (k=1) compressor capacity, the outdoor temperature range of operation is 40 °F ≤ T ≤ 65 °F; At the high (k=2) compressor capacity, the outdoor temperature range of operation is 20 °F ≤ T ≤ 50 °F; At the booster (k=3) compressor capacity, the outdoor temperature range of operation is −20 °F ≤ T ≤ 30 °F.

a. Evaluate the space heating capacity and electrical power consumption of the heat pump when operating at low compressor capacity and outdoor temperature Tj using the equations given in section 4.2.3 of this appendix for $\dot{Q}_h^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j)$) In evaluating the section 4.2.3 equations, Determine $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test, and $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test. Calculate all four quantities as specified in section 3.7 of this appendix. If, in accordance with section 3.6.6 of this appendix, the $H3_1$ test is conducted, calculate $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ as specified in section 3.10 of this appendix and determine $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ as specified in section 3.6.6 of this appendix.

b. Evaluate the space heating capacity and electrical power consumption ($\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$) of the heat pump when operating at high compressor capacity and outdoor temperature Tj by solving Equations 4.2.2–3 and 4.2.2–4, respectively, for k=2. Determine $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test, and $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test, evaluated as specified in section 3.7 of this appendix. Determine the equation input for $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$, evaluated as specified in section 3.9.1 of this appendix. Also, determine $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test, evaluated as specified in section 3.10 of this appendix.

c. Evaluate the space heating capacity and electrical power consumption of the heat pump when operating at booster compressor capacity and outdoor temperature Tj using

$$\dot{Q}_h^{k=3}(T_j) = \begin{cases} \dot{Q}_h^{k=3}(17) + \dfrac{\left[\dot{Q}_h^{k=3}(35) - \dot{Q}_h^{k=3}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °F < T_j \leq 45\ °F \\ \dot{Q}_h^{k=3}(5) + \dfrac{\left[\dot{Q}_h^{k=3}(17) - \dot{Q}_h^{k=3}(5)\right] * (T_j - 5)}{17 - 5}, & if\ T_j \leq 17\ °F \end{cases}$$

$$\dot{E}_h^{k=3}(T_j) = \begin{cases} \dot{E}_h^{k=3}(17) + \dfrac{\left[\dot{E}_h^{k=3}(35) - \dot{E}_h^{k=3}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °F < T_j \leq 45\ °F \\ \dot{E}_h^{k=3}(5) + \dfrac{\left[\dot{E}_h^{k=3}(17) - \dot{E}_h^{k=3}(5)\right] * (T_j - 5)}{17 - 5}, & if\ T_j \leq 17\ °F \end{cases}$$

Determine $\dot{Q}_h^{k=3}(17)$ and $\dot{E}_h^{k=3}(17)$ from the $H3_3$ test and determine $\dot{Q}_h^{k=2}(5)$ and $\dot{E}_h^{k=3}(5)$ from the $H4_3$ test. Calculate all four quantities as specified in section 3.10 of this appendix. Determine the equation input for $\dot{Q}_h^{k=3}(35)$ and $\dot{E}_h^{k=3}(35)$ as specified in section 3.6.6 of this appendix. 4.2.6.1 Steady-State Space Heating Capacity when Operating at Low Compressor Capacity is Greater than or Equal to the Building Heating Load at Temperature T_j, $\dot{Q}_h^{k=1}(T_j) \geq BL(T_j)$., and the heat pump permits low compressor capacity at T_j.

Evaluate the quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

using Eqs. 4.2.3–1 and 4.2.3–2, respectively. Determine the equation inputs $X^{k=1}(T_j)$, PLF_j, and $\delta'(T_j)$ as specified in section 4.2.3.1 of this appendix. In calculating the part load factor, PLF_j, use the low-capacity cyclic-degradation coefficient C_D^h, [or equivalently, $C_D^h(k=1)$] determined in accordance with section 3.6.6 of this appendix.

4.2.6.2 Heat Pump Only Operates at High (k=2) Compressor Capacity at Temperature T_j and Its Capacity Is Greater Than or Equal to the Building Heating Load, $BL(T_j) < \dot{Q}_h^{k=2}(T_j)$

Evaluate the quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.3 of this appendix. Determine the equation inputs $X^{k=2}(T_j)$, PLF_j, and $\delta'(T_j)$ as specified in section 4.2.3.3 of this appendix. In calculating the part load factor, PLF_j, use the high-capacity cyclic-degradation coefficient, $C_D^h(k=2)$ determined in accordance with section 3.6.6 of this appendix.

4.2.6.3 Heat Pump Only Operates at High (k=3) Compressor Capacity at Temperature T_j and Its Capacity Is Greater Than or Equal to the Building Heating Load, $BL(T_j) \leq \dot{Q}_h^{k=3}(T_j)$

Calculate $\frac{RH(T_j)}{N}$ and using Eq. 4.2.3-2. Evaluate $\frac{e_h(T_j)}{N}$ using

$$\frac{e_h(T_j)}{N} = \frac{X^{k=3}(T_j) * \dot{E}_h^{k=3}(T_j) * \delta'(T_j)}{PLF_j} * \frac{n_j}{N}$$

where:

$X^{k=3}(T_j) = BL(T_j)/\dot{Q}_h^{k=3}(T_j)$ and $PLF_j = 1 - C_D^h(k=3) * [1 - X^{k=3}(T_j)$

Determine the low temperature cut-out factor, $\delta'(T_j)$, using Eq. 4.2.3–3. Use the booster-capacity cyclic-degradation coefficient, $C_D^h(k=3)$ determined in accordance with section 3.6.6 of this appendix.

4.2.6.4 Heat Pump Alternates Between High (k=2) and Low (k=1) Compressor Capacity to Satisfy the Building Heating Load at a Temperature T_j, $\dot{Q}_h^{k=1}(T_j) < BL(T_j) < \dot{Q}_h^{k=2}(T_j)$

Evaluate the quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.2 of this appendix. Determine the equation inputs $X^{k=1}(T_j)$, $X^{k=2}(T_j)$, and $\delta'(T_j)$ as specified in section 4.2.3.2 of this appendix.

4.2.6.5 Heat Pump Alternates Between High (k=2) and Booster (k=3) Compressor Capacity To Satisfy the Building Heating Load at a Temperature T_j, $\dot{Q}_h^{k=2}(T_j) < BL(T_j) < \dot{Q}_h^{k=3}(T_j)$

Calculate $\frac{RH(T_j)}{N}$ and using Eq. 4.2.3-2. Evaluate $\frac{e_h(T_j)}{N}$ using

$$\frac{e_h(T_j)}{N} = [X^{k=2}(T_j) * \dot{E}_h^{k=2}(T_j) + X^{k=3}(T_j) * \dot{E}_h^{k=3}(T_j)] * \delta'(T_j) * \frac{n_j}{N}$$

where:

$$X^{k=2}(T_j) = \frac{\dot{Q}_h^{k=3}(T_j) - BL(T_j)}{\dot{Q}_h^{k=3}(T_j) - \dot{Q}_h^{k=2}(T_j)}$$

and $X^{k=3}(T_j) = X^{k=2}(T_j)$ = the heating mode, booster capacity load factor for temperature bin j, dimensionless. Determine the low temperature cut-out factor, $\delta'(T_j)$, using Eq. 4.2.3–3.

4.2.6.6 Heat Pump Only Operates at Low (k=1) Capacity at Temperature T_j and Its Capacity Is Less Than the Building Heating Load, $BL(T_j) > \dot{Q}_h^{k=1}(T_j)$

$$\frac{e_h(T_j)}{N} = \dot{E}_h^{k=1}(T_j) * \delta'(T_j) * \frac{n_j}{N} \quad \text{and} \frac{RH(T_j)}{N} = \frac{BL(T_j) - [\dot{Q}_h^{k=1}(T_j) * \delta\prime(T_j)]}{3.413\frac{Btu/h}{W}} * \frac{n_j}{N}$$

where the low temperature cut-out factor, $\delta'(Tj)$, is calculated using Eq. 4.2.3–3.

4.2.6.7 Heat Pump Only Operates at High (k=2) Capacity at Temperature Tj and Its Capacity Is Less Than the Building Heating Load, $BL(Tj) > \dot{Q}_h^{k=2}(T_j)$

Evaluate the quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.4 of this appendix. Calculate $\delta''(Tj)$ using the equation given in section 4.2.3.4 of this appendix.

4.2.6.8 Heat Pump Only Operates at Booster (k=3) Capacity at Temperature Tj and Its Capacity Is Less Than the Building Heating Load, $BL(T_j) > \dot{Q}_h^{k=3}(T_j)$ or the System Converts to Using Only Resistive Heating

$$\frac{e_h(T_j)}{N} = \dot{E}_h^{k=3}(T_j) * \delta'(T_j) * \frac{n_j}{N} \quad \text{and} \frac{RH(T_j)}{N} = \frac{BL(T_j) - [\dot{Q}_h^{k=3}(T_j) * \delta\prime(T_j)]}{3.413\frac{Btu/h}{W}} * \frac{n_j}{N}$$

where $\delta''(Tj)$ is calculated as specified in section 4.2.3.4 of this appendix if the heat pump is operating at its booster compressor capacity. If the heat pump system converts to using only resistive heating at outdoor temperature T_j, set $\delta'(T_j)$ equal to zero.

4.2.7 Additional Steps for Calculating the HSPF of a Heat Pump Having a Single Indoor Unit With Multiple Indoor Blowers

The calculation of the Eq. 4.2–1 quantities $e_h(T_j)/N$ and $RH(T_j)/N$ are evaluated as specified in the applicable subsection.

4.2.7.1 For Multiple Indoor Blower Heat Pumps That Are Connected to a Singular, Single-Speed Outdoor Unit

a. Calculate the space heating capacity, $\dot{Q}_h^{k=1}(Tj)$, and electrical power consumption, $\dot{E}_h^{k=1}(Tj)$, of the heat pump when operating at the heating minimum air volume rate and outdoor temperature T_j using Eqs. 4.2.2–3 and 4.2.2–4, respectively. Use these same equations to calculate the space heating capacity, $\dot{Q}_h^{k=2}(Tj)$ and electrical power consumption, $\dot{E}_h^{k=2}(Tj)$, of the test unit when operating at the heating full-load air volume rate and outdoor temperature T_j. In evaluating Eqs. 4.2.2–3 and 4.2.2– 4, determine the quantities $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test; determine $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test. Evaluate all four quantities according to section 3.7 of this appendix. Determine the quantities $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ as specified in section 3.6.2 of this appendix. Determine $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$ frost accumulation test as calculated according to section 3.9.1 of this appendix. Determine the quantities $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ from the $H3_1$ test, and $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test. Evaluate all four quantities according to section 3.10 of this appendix. Refer to section 3.6.2 and Table 12 of this appendix for additional information on the referenced laboratory tests.

b. Determine the heating mode cyclic degradation coefficient, CD_h, as per sections

3.6.2 and 3.8 to 3.8.1 of this appendix. Assign this same value to $CD_h(k = 2)$.

c. Except for using the above values of $\dot{Q}_h^{k=1}(Tj)$, $\dot{E}_h^{k=1}(Tj)$, $\dot{Q}_h^{k=2}(Tj)$, $\dot{E}_h^{k=2}(Tj)$, CD_h, and $CD_h(k = 2)$, calculate the quantities $e_h(T_j)/N$ as specified in section 4.2.3.1 of this appendix for cases where $\dot{Q}_h^{k=1}(Tj) \geq BL(T_j)$. For all other outdoor bin temperatures, T_j, calculate $e_h(Tj)/N$ and $RH_h(Tj)/N$ as specified in section 4.2.3.3 of this appendix if $\dot{Q}_h^{k=2}(Tj) > BL(Tj)$ or as specified in section 4.2.3.4 of this appendix if $\dot{Q}_h^{k=2}(Tj) \leq BL(T_j)$.

4.2.7.2 For Multiple Indoor Blower Heat Pumps Connected to Either a Single Outdoor Unit With a Two-capacity Compressor or to Two Separate Single-Speed Outdoor Units of Identical Model, calculate the quantities $e_h(T_j)/N$ and $RH(T_j)/N$ as specified in section 4.2.3 of this appendix.

4.3 Calculations of Off-mode Power Consumption

For central air conditioners and heat pumps with a cooling capacity of:

Less than 36,000 Btu/h, determine the off mode represented value, $P_{W,OFF}$, with the following equation:

$$P_{W,OFF} = \frac{P1 + P2}{2};$$

greater than or equal to 36,000 Btu/h, calculate the capacity scaling factor according to:

$$F_{scale} = \frac{\dot{Q}_C(95)}{36{,}000},$$

where $\dot{Q}_C(95)$ is the total cooling capacity at the A or A_2 test condition, and determine the off mode represented value, $P_{W,OFF}$, with the following equation:

$$P_{W,OFF} = \frac{P1 + P2}{2 \times F_{scale}};$$

4.4 Rounding of SEER and HSPF for Reporting Purposes

After calculating SEER according to section 4.1 of this appendix and HSPF according to section 4.2 of this appendix round the values off as specified per § 430.23(m) of title 10 of the Code of Federal Regulations.

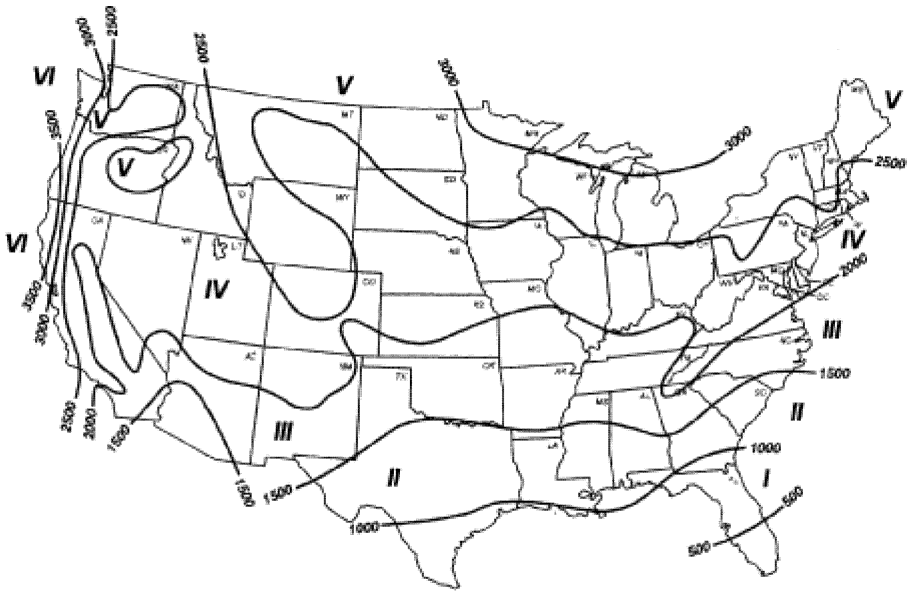

Figure 1—Heating Load Hours (HLH_A) for the United States

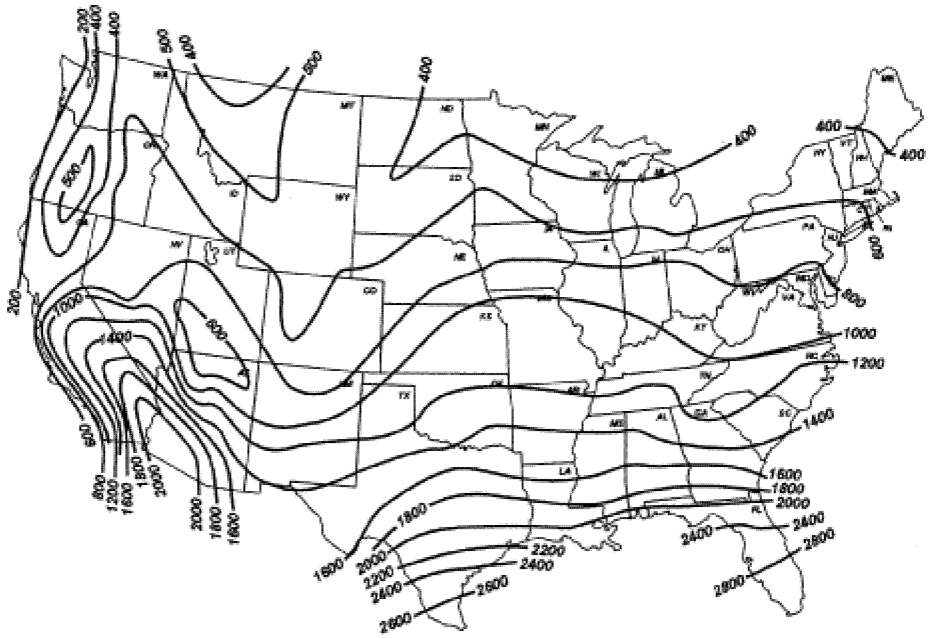

Figure 2—Cooling Load Hours (CLH_A) for the United States

TABLE 22—REPRESENTATIVE COOLING AND HEATING LOAD HOURS FOR EACH GENERALIZED CLIMATIC REGION

Climatic region	Cooling load hours CLH_R	Heating load hours HLH_R
I	2,400	750
II	1,800	1,250
III	1,200	1,750
IV	800	2,250
Rating Values	1,000	2,080
V	400	2,750
VI	200	2,750

4.5 Calculations of the SHR, Which Should Be Computed for Different Equipment Configurations and Test Conditions Specified in Table 23

TABLE 23—APPLICABLE TEST CONDITIONS FOR CALCULATION OF THE SENSIBLE HEAT RATIO

Equipment configuration	Reference table Number of appendix M	SHR computation with results from	Computed values
Units Having a Single-Speed Compressor and a Fixed-Speed Indoor blower, a Constant Air Volume Rate Indoor blower, or No Indoor blower.	4	B Test	SHR(B).
Units Having a Single-Speed Compressor That Meet the section 3.2.2.1 Indoor Unit Requirements.	5	B2 and B1 Tests	SHR(B1), SHR(B2).
Units Having a Two-Capacity Compressor	6	B2 and B1 Tests	SHR(B1), SHR(B2).
Units Having a Variable-Speed Compressor	7	B2 and B1 Tests	SHR(B1), SHR(B2).

The SHR is defined and calculated as follows:

$$SHR = \frac{Sensible\ Cooling\ Capacity}{Total\ Cooling\ Capacity}$$

$$= \frac{\dot{Q}_{sc}^{k}(T)}{\dot{Q}_{c}^{k}(T)}$$

Where both the total and sensible cooling capacities are determined from the same cooling mode test and calculated from data collected over the same 30-minute data collection interval.

4.6 Calculations of the Energy Efficiency Ratio (EER).

Calculate the energy efficiency ratio using.

$$EER = \frac{Total\ Cooling\ Capacity}{Total\ Electrical\ Power\ Consumption}$$

$$= \frac{\dot{Q}_{c}^{k}(T)}{\dot{E}_{c}^{k}(T)}$$

where $\dot{Q}_c^k(T)$ and $\dot{E}_c^k(T)$ are the space cooling capacity and electrical power consumption determined from the 30-minute data collection interval of the same steady-state wet coil cooling mode test and calculated as specified in section 3.3 of this appendix. Add the letter identification for each steady-state test as a subscript (*e.g.,* EER_{A_2}) to differentiate among the resulting EER values.

■ 10. Add appendix M1 to subpart B of part 430 to read as follows:

Appendix M1 to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps

Prior to January 1, 2023, any representations, including compliance certifications, made with respect to the energy use, power, or efficiency of central air conditioners and central air conditioning heat pumps must be based on the results of testing pursuant to appendix M of this subpart.

On or after January 1, 2023, any representations, including compliance certifications, made with respect to the energy use, power, or efficiency of central air conditioners and central air conditioning heat pumps must be based on the results of testing pursuant to this appendix.

1 Scope and Definitions

1.1 Scope

This test procedure provides a method of determining SEER2, EER2, HSPF2 and $P_{W,OFF}$ for central air conditioners and central air conditioning heat pumps including the following categories:

(h) Split-system air conditioners, including single-split, multi-head mini-split, multi-split (including VRF), and multi-circuit systems

(i) Split-system heat pumps, including single-split, multi-head mini-split, multi-split (including VRF), and multi-circuit systems

(j) Single-package air conditioners

(k) Single-package heat pumps

(l) Small-duct, high-velocity systems (including VRF)

(m) Space-constrained products—air conditioners

(n) Space-constrained products—heat pumps

For the purposes of this appendix, the Department of Energy incorporates by reference specific sections of several industry standards, as listed in § 430.3. In cases where there is a conflict, the language of the test procedure in this appendix takes precedence over the incorporated standards.

All section references refer to sections within this appendix unless otherwise stated.

1.2 Definitions

Airflow-control settings are programmed or wired control system configurations that control a fan to achieve discrete, differing ranges of airflow—often designated for performing a specific function (*e.g.,* cooling, heating, or constant circulation)—without manual adjustment other than interaction with a user-operable control (*i.e.,* a thermostat) that meets the manufacturer specifications for installed-use. For the purposes of this appendix, manufacturer specifications for installed-use are those found in the product literature shipped with the unit.

Air sampling device is an assembly consisting of a manifold with several branch tubes with multiple sampling holes that draws an air sample from a critical location from the unit under test (*e.g.* indoor air inlet, indoor air outlet, outdoor air inlet, etc.).

Airflow prevention device denotes a device that prevents airflow via natural convection by mechanical means, such as an air damper box, or by means of changes in duct height, such as an upturned duct.

Aspirating psychrometer is a piece of equipment with a monitored airflow section that draws uniform airflow through the measurement section and has probes for measurement of air temperature and humidity.

Blower coil indoor unit means an indoor unit either with an indoor blower housed with the coil or with a separate designated air mover such as a furnace or a modular blower (as defined in appendix AA to this subpart).

Blower coil system refers to a split system that includes one or more blower coil indoor units.

Cased coil means a coil-only indoor unit with external cabinetry.

Ceiling-mount blower coil system means a split system for which a) the outdoor unit has a certified cooling capacity less than or equal to 36,000 Btu/h; b) the indoor unit(s) is/are shipped with manufacturer-supplied installation instructions that specify to secure the indoor unit only to the ceiling, within a furred-down space, or above a dropped ceiling of the conditioned space, with return air directly to the bottom of the unit without ductwork, or through the furred-down space, or optional insulated return air plenum that is shipped with the indoor unit; c) the installed height of the indoor unit is no more than 12 inches (not including condensate drain lines) and the installed depth (in the direction of airflow) of the indoor unit is no more than 30 inches; and d) supply air is discharged horizontally.

Coefficient of Performance (COP) means the ratio of the average rate of space heating delivered to the average rate of electrical energy consumed by the heat pump. Determine these rate quantities from a single test or, if derived via interpolation, determine at a single set of operating conditions. COP is a dimensionless quantity. When determined for a ducted coil-only system, COP must be calculated using the default values for heat output and power input of a fan motor specified in sections 3.7 and 3.9.1 of this appendix.

Coil-only indoor unit means an indoor unit that is distributed in commerce without an indoor blower or separate designated air mover. A coil-only indoor unit installed in the field relies on a separately installed furnace or a modular blower for indoor air movement.

Coil-only system means a system that includes only (one or more) coil-only indoor units.

Condensing unit removes the heat absorbed by the refrigerant to transfer it to the outside environment and consists of an outdoor coil, compressor(s), and air moving device.

Constant-air-volume-rate indoor blower means a fan that varies its operating speed to provide a fixed air-volume-rate from a ducted system.

Continuously recorded, when referring to a dry bulb measurement, dry bulb temperature used for test room control, wet bulb temperature, dew point temperature, or relative humidity measurements, means that the specified value must be sampled at regular intervals that are equal to or less than 15 seconds.

Cooling load factor (CLF) means the ratio having as its numerator the total cooling delivered during a cyclic operating interval consisting of one ON period and one OFF period, and as its denominator the total cooling that would be delivered, given the same ambient conditions, had the unit operated continuously at its steady-state, space-cooling capacity for the same total time (ON + OFF) interval.

Crankcase heater means any electrically powered device or mechanism for intentionally generating heat within and/or around the compressor sump volume. Crankcase heater control may be achieved using a timer or may be based on a change in temperature or some other measurable parameter, such that the crankcase heater is not required to operate continuously. A crankcase heater without controls operates continuously when the compressor is not operating.

Cyclic Test means a test where the unit's compressor is cycled on and off for specific time intervals. A cyclic test provides half the information needed to calculate a degradation coefficient.

Damper box means a short section of duct having an air damper that meets the performance requirements of section 2.5.7 of this appendix.

Degradation coefficient (C_D) means a parameter used in calculating the part load factor. The degradation coefficient for cooling is denoted by C_D^c. The degradation coefficient for heating is denoted by C_D^h.

Demand-defrost control system means a system that defrosts the heat pump outdoor coil-only when measuring a predetermined degradation of performance. The heat pump's controls either:

(1) Monitor one or more parameters that always vary with the amount of frost accumulated on the outdoor coil (*e.g.,* coil to air differential temperature, coil differential air pressure, outdoor fan power or current, optical sensors) at least once for every ten minutes of compressor ON-time when space heating; or

(2) Operate as a feedback system that measures the length of the defrost period and adjusts defrost frequency accordingly. In all cases, when the frost parameter(s) reaches a predetermined value, the system initiates a defrost. In a demand-defrost control system, defrosts are terminated based on monitoring a parameter(s) that indicates that frost has been eliminated from the coil. (**Note:** Systems that vary defrost intervals according to outdoor dry-bulb temperature are not demand-defrost systems.) A demand-defrost control system, which otherwise meets the requirements, may allow time-initiated defrosts if, and only if, such defrosts occur after 6 hours of compressor operating time.

Design heating requirement (DHR) predicts the space heating load of a residence when subjected to outdoor design conditions. Estimates for the minimum and maximum DHR are provided for six generalized U.S. climatic regions in section 4.2 of this appendix.

Dry-coil tests are cooling mode tests where the wet-bulb temperature of the air supplied to the indoor unit is maintained low enough that no condensate forms on the evaporator coil.

Ducted system means an air conditioner or heat pump that is designed to be permanently installed equipment and delivers conditioned air to the indoor space through a duct(s). The air conditioner or heat pump may be either a split-system or a single-package unit.

Energy efficiency ratio (EER) means the ratio of the average rate of space cooling delivered to the average rate of electrical energy consumed by the air conditioner or heat pump. Determine these rate quantities from a single test or, if derived via interpolation, determine at a single set of operating conditions. EER is expressed in units of

$$\frac{Btu/h}{W}.$$

When determined for a ducted coil-only system, EER must include, from this appendix, the section 3.3 and 3.5.1 default values for the heat output and power input of a fan motor. The represented value of EER determined in accordance with appendix M1 is EER2.

Evaporator coil means an assembly that absorbs heat from an enclosed space and transfers the heat to a refrigerant.

Heat pump means a kind of central air conditioner that utilizes an indoor conditioning coil, compressor, and refrigerant-to-outdoor air heat exchanger to provide air heating, and may also provide air cooling, air dehumidifying, air humidifying, air circulating, and air cleaning.

Heat pump having a heat comfort controller means a heat pump with controls that can regulate the operation of the electric resistance elements to assure that the air temperature leaving the indoor section does not fall below a specified temperature. Heat pumps that actively regulate the rate of electric resistance heating when operating below the balance point (as the result of a second stage call from the thermostat) but do not operate to maintain a minimum delivery temperature are not considered as having a heat comfort controller.

Heating load factor (HLF) means the ratio having as its numerator the total heating delivered during a cyclic operating interval consisting of one ON period and one OFF period, and its denominator the heating capacity measured at the same test conditions used for the cyclic test, multiplied by the total time interval (ON plus OFF) of the cyclic-test.

Heating season means the months of the year that require heating, *e.g.,* typically, and roughly, October through April.

Heating seasonal performance factor 2 (HSPF2) means the total space heating required during the heating season, expressed in Btu, divided by the total electrical energy consumed by the heat pump system during the same season, expressed in watt-hours. The HSPF2 used to evaluate compliance with 10 CFR 430.32(c) is based on Region IV and the sampling plan stated in 10 CFR 429.16(a). HSPF2 is determined in accordance with appendix M1.

Independent coil manufacturer (ICM) means a manufacturer that manufactures indoor units but does not manufacture single-package units or outdoor units.

Indoor unit means a separate assembly of a split system that includes—

(a) An arrangement of refrigerant-to-air heat transfer coil(s) for transfer of heat between the refrigerant and the indoor air,

(b) A condensate drain pan, and may or may not include,

(c) Sheet metal or plastic parts not part of external cabinetry to direct/route airflow over the coil(s),

(d) A cooling mode expansion device,

(e) External cabinetry, and

(f) An integrated indoor blower (*i.e.* a device to move air including its associated motor). A separate designated air mover that may be a furnace or a modular blower (as defined in appendix AA to the subpart) may be considered to be part of the indoor unit. A service coil is not an indoor unit.

Low-static blower coil system means a ducted multi-split or multi-head mini-split system for which all indoor units produce greater than 0.01 in. wc. and a maximum of 0.35 in. wc. external static pressure when operated at the cooling full-load air volume rate not exceeding 400 cfm per rated ton of cooling.

Mid-static blower coil system means a ducted multi-split or multi-head mini-split system for which all indoor units produce greater than 0.20 in. wc. and a maximum of 0.65 in. wc. when operated at the cooling full-load air volume rate not exceeding 400 cfm per rated ton of cooling.

Minimum-speed-limiting variable-speed heat pump means a heat pump for which the compressor speed (represented by revolutions per minute or motor power input frequency) is higher than its value for operation in a 47 °F ambient temperature for any bin temperature T_j for which the calculated heating load is less than the calculated intermediate-speed capacity.

Mobile home blower coil system means a split system that contains an outdoor unit and an indoor unit that meet the following criteria:

(1) Both the indoor and outdoor unit are shipped with manufacturer-supplied installation instructions that specify installation only in a mobile home with the home and equipment complying with HUD Manufactured Home Construction Safety Standard 24 CFR part 3280;

(2) The indoor unit cannot exceed 0.40 in. wc. when operated at the cooling full-load air

volume rate not exceeding 400 cfm per rated ton of cooling; and

(3) The indoor and outdoor unit each must bear a label in at least ¼ inch font that reads ''For installation only in HUD manufactured home per Construction Safety Standard 24 CFR part 3280.''

Mobile home coil-only system means a coil-only split system that includes an outdoor unit and coil-only indoor unit that meet the following criteria:

(1) The outdoor unit is shipped with manufacturer-supplied installation instructions that specify installation only for mobile homes that comply with HUD Manufactured Home Construction Safety Standard 24 CFR part 3280,

(2) The coil-only indoor unit is shipped with manufacturer-supplied installation instructions that specify installation only in or with a mobile home furnace, modular blower, or designated air mover that complies with HUD Manufactured Home Construction Safety Standard 24 CFR part 3280, and has dimensions no greater than 20'' wide, 34'' high and 21'' deep, and

(3) The coil-only indoor unit and outdoor unit each has a label in at least ¼ inch font that reads ''For installation only in HUD manufactured home per Construction Safety Standard 24 CFR part 3280.''

Multi-head mini-split system means a split system that has one outdoor unit and that has two or more indoor units connected with a single refrigeration circuit. The indoor units operate in unison in response to a single indoor thermostat.

Multiple-circuit (or multi-circuit) system means a split system that has one outdoor unit and that has two or more indoor units installed on two or more refrigeration circuits such that each refrigeration circuit serves a compressor and one and only one indoor unit, and refrigerant is not shared from circuit to circuit.

Multiple-split (or multi-split) system means a split system that has one outdoor unit and two or more coil-only indoor units and/or blower coil indoor units connected with a single refrigerant circuit. The indoor units operate independently and can condition multiple zones in response to at least two indoor thermostats or temperature sensors. The outdoor unit operates in response to independent operation of the indoor units based on control input of multiple indoor thermostats or temperature sensors, and/or based on refrigeration circuit sensor input (*e.g.,* suction pressure).

*Nominal capacity means t*he capacity that is claimed by the manufacturer on the product name plate. Nominal cooling capacity is approximate to the air conditioner cooling capacity tested at A or A_2 condition. Nominal heating capacity is approximate to the heat pump heating capacity tested in the $H1_N$ test.

Non-ducted indoor unit means an indoor unit that is designed to be permanently installed, mounted on room walls and/or ceilings, and that directly heats or cools air within the conditioned space.

Normalized Gross Indoor Fin Surface (NGIFS) means the gross fin surface area of the indoor unit coil divided by the cooling capacity measured for the A or A_2 Test, whichever applies.

Off-mode power consumption means the power consumption when the unit is connected to its main power source but is neither providing cooling nor heating to the building it serves.

Off-mode season means, for central air conditioners other than heat pumps, the shoulder season and the entire heating season; and for heat pumps, the shoulder season only.

Outdoor unit means a separate assembly of a split system that transfers heat between the refrigerant and the outdoor air, and consists of an outdoor coil, compressor(s), an air moving device, and in addition for heat pumps, may include a heating mode expansion device, reversing valve, and/or defrost controls.

Outdoor unit manufacturer (OUM) means a manufacturer of single-package units, outdoor units, and/or both indoor units and outdoor units.

Part-load factor (PLF) means the ratio of the cyclic EER (or COP for heating) to the steady-state EER (or COP), where both EERs (or COPs) are determined based on operation at the same ambient conditions.

Seasonal energy efficiency ratio 2 (SEER2) means the total heat removed from the conditioned space during the annual cooling season, expressed in Btu's, divided by the total electrical energy consumed by the central air conditioner or heat pump during the same season, expressed in watt-hours. SEER2 is determined in accordance with appendix M1.

Service coil means an arrangement of refrigerant-to-air heat transfer coil(s), condensate drain pan, sheet metal or plastic parts to direct/route airflow over the coil(s), which may or may not include external cabinetry and/or a cooling mode expansion device, distributed in commerce solely for replacing an uncased coil or cased coil that has already been placed into service, and that has been labeled ''for indoor coil replacement only'' on the nameplate and in manufacturer technical and product literature. The model number for any service coil must include some mechanism (*e.g.,* an additional letter or number) for differentiating a service coil from a coil intended for an indoor unit.

Shoulder season means the months of the year in between those months that require cooling and those months that require heating, *e.g.,* typically, and roughly, April through May, and September through October.

Single-package unit means any central air conditioner or heat pump that has all major assemblies enclosed in one cabinet.

Single-split system means a split system that has one outdoor unit and one indoor unit connected with a single refrigeration circuit.

Small-duct, high-velocity system means a split system for which all indoor units are blower coil indoor units that produce at least 1.2 inches (of water column) of external static pressure when operated at the full-load air volume rate certified by the manufacturer of at least 220 scfm per rated ton of cooling.

Split system means any central air conditioner or heat pump that has at least two separate assemblies that are connected with refrigerant piping when installed. One of these assemblies includes an indoor coil that exchanges heat with the indoor air to provide heating or cooling, while one of the others includes an outdoor coil that exchanges heat with the outdoor air. Split systems may be either blower coil systems or coil-only systems.

Standard Air means dry air having a mass density of 0.075 lb/ft^3.

Steady-state test means a test where the test conditions are regulated to remain as constant as possible while the unit operates continuously in the same mode.

Temperature bin means the 5 °F increments that are used to partition the outdoor dry-bulb temperature ranges of the cooling (≥65 °F) and heating (<65 °F) seasons.

Test condition tolerance means the maximum permissible difference between the average value of the measured test parameter and the specified test condition.

Test operating tolerance means the maximum permissible range that a measurement may vary over the specified test interval. The difference between the maximum and minimum sampled values must be less than or equal to the specified test operating tolerance.

Tested combination means a multi-head mini-split, multi-split, or multi-circuit system having the following features:

(1) The system consists of one outdoor unit with one or more compressors matched with between two and five indoor units;

(2) The indoor units must:

(i) Collectively, have a nominal cooling capacity greater than or equal to 95 percent and less than or equal to 105 percent of the nominal cooling capacity of the outdoor unit;

(ii) Each represent the highest sales volume model family, if this is possible while meeting all the requirements of this section. If this is not possible, one or more of the indoor units may represent another indoor model family in order that all the other requirements of this section are met.

(iii) Individually not have a nominal cooling capacity greater than 50 percent of the nominal cooling capacity of the outdoor unit, unless the nominal cooling capacity of the outdoor unit is 24,000 Btu/h or less;

(iv) Operate at fan speeds consistent with manufacturer's specifications; and

(v) All be subject to the same minimum external static pressure requirement while able to produce the same external static pressure at the exit of each outlet plenum when connected in a manifold configuration as required by the test procedure.

(3) Where referenced, ''nominal cooling capacity'' means, for indoor units, the highest cooling capacity listed in published product literature for 95 °F outdoor dry bulb temperature and 80 °F dry bulb, 67 °F wet bulb indoor conditions, and for outdoor units, the lowest cooling capacity listed in published product literature for these conditions. If incomplete or no operating conditions are published, use the highest (for indoor units) or lowest (for outdoor units) such cooling capacity available for sale.

Time-adaptive defrost control system is a demand-defrost control system that measures the length of the prior defrost period(s) and uses that information to automatically determine when to initiate the next defrost cycle.

Time-temperature defrost control systems initiate or evaluate initiating a defrost cycle only when a predetermined cumulative compressor ON-time is obtained. This predetermined ON-time is generally a fixed value (*e.g.,* 30, 45, 90 minutes) although it may vary based on the measured outdoor dry-bulb temperature. The ON-time counter accumulates if controller measurements (*e.g.,* outdoor temperature, evaporator temperature) indicate that frost formation conditions are present, and it is reset/remains at zero at all other times. In one application of the control scheme, a defrost is initiated whenever the counter time equals the predetermined ON-time. The counter is reset when the defrost cycle is completed.

In a second application of the control scheme, one or more parameters are measured (*e.g.,* air and/or refrigerant temperatures) at the predetermined, cumulative, compressor ON-time. A defrost is initiated only if the measured parameter(s) falls within a predetermined range. The ON-time counter is reset regardless of whether or not a defrost is initiated. If systems of this second type use cumulative ON-time intervals of 10 minutes or less, then the heat pump may qualify as having a demand defrost control system (see definition).

Triple-capacity, northern heat pump means a heat pump that provides two stages of cooling and three stages of heating. The two common stages for both the cooling and heating modes are the low capacity stage and the high capacity stage. The additional heating mode stage is the booster capacity stage, which offers the highest heating capacity output for a given set of ambient operating conditions.

Triple-split system means a split system that is composed of three separate assemblies: An outdoor fan coil section, a blower coil indoor unit, and an indoor compressor section.

Two-capacity (or two-stage) compressor system means a central air conditioner or heat pump that has a compressor or a group of compressors operating with only two stages of capacity. For such systems, low capacity means the compressor(s) operating at low stage, or at low load test conditions. The low compressor stage that operates for heating mode tests may be the same or different from the low compressor stage that operates for cooling mode tests. For such systems, high capacity means the compressor(s) operating at high stage, or at full load test conditions.

Two-capacity, northern heat pump means a heat pump that has a factory or field-selectable lock-out feature to prevent space cooling at high-capacity. Two-capacity heat pumps having this feature will typically have two sets of ratings, one with the feature disabled and one with the feature enabled. The heat pump is a two-capacity northern heat pump only when this feature is enabled at all times. The certified indoor coil model number must reflect whether the ratings pertain to the lockout enabled option via the inclusion of an extra identifier, such as ''+LO''. When testing as a two-capacity, northern heat pump, the lockout feature must remain enabled for all tests.

Uncased coil means a coil-only indoor unit without external cabinetry.

Variable refrigerant flow (VRF) system means a multi-split system with at least three compressor capacity stages, distributing refrigerant through a piping network to multiple indoor blower coil units each capable of individual zone temperature control, through proprietary zone temperature control devices and a common communications network. Note: Single-phase VRF systems less than 65,000 Btu/h are central air conditioners and central air conditioning heat pumps.

Variable-speed compressor system means a central air conditioner or heat pump that has a compressor that uses a variable-speed drive to vary the compressor speed to achieve variable capacities. *Wall-mount blower coil system* means a split system air conditioner or heat pump for which:

(a) The outdoor unit has a certified cooling capacity less than or equal to 36,000 Btu/h;

(b) The indoor unit(s) is/are shipped with manufacturer-supplied installation instructions that specify mounting only by:

(1) Securing the back side of the unit to a wall within the conditioned space, or

(2) Securing the unit to adjacent wall studs or in an enclosure, such as a closet, such that the indoor unit's front face is flush with a wall in the conditioned space;

(c) Has front air return without ductwork and is not capable of horizontal air discharge; and

(d) Has a height no more than 45 inches, a depth (perpendicular to the wall) no more than 22 inches (including tubing connections), and a width no more than 24 inches (parallel to the wall).

Wet-coil test means a test conducted at test conditions that typically cause water vapor to condense on the test unit evaporator coil.

2 Testing Overview and Conditions

(A) Test VRF systems using AHRI 1230–2010 (incorporated by reference, see § 430.3) and appendix M. Where AHRI 1230–2010 refers to the appendix C therein substitute the provisions of this appendix. In cases where there is a conflict, the language of the test procedure in this appendix takes precedence over AHRI 1230–2010.

For definitions use section 1 of appendix M and section 3 of AHRI 1230–2010. For rounding requirements, refer to § 430.23(m). For determination of certified ratings, refer to § 429.16 of this chapter.

For test room requirements, refer to section 2.1 of this appendix. For test unit installation requirements refer to sections 2.2.a, 2.2.b, 2.2.c, 2.2.1, 2.2.2, 2.2.3.a, 2.2.3.c, 2.2.4, 2.2.5, and 2.4 to 2.12 of this appendix, and sections 5.1.3 and 5.1.4 of AHRI 1230–2010. The ''manufacturer's published instructions,'' as stated in section 8.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) and ''manufacturer's installation instructions'' discussed in this appendix mean the manufacturer's installation instructions that come packaged with or appear in the labels applied to the unit. This does not include online manuals. Installation instructions that appear in the labels applied to the unit take precedence over installation instructions that are shipped with the unit.

For general requirements for the test procedure, refer to section 3.1 of this appendix, except for sections 3.1.3 and 3.1.4, which are requirements for indoor air volume and outdoor air volume. For indoor air volume and outdoor air volume requirements, refer instead to section 6.1.5 (except where section 6.1.5 refers to Table 8, refer instead to Table 4 of this appendix) and 6.1.6 of AHRI 1230–2010.

For the test method, refer to sections 3.3 to 3.5 and 3.7 to 3.13 of this appendix. For cooling mode and heating mode test conditions, refer to section 6.2 of AHRI 1230–2010. For calculations of seasonal performance descriptors, refer to section 4 of this appendix.

(B) For systems other than VRF, only a subset of the sections listed in this test procedure apply when testing and determining represented values for a particular unit. Table 1 shows the sections of the test procedure that apply to each system. This table is meant to assist manufacturers in finding the appropriate sections of the test procedure; the appendix sections rather than the table provide the specific requirements for testing, and given the varied nature of available units, manufacturers are responsible for determining which sections apply to each unit tested based on the model characteristics. To use this table, first refer to the sections listed under ''all units''. Then refer to additional requirements based on:

(1) System configuration(s),

(2) The compressor staging or modulation capability, and

(3) Any special features.

Testing requirements for space-constrained products do not differ from similar equipment that is not space-constrained and thus are not listed separately in this table. Air conditioners and heat pumps are not listed separately in this table, but heating procedures and calculations apply only to heat pumps.

Table 1 Informative Guidance for Using Appendix M1

			Testing conditions	Testing procedures			Calculations		
			General	**General**	**Cooling***	**Heating****	**Gen-eral**	**Cool-ing***	**Heat-ing****
Requirements for all units (except VRF)			2.1; 2.2a-c; 2.2.1; 2.2.4; 2.2.4.1; 2.2.4.1 (1); 2.2.4.2; 2.2.5.1-5; 2.2.5.7-8; 2.3; 2.3.1; 2.3.2; 2.4; 2.4.1a,d; 2.5a-c; 2.5.1; 2.5.2 - 2.5.4.2; 2.5.5 – 2.13	3.1; 3.1.1-3; 3.1.5-9; 3.11; 3.12	3.3; 3.4; 3.5a-i	3.1.4.7; 3.1.9; 3.7a,b,d; 3.8a,d; 3.8.1; 3.9; 3.10	4.4; 4.5	4.1	4.2
Additional Requirements	**System Configurations (more than one may apply)**	Single-split system – blower coil	2.2a(1)		3.1.4.1.1; 3.1.4.1.1a,b; 3.1.4.2a-b; 3.1.4.3a-b	3.1.4.4.1; 3.1.4.4.2; 3.1.4.4.3a-b; 3.1.4.5.1; 3.1.4.5.2a-c; 3.1.4.6a-b			
		Single-split system - coil-only	2.2a(1); 2.2d,e; 2.4.2		3.1.4.1.1; 3.1.4.1.1c; 3.1.4.2c; 3.5.1	3.1.4.4.1; 3.1.4.4.2; 3.1.4.4.3c; 3.1.4.5.2d; 3.7c; 3.8b; 3.9f; 3.9.1b			
		Tri-split	2.2a(2)						
		Outdoor unit with no match	2.2e						
		Single-package	2.2.4.1(2); 2.2.5.6b; 2.4.2		3.1.4.1.1; 3.1.4.1.1a,b; 3.1.4.2a-b; 3.1.4.3a-b	3.1.4.4.1; 3.1.4.4.2; 3.1.4.4.3a-b; 3.1.4.5.1; 3.1.4.5.2a-c; 3.1.4.6a-b			
		Heat pump	2.2.5.6.a						
		Heating-only heat pump			3.1.4.1.1 Table 5	3.1.4.4.3			

		Two-capacity northern heat pump		3.1.4.4.2c; 3.1.4.5.2 c- d	3.2.3c	3.6.3			
		Triple-capacity northern heat pump			3.2.5	3.6.6			4.2.6
		SDHV (non-VRF)	2.2b; 2.4.1c; 2.5.4.3						
		Single- zone-multi-coil split and non-VRF multiple-split with duct	2.2a(1),(3); 2.2.3; 2.4.1b		3.1.4.1.1; 3.1.4.1.1a-b; 3.1.4.2a-b; 3.1.4.3a-b	3.1.4.4.1; 3.1.4.4.2; 3.1.4.4.3a-b; 3.1.4.5.1; 3.1.4.5.2a-c; 3.1.4.6a-b			
		Single-zone-multi-coil split and non-VRF multiple-split, ductless	2.2.a(1),(3); 2.2.3		3.1.4.1.2; 3.1.4.2d; 3.1.4.3c; 3.2.4c; 3.5c,g,h; 3.5.2; 3.8c	3.1.4.4.4; 3.1.4.5.2e; 3.1.4.6c; 3.6.4.c; 3.8c			
		VRF multiple-split† and VRF SDHV†	2.1; 2.2.a; 2.2.b; 2.2.c; 2.2.1; 2.2.2; 2.2.3.a; 2.2.3.c; 2.2.4; 2.2.5; 2.4-2.12	3.1 (except 3.1.3, 3.1.4) 3.1.4.1.1c; 3.11-3.13	3.3-3.5	3.7–3.10	4.4; 4.5	4.1	4.2
	Modulation Capability	Single speed compressor, fixed air volume rate			3.2.1	3.6.1		4.1.1	4.2.1
		Single speed compressor, VAV fan			3.2.2	3.6.2		4.1.2	4.2.2
		Two-capacity compressor		3.1.9	3.2.3	3.6.3		4.1.3	4.2.3
		Variable-speed compressor			3.2.4	3.6.4		4.1.4	4.2.4
	Special Features	Heat pump with heat comfort controller				3.6.5			4.2.5
		Units with a multi-speed outdoor fan	2.2.2						
		Single indoor unit having multiple indoor blowers			3.2.6	3.6.2; 3.6.7		4.1.5	4.2.7

*Does not apply to heating-only heat pumps.

**Applies only to heat pumps; not to air conditioners.

†Use AHRI 1230-2010 (incorporated by reference, see §430.3), with the sections referenced in section 2(A) of this appendix, in conjunction with the sections set forth in the table to perform test setup, testing, and calculations for determining represented values for VRF multiple-split and VRF SDHV systems.

NOTE: For all units, use section 3.13 of this appendix for off mode testing procedures and section 4.3 of this appendix for off mode calculations. For all units subject to an EER2 standard, use section 4.6 of this appendix to determine the energy efficiency ratio.

2.1 Test Room Requirements.

a. Test using two side-by-side rooms: An indoor test room and an outdoor test room. For multiple-split, single-zone-multi-coil or multi-circuit air conditioners and heat pumps, however, use as many indoor test rooms as needed to accommodate the total number of indoor units. These rooms must comply with the requirements specified in sections 8.1.2 and 8.1.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3).

b. Inside these test rooms, use artificial loads during cyclic tests and frost accumulation tests, if needed, to produce stabilized room air temperatures. For one room, select an electric resistance heater(s) having a heating capacity that is approximately equal to the heating capacity of the test unit's condenser. For the second room, select a heater(s) having a capacity that is close to the sensible cooling capacity of the test unit's evaporator. Cycle the heater located in the same room as the test unit evaporator coil ON and OFF when the test unit cycles ON and OFF. Cycle the heater located in the same room as the test unit condensing coil ON and OFF when the test unit cycles OFF and ON.

2.2 Test Unit Installation Requirements.

a. Install the unit according to section 8.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3), subject to the following additional requirements:

(1) When testing split systems, follow the requirements given in section 6.1.3.5 of AHRI 210/240–2008 (incorporated by reference, see § 430.3). For the vapor refrigerant line(s), use the insulation included with the unit; if no insulation is provided, use insulation meeting the specifications for the insulation in the installation instructions included with the unit by the manufacturer; if no insulation is included with the unit and the installation instructions do not contain provisions for insulating the line(s), fully insulate the vapor refrigerant line(s) with vapor proof insulation having an inside diameter that matches the refrigerant tubing and a nominal thickness of at least 0.5 inches. For the liquid refrigerant line(s), use the insulation included with the unit; if no insulation is provided, use insulation meeting the specifications for the insulation in the installation instructions included with the unit by the manufacturer; if no insulation is included with the unit and the installation instructions do not contain provisions for insulating the line(s), leave the liquid refrigerant line(s) exposed to the air for air conditioners and heat pumps that heat and cool; or, for heating-only heat pumps, insulate the liquid refrigerant line(s) with insulation having an inside diameter that matches the refrigerant tubing and a nominal thickness of at least 0.5 inches. However, these requirements do not take priority over instructions for application of insulation for the purpose of improving refrigerant temperature measurement accuracy as required by sections 2.10.2 and 2.10.3 of this appendix. Insulation must be the same for the cooling and heating tests.

(2) When testing split systems, if the indoor unit does not ship with a cooling mode expansion device, test the system using the device as specified in the installation instructions provided with the indoor unit. If none is specified, test the system using a fixed orifice or piston type expansion device that is sized appropriately for the system.

(3) When testing triple-split systems (see section 1.2 of this appendix, Definitions), use the tubing length specified in section 6.1.3.5 of AHRI 210/240–2008 (incorporated by reference, see § 430.3) to connect the outdoor coil, indoor compressor section, and indoor coil while still meeting the requirement of exposing 10 feet of the tubing to outside conditions;

(4) When testing split systems having multiple indoor coils, connect each indoor blower coil unit to the outdoor unit using:

(a) 25 feet of tubing, or

(b) Tubing furnished by the manufacturer, whichever is longer.

(5) When testing split systems having multiple indoor coils, expose at least 10 feet of the system interconnection tubing to the outside conditions. If they are needed to make a secondary measurement of capacity or for verification of refrigerant charge, install refrigerant pressure measuring instruments as described in section 8.2.5 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). Section 2.10 of this appendix specifies which secondary methods require refrigerant pressure measurements and section 2.2.5.5 of this appendix discusses use of pressure measurements to verify charge. At a minimum, insulate the low-pressure line(s) of a split system with insulation having an inside diameter that matches the refrigerant tubing and a nominal thickness of 0.5 inch.

b. For units designed for both horizontal and vertical installation or for both up-flow and down-flow vertical installations, use the orientation for testing specified by the manufacturer in the certification report. Conduct testing with the following installed:

(1) The most restrictive filter(s);

(2) Supplementary heating coils; and

(3) Other equipment specified as part of the unit, including all hardware used by a heat comfort controller if so equipped (see section 1 of this appendix, Definitions). For small-duct, high-velocity systems, configure all balance dampers or restrictor devices on or inside the unit to fully open or lowest restriction.

c. Testing a ducted unit without having an indoor air filter installed is permissible as long as the minimum external static pressure requirement is adjusted as stated in Table 4, note 3 (see section 3.1.4 of this appendix). Except as noted in section 3.1.10 of this appendix, prevent the indoor air supplementary heating coils from operating during all tests. For uncased coils, create an enclosure using 1 inch fiberglass foil-faced ductboard having a nominal density of 6 pounds per cubic foot. Or alternatively, construct an enclosure using sheet metal or a similar material and insulating material having a thermal resistance (''R'' value) between 4 and 6 hr · ft^2 · °F/Btu. Size the enclosure and seal between the coil and/or drainage pan and the interior of the enclosure as specified in installation instructions shipped with the unit. Also seal between the plenum and inlet and outlet ducts.

d. When testing a coil-only system, install a toroidal-type transformer to power the system's low-voltage components, complying with any additional requirements for the transformer mentioned in the installation manuals included with the unit by the system manufacturer. If the installation manuals do not provide specifications for the transformer, use a transformer having the following features:

(1) A nominal volt-amp rating such that the transformer is loaded between 25 and 90 percent of this rating for the highest level of power measured during the off mode test (section 3.13 of this appendix);

(2) Designed to operate with a primary input of 230 V, single phase, 60 Hz; and

(3) That provides an output voltage that is within the specified range for each low-voltage component. Include the power consumption of the components connected to the transformer as part of the total system power consumption during the off mode tests; do not include the power consumed by the transformer when no load is connected to it.

e. Test an outdoor unit with no match (*i.e.,* that is not distributed in commerce with any indoor units) using a coil-only indoor unit with a single cooling air volume rate whose coil has:

(1) Round tubes of outer diameter no less than 0.375 inches, and

(2) A normalized gross indoor fin surface (NGIFS) no greater than 1.0 square inch per British thermal unit per hour (sq. in./Btu/hr). NGIFS is calculated as follows:

$$NGIFS = 2 \times L_f \times W_f \times N_f \div \dot{Q}_c (95)$$

where,

L_f = Indoor coil fin length in inches, also height of the coil transverse to the tubes.

W_f = Indoor coil fin width in inches, also depth of the coil.

N_f = Number of fins.

$\dot{Q}_c$ = the measured space cooling capacity of the tested outdoor unit/indoor unit combination as determined from the A_2 or A Test whichever applies, Btu/h.

f. If the outdoor unit or the outdoor portion of a single-package unit has a drain pan heater to prevent freezing of defrost water, energize the heater, subject to control to de-energize it when not needed by the heater's thermostat or the unit's control system, for all tests.

g. If pressure measurement devices are connected to a cooling/heating heat pump refrigerant circuit, the refrigerant charge M_t that could potentially transfer out of the connected pressure measurement systems (transducers, gauges, connections, and lines) between operating modes must be less than 2 percent of the factory refrigerant charge listed on the nameplate of the outdoor unit. If the outdoor unit nameplate has no listed refrigerant charge, or the heat pump is shipped without a refrigerant charge, use a factory refrigerant charge equal to 30 ounces per ton of certified cooling capacity. Use Equation 2.2–1 to calculate M_t for heat pumps that have a single expansion device located in the outdoor unit to serve each indoor unit, and use Equation 2.2–2 to calculate M_t for heat pumps that have two expansion devices per indoor unit.

Equation 2.2-1 $$M_t = \rho * (V_5 * f_5 + V_6 * f_6 + V_3 + V_4 - V_2)$$

Equation 2.2-2 $$M_t = \rho * (V_5 * f_5 + V_6 * f_6)$$

where:

V_i (i=2,3,4 . . .) = the internal volume of the pressure measurement system (pressure lines, fittings, and gauge and/or transducer) at the location i (as indicated in Table 2), (cubic inches)

f_i (i=5,6) = 0 if the pressure measurement system is pitched upwards from the pressure tap location to the gauge or transducer, 1 if it is not.

ρ = the density associated with liquid refrigerant at 100 °F bubble point conditions (ounces per cubic inch)

TABLE 2—PRESSURE MEASUREMENT LOCATIONS

Location	
Compressor Discharge	1
Between Outdoor Coil and Outdoor Expansion Valve(s)	2
Liquid Service Valve	3
Indoor Coil Inlet	4
Indoor Coil Outlet	5
Common Suction Port (*i.e.*, vapor service valve)	6
Compressor Suction	7

Calculate the internal volume of each pressure measurement system using internal volume reported for pressure transducers and gauges in product literature, if available. If such information is not available, use the value of 0.1 cubic inch internal volume for each pressure transducer, and 0.2 cubic inches for each pressure gauge.

In addition, for heat pumps that have a single expansion device located in the outdoor unit to serve each indoor unit, the internal volume of the pressure system at location 2 (as indicated in Table 2) must be no more than 1 cubic inches. Once the pressure measurement lines are set up, no change should be made until all tests are finished.

2.2.1 Defrost Control Settings

Set heat pump defrost controls at the normal settings which most typify those encountered in generalized climatic region IV. (Refer to Figure 1 and Table 20 of section 4.2 of this appendix for information on region IV.) For heat pumps that use a time-adaptive defrost control system (see section 1.2 of this appendix, Definitions), the manufacturer must specify in the certification report the frosting interval to be used during frost accumulation tests and provide the procedure for manually initiating the defrost at the specified time.

2.2.2 Special Requirements for Units Having a Multiple-Speed Outdoor Fan

Configure the multiple-speed outdoor fan according to the installation manual included with the unit by the manufacturer, and thereafter, leave it unchanged for all tests. The controls of the unit must regulate the operation of the outdoor fan during all lab tests except dry coil cooling mode tests. For dry coil cooling mode tests, the outdoor fan must operate at the same speed used during the required wet coil test conducted at the same outdoor test conditions.

2.2.3 Special Requirements for Multi-Split Air Conditioners and Heat Pumps and Ducted Systems Using a Single Indoor Section Containing Multiple Indoor Blowers That Would Normally Operate Using Two or More Indoor Thermostats

Because these systems will have more than one indoor blower and possibly multiple outdoor fans and compressor systems, references in this test procedure to a singular indoor blower, outdoor fan, and/or compressor means all indoor blowers, all outdoor fans, and all compressor systems that are energized during the test.

a. Additional requirements for multi-split air conditioners and heat pumps. For any test where the system is operated at part load (*i.e.,* one or more compressors ''off'', operating at the intermediate or minimum compressor speed, or at low compressor capacity), the manufacturer must designate in the certification report the indoor coil(s) that are not providing heating or cooling during the test. For variable-speed systems, the manufacturer must designate in the certification report at least one indoor unit that is not providing heating or cooling for all tests conducted at minimum compressor speed. For all other part-load tests, the manufacturer must choose to turn off zero, one, two, or more indoor units. The chosen configuration must remain unchanged for all tests conducted at the same compressor speed/capacity. For any indoor coil that is not providing heating or cooling during a test, cease forced airflow through this indoor coil and block its outlet duct.

b. Additional requirements for ducted split systems with a single indoor unit containing multiple indoor blowers (or for single-package units with an indoor section containing multiple indoor blowers) where the indoor blowers are designed to cycle on and off independently of one another and are not controlled such that all indoor blowers are modulated to always operate at the same air volume rate or speed. For any test where the system is operated at its lowest capacity—*i.e.,* the lowest total air volume rate allowed when operating the single-speed compressor or when operating at low compressor capacity—turn off indoor blowers accounting for at least one-third of the full-load air volume rate unless prevented by the controls of the unit. In such cases, turn off as many indoor blowers as permitted by the unit's controls. Where more than one option exists for meeting this ''off'' requirement, the manufacturer must indicate in its certification report which indoor blower(s) are turned off. The chosen configuration shall remain unchanged for all tests conducted at the same lowest capacity configuration. For any indoor coil turned off during a test, cease forced airflow through any outlet duct connected to a switched-off indoor blower.

c. For test setups where the laboratory's physical limitations require use of more than the required line length of 25 feet as listed in section 2.2.a.(4) of this appendix, then the actual refrigerant line length used by the laboratory may exceed the required length and the refrigerant line length correction factors in Table 4 of AHRI 1230–2010 are applied to the cooling capacity measured for each cooling mode test.

2.2.4 Wet-Bulb Temperature Requirements for the Air Entering the Indoor and Outdoor Coils

2.2.4.1 Cooling Mode Tests

For wet-coil cooling mode tests, regulate the water vapor content of the air entering the indoor unit so that the wet-bulb temperature is as listed in Tables 5 to 8. As noted in these same tables, achieve a wet-bulb temperature during dry-coil cooling mode tests that results in no condensate forming on the indoor coil. Controlling the water vapor content of the air entering the outdoor side of the unit is not required for cooling mode tests except when testing:

(1) Units that reject condensate to the outdoor coil during wet coil tests. Tables 5–8 list the applicable wet-bulb temperatures.

(2) Single-package units where all or part of the indoor section is located in the outdoor test room. The average dew point temperature of the air entering the outdoor coil during wet coil tests must be within ±3.0 °F of the average dew point temperature of the air entering the indoor coil over the 30-minute data collection interval described in section 3.3 of this appendix. For dry coil tests on such units, it may be necessary to limit the moisture content of the air entering the outdoor coil of the unit to meet the requirements of section 3.4 of this appendix.

2.2.4.2 Heating Mode Tests

For heating mode tests, regulate the water vapor content of the air entering the outdoor unit to the applicable wet-bulb temperature listed in Tables 12 to 15. The wet-bulb temperature entering the indoor side of the heat pump must not exceed 60 °F. Additionally, if the Outdoor Air Enthalpy test method (section 2.10.1 of this appendix) is used while testing a single-package heat pump where all or part of the outdoor section is located in the indoor test room, adjust the wet-bulb temperature for the air entering the indoor side to yield an indoor-side dew point temperature that is as close as reasonably possible to the dew point temperature of the outdoor-side entering air.

2.2.5 Additional Refrigerant Charging Requirements

2.2.5.1 Instructions to Use for Charging

a. Where the manufacturer's installation instructions contain two sets of refrigerant charging criteria, one for field installations and one for lab testing, use the field installation criteria.

b. For systems consisting of an outdoor unit manufacturer's outdoor section and indoor section with differing charging procedures, adjust the refrigerant charge per the outdoor installation instructions.

c. For systems consisting of an outdoor unit manufacturer's outdoor unit and an independent coil manufacturer's indoor unit with differing charging procedures, adjust the refrigerant charge per the indoor unit's installation instructions. If instructions are provided only with the outdoor unit or are provided only with an independent coil manufacturer's indoor unit, then use the provided instructions.

2.2.5.2 Test(s) to Use for Charging

a. Use the tests or operating conditions specified in the manufacturer's installation instructions for charging. The manufacturer's installation instructions may specify use of tests other than the A or A_2 test for charging, but, unless the unit is a heating-only heat pump, determine the air volume rate by the A or A_2 test as specified in section 3.1 of this appendix.

b. If the manufacturer's installation instructions do not specify a test or operating conditions for charging or there are no manufacturer's instructions, use the following test(s):

(1) For air conditioners or cooling and heating heat pumps, use the A or A_2 test.

(2) For cooling and heating heat pumps that do not operate in the H1 or $H1_2$ test (*e.g.* due to shut down by the unit limiting devices) when tested using the charge determined at the A or A_2 test, and for heating-only heat pumps, use the H1 or $H1_2$ test.

2.2.5.3 Parameters to Set and Their Target Values

a. Consult the manufacturer's installation instructions regarding which parameters (*e.g.,* superheat) to set and their target values. If the instructions provide ranges of values, select target values equal to the midpoints of the provided ranges.

b. In the event of conflicting information between charging instructions (*i.e.,* multiple conditions given for charge adjustment where all conditions specified cannot be met), follow the following hierarchy.

(1) For fixed orifice systems:

(i) Superheat

(ii) High side pressure or corresponding saturation or dew-point temperature

(iii) Low side pressure or corresponding saturation or dew-point temperature

(iv) Low side temperature

(v) High side temperature

(vi) Charge weight

(2) For expansion valve systems:

(i) Subcooling

(ii) High side pressure or corresponding saturation or dew-point temperature

(iii) Low side pressure or corresponding saturation or dew-point temperature

(iv) Approach temperature (difference between temperature of liquid leaving condenser and condenser average inlet air temperature)

(v) Charge weight

c. If there are no installation instructions and/or they do not provide parameters and target values, set superheat to a target value of 12 °F for fixed orifice systems or set subcooling to a target value of 10 °F for expansion valve systems.

2.2.5.4 Charging Tolerances

a. If the manufacturer's installation instructions specify tolerances on target values for the charging parameters, set the values within these tolerances.

b. Otherwise, set parameter values within the following test condition tolerances for the different charging parameters:

11. Superheat: +/− 2.0 °F
12. Subcooling: +/− 2.0 °F
13. High side pressure or corresponding saturation or dew point temperature: +/− 4.0 psi or +/− 1.0 °F
14. Low side pressure or corresponding saturation or dew point temperature: +/− 2.0 psi or +/− 0.8 °F
15. High side temperature: +/− 2.0 °F
16. Low side temperature: +/− 2.0 °F
17. Approach temperature: +/− 1.0 °F
18. Charge weight: +/− 2.0 ounce

2.2.5.5 Special Charging Instructions

a. Cooling and Heating Heat Pumps

If, using the initial charge set in the A or A_2 test, the conditions are not within the range specified in manufacturer's installation instructions for the H1 or $H1_2$ test, make as small as possible an adjustment to obtain conditions for this test in the specified range. After this adjustment, recheck conditions in the A or A_2 test to confirm that they are still within the specified range for the A or A_2 test.

b. Single-Package Systems

i. Unless otherwise directed by the manufacturer's installation instructions, install one or more refrigerant line pressure gauges during the setup of the unit, located depending on the parameters used to verify or set charge, as described:

(1) Install a pressure gauge at the location of the service valve on the liquid line if charging is on the basis of subcooling, or high side pressure or corresponding saturation or dew point temperature;

(2) Install a pressure gauge at the location of the service valve on the suction line if charging is on the basis of superheat, or low side pressure or corresponding saturation or dew point temperature.

ii. Use methods for installing pressure gauge(s) at the required location(s) as indicated in manufacturer's instructions if specified.

2.2.5.6 Near-Azeotropic and Zeotropic Refrigerants

Perform charging of near-azeotropic and zeotropic refrigerants only with refrigerant in the liquid state.

2.2.5.7 Adjustment of Charge Between Tests

After charging the system as described in this test procedure, use the set refrigerant charge for all tests used to determine performance. Do not adjust the refrigerant charge at any point during testing. If measurements indicate that refrigerant charge has leaked during the test, repair the refrigerant leak, repeat any necessary set-up steps, and repeat all tests.

2.3 Indoor Air Volume Rates

If a unit's controls allow for overspeeding the indoor blower (usually on a temporary basis), take the necessary steps to prevent overspeeding during all tests.

2.3.1 Cooling Tests

a. Set indoor blower airflow-control settings (*e.g.,* fan motor pin settings, fan motor speed) according to the requirements that are specified in section 3.1.4 of this appendix.

b. Express the Cooling full-load air volume rate, the Cooling Minimum Air Volume Rate, and the Cooling Intermediate Air Volume Rate in terms of standard air.

2.3.2 Heating Tests

a. Set indoor blower airflow-control settings (*e.g.,* fan motor pin settings, fan motor speed) according to the requirements that are specified in section 3.1.4 of this appendix.

b. Express the heating full-load air volume rate, the heating minimum air volume rate, the heating intermediate air volume rate, and the heating nominal air volume rate in terms of standard air.

2.4 Indoor Coil Inlet and Outlet Duct Connections

Insulate and/or construct the outlet plenum as described in section 2.4.1 of this appendix and, if installed, the inlet plenum described in section 2.4.2 of this appendix with thermal insulation having a nominal overall resistance (R-value) of at least 19 hr·ft² °F/Btu.

2.4.1 Outlet Plenum for the Indoor Unit

a. Attach a plenum to the outlet of the indoor coil. (**Note:** For some packaged systems, the indoor coil may be located in the outdoor test room.)

b. For systems having multiple indoor coils, or multiple indoor blowers within a single indoor section, attach a plenum to each indoor coil or indoor blower outlet. In order to reduce the number of required airflow measurement apparatuses (section 2.6 of this appendix), each such apparatus may serve multiple outlet plenums connected to a single common duct leading to the apparatus. More than one indoor test room may be used, which may use one or more common ducts leading to one or more airflow measurement apparatuses within each test room that contains multiple indoor coils. At the plane where each plenum enters a common duct, install an adjustable airflow damper and use it to equalize the static pressure in each plenum. The outlet air temperature grid(s) (section 2.5.4 of this appendix) and airflow measuring apparatus shall be located downstream of the inlet(s) to the common duct(s). For multiple-circuit (or multi-circuit) systems for which each indoor coil outlet is measured separately and its outlet plenum is not connected to a common duct connecting multiple outlet plenums,

install the outlet air temperature grid and airflow measuring apparatus at each outlet plenum.

c. For small-duct, high-velocity systems, install an outlet plenum that has a diameter that is equal to or less than the value listed in Table 3. The limit depends only on the Cooling full-load air volume rate (see section 3.1.4.1.1 of this appendix) and is effective regardless of the flange dimensions on the outlet of the unit (or an air supply plenum adapter accessory, if installed in accordance with the manufacturer's installation instructions).

d. Add a static pressure tap to each face of the (each) outlet plenum, if rectangular, or at four evenly distributed locations along the circumference of an oval or round plenum. Create a manifold that connects the four static pressure taps. Figure 9 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) shows allowed options for the manifold configuration. The cross-sectional dimensions of plenum must be equal to the dimensions of the indoor unit outlet. See Figures 7a, 7b, and 7c of ANSI/ASHRAE 37–2009 for the minimum length of the (each) outlet plenum and the locations for adding the static pressure taps for ducted blower coil indoor units and single-package systems. See Figure 8 of ANSI/ASHRAE 37–2009 for coil-only indoor units.

TABLE 3—SIZE OF OUTLET PLENUM FOR SMALL-DUCT HIGH-VELOCITY INDOOR UNITS

Cooling full-load air volume rate (scfm)	Maximum diameter* of outlet plenum (inches)
≤500	6
501 to 700	7
701 to 900	8
901 to 1100	9
1101 to 1400	10
1401 to 1750	11

*If the outlet plenum is rectangular, calculate its equivalent diameter using ($4A/P$,) where A is the cross-sectional area and P is the perimeter of the rectangular plenum, and compare it to the listed maximum diameter.

2.4.2 Inlet Plenum for the Indoor Unit

Install an inlet plenum when testing a coil-only indoor unit, a ducted blower coil indoor unit, or a single-package system. See Figures 7b and 7c of ANSI/ASHRAE 37–2009 for cross-sectional dimensions, the minimum length of the inlet plenum, and the locations of the static-pressure taps for ducted blower coil indoor units and single-package systems. See Figure 8 of ANSI/ASHRAE 37–2009 for coil-only indoor units. The inlet plenum duct size shall equal the size of the inlet opening of the air-handling (blower coil) unit or furnace. For a ducted blower coil indoor unit the set up may omit the inlet plenum if an inlet airflow prevention device is installed with a straight internally unobstructed duct on its outlet end with a minimum length equal to 1.5 times the square root of the cross-sectional area of the indoor unit inlet. See section 2.1.5.2 of this appendix for requirements for the locations of static pressure taps built into the inlet airflow prevention device. For all of these arrangements, make a manifold that connects the four static-pressure taps using one of the three configurations specified in section 2.4.1.d. of this appendix. Never use an inlet plenum when testing a non-ducted system.

2.5 Indoor Coil Air Property Measurements and Airflow Prevention Devices.

Follow instructions for indoor coil air property measurements as described in section 2.14 of this appendix, unless otherwise instructed in this section.

a. Measure the dry-bulb temperature and water vapor content of the air entering and leaving the indoor coil. If needed, use an air sampling device to divert air to a sensor(s) that measures the water vapor content of the air. See section 5.3 of ANSI/ASHRAE 41.1–2013 (incorporated by reference, see § 430.3) for guidance on constructing an air sampling device. No part of the air sampling device or the tubing transferring the sampled air to the sensor must be within two inches of the test chamber floor, and the transfer tubing must be insulated. The sampling device may also be used for measurement of dry bulb temperature by transferring the sampled air to a remotely located sensor(s). The air sampling device and the remotely located temperature sensor(s) may be used to determine the entering air dry bulb temperature during any test. The air sampling device and the remotely located sensor(s) may be used to determine the leaving air dry bulb temperature for all tests except:

(1) Cyclic tests; and

(2) Frost accumulation tests.

b. Install grids of temperature sensors to measure dry bulb temperatures of both the entering and leaving airstreams of the indoor unit. These grids of dry bulb temperature sensors may be used to measure average dry bulb temperature entering and leaving the indoor unit in all cases (as an alternative to the dry bulb sensor measuring the sampled air). The leaving airstream grid is required for measurement of average dry bulb temperature leaving the indoor unit for cyclic tests and frost accumulation tests. The grids are also required to measure the air temperature distribution of the entering and leaving airstreams as described in sections 3.1.8 of this appendix. Two such grids may be applied as a thermopile, to directly obtain the average temperature difference rather than directly measuring both entering and leaving average temperatures.

c. Use of airflow prevention devices. Use an inlet and outlet air damper box, or use an inlet upturned duct and an outlet air damper box when conducting one or both of the cyclic tests listed in sections 3.2 and 3.6 of this appendix on ducted systems. If not conducting any cyclic tests, an outlet air damper box is required when testing ducted and non-ducted heat pumps that cycle off the indoor blower during defrost cycles and there is no other means for preventing natural or forced convection through the indoor unit when the indoor blower is off. Never use an inlet damper box or an inlet upturned duct when testing non-ducted indoor units. An inlet upturned duct is a length of ductwork installed upstream from the inlet such that the indoor duct inlet opening, facing upwards, is sufficiently high to prevent natural convection transfer out of the duct. If an inlet upturned duct is used, install a dry bulb temperature sensor near the inlet opening of the indoor duct at a centerline location not higher than the lowest elevation of the duct edges at the inlet, and ensure that any pair of 5-minute averages of the dry bulb temperature at this location, measured at least every minute during the compressor OFF period of the cyclic test, do not differ by more than 1.0 °F.

2.5.1 Test Set-Up on the Inlet Side of the Indoor Coil: for Cases Where the Inlet Airflow Prevention Device is Installed

a. Install an airflow prevention device as specified in section 2.5.1.1 or 2.5.1.2 of this appendix, whichever applies.

b. For an inlet damper box, locate the grid of entering air dry-bulb temperature sensors, if used, and the air sampling device, or the sensor used to measure the water vapor content of the inlet air, at a location immediately upstream of the damper box inlet. For an inlet upturned duct, locate the grid of entering air dry-bulb temperature sensors, if used, and the air sampling device, or the sensor used to measure the water vapor content of the inlet air, at a location at least one foot downstream from the beginning of the insulated portion of the duct but before the static pressure measurement.

2.5.1.1 If the section 2.4.2 inlet plenum is installed, construct the airflow prevention device having a cross-sectional flow area equal to or greater than the flow area of the inlet plenum. Install the airflow prevention device upstream of the inlet plenum and construct ductwork connecting it to the inlet plenum. If needed, use an adaptor plate or a transition duct section to connect the airflow prevention device with the inlet plenum. Insulate the ductwork and inlet plenum with thermal insulation that has a nominal overall resistance (R-value) of at least 19 hr · ft^2 · °F/Btu.

2.5.1.2 If the section 2.4.2 inlet plenum is not installed, construct the airflow prevention device having a cross-sectional flow area equal to or greater than the flow area of the air inlet of the indoor unit. Install the airflow prevention device immediately upstream of the inlet of the indoor unit. If needed, use an adaptor plate or a short transition duct section to connect the airflow prevention device with the unit's air inlet. Add static pressure taps at the center of each face of a rectangular airflow prevention device, or at four evenly distributed locations along the circumference of an oval or round airflow prevention device. Locate the pressure taps at a distance from the indoor unit inlet equal to 0.5 times the square root of the cross sectional area of the indoor unit inlet. This location must be between the damper and the inlet of the indoor unit, if a damper is used. Make a manifold that connects the four static pressure taps using one of the configurations shown in Figure 9 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). Insulate the ductwork with thermal insulation that has a nominal overall resistance (R-value) of at least 19 hr·ft^2·°F/Btu.

2.5.2 Test Set-Up on the Inlet Side of the Indoor Unit: for Cases Where No Airflow Prevention Device is Installed

If using the section 2.4.2 inlet plenum and a grid of dry bulb temperature sensors, mount the grid at a location upstream of the static pressure taps described in section 2.4.2 of this appendix, preferably at the entrance plane of the inlet plenum. If the section 2.4.2 inlet plenum is not used (*i.e.* for non-ducted units) locate a grid approximately 6 inches upstream of the indoor unit inlet. In the case of a system having multiple non-ducted indoor units, do this for each indoor unit. Position an air sampling device, or the sensor used to measure the water vapor content of the inlet air, immediately upstream of the (each) entering air dry-bulb temperature sensor grid. If a grid of sensors is not used, position the entering air sampling device (or the sensor used to measure the water vapor content of the inlet air) as if the grid were present.

2.5.3 Indoor Coil Static Pressure Difference Measurement

Fabricate pressure taps meeting all requirements described in section 6.5.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) and illustrated in Figure 2A of AMCA 210–2007 (incorporated by reference, see § 430.3), however, if adhering strictly to the description in section 6.5.2 of ANSI/ASHRAE 37–2009, the minimum pressure tap length of 2.5 times the inner diameter of Figure 2A of AMCA 210–2007 is waived. Use a differential pressure measuring instrument that is accurate to within ±0.01 inches of water and has a resolution of at least 0.01 inches of water to measure the static pressure difference between the indoor coil air inlet and outlet. Connect one side of the differential pressure instrument to the manifolded pressure taps installed in the outlet plenum. Connect the other side of the instrument to the manifolded pressure taps located in either the inlet plenum or incorporated within the airflow prevention device. For non-ducted systems that are tested with multiple outlet plenums, measure the static pressure within each outlet plenum relative to the surrounding atmosphere.

2.5.4 Test Set-Up on the Outlet Side of the Indoor Coil

a. Install an interconnecting duct between the outlet plenum described in section 2.4.1 of this appendix and the airflow measuring apparatus described below in section 2.6 of this appendix. The cross-sectional flow area of the interconnecting duct must be equal to or greater than the flow area of the outlet plenum or the common duct used when testing non-ducted units having multiple indoor coils. If needed, use adaptor plates or transition duct sections to allow the connections. To minimize leakage, tape joints within the interconnecting duct (and the outlet plenum). Construct or insulate the entire flow section with thermal insulation having a nominal overall resistance (R-value) of at least 19 hr·ft^2· °F/Btu.

b. Install a grid(s) of dry-bulb temperature sensors inside the interconnecting duct. Also, install an air sampling device, or the sensor(s) used to measure the water vapor content of the outlet air, inside the interconnecting duct. Locate the dry-bulb temperature grid(s) upstream of the air sampling device (or the in-duct sensor(s) used to measure the water vapor content of the outlet air). Turn off the sampler fan motor during the cyclic tests. Air leaving an indoor unit that is sampled by an air sampling device for remote water-vapor-content measurement must be returned to the interconnecting duct at a location:

(1) Downstream of the air sampling device;

(2) On the same side of the outlet air damper as the air sampling device; and

(3) Upstream of the section 2.6 airflow measuring apparatus.

2.5.4.1 Outlet Air Damper Box Placement and Requirements

If using an outlet air damper box (see section 2.5 of this appendix), the leakage rate from the combination of the outlet plenum, the closed damper, and the duct section that connects these two components must not exceed 20 cubic feet per minute when a negative pressure of 1 inch of water column is maintained at the plenum's inlet.

2.5.4.2 Procedures to Minimize Temperature Maldistribution

Use these procedures if necessary to correct temperature maldistributions. Install a mixing device(s) upstream of the outlet air, dry-bulb temperature grid (but downstream of the outlet plenum static pressure taps). Use a perforated screen located between the mixing device and the dry-bulb temperature grid, with a maximum open area of 40 percent. One or both items should help to meet the maximum outlet air temperature distribution specified in section 3.1.8 of this appendix. Mixing devices are described in sections 5.3.2 and 5.3.3 of ANSI/ASHRAE 41.1–2013 and section 5.2.2 of ASHRAE 41.2–1987 (RA 1992) (incorporated by reference, see § 430.3).

2.5.4.3 Minimizing Air Leakage

For small-duct, high-velocity systems, install an air damper near the end of the interconnecting duct, just prior to the transition to the airflow measuring apparatus of section 2.6 of this appendix. To minimize air leakage, adjust this damper such that the pressure in the receiving chamber of the airflow measuring apparatus is no more than 0.5 inch of water higher than the surrounding test room ambient. If applicable, in lieu of installing a separate damper, use the outlet air damper box of sections 2.5 and 2.5.4.1 of this appendix if it allows variable positioning. Also apply these steps to any conventional indoor blower unit that creates a static pressure within the receiving chamber of the airflow measuring apparatus that exceeds the test room ambient pressure by more than 0.5 inches of water column.

2.5.5 Dry Bulb Temperature Measurement

a. Measure dry bulb temperatures as specified in sections 4, 5.3, 6, and 7 of ANSI/ASHRAE 41.1–2013 (incorporated by reference, see § 430.3).

b. Distribute the sensors of a dry-bulb temperature grid over the entire flow area. The required minimum is 9 sensors per grid.

2.5.6 Water Vapor Content Measurement

Determine water vapor content by measuring dry-bulb temperature combined with the air wet-bulb temperature, dew point temperature, or relative humidity. If used, construct and apply wet-bulb temperature sensors as specified in sections 4, 5, 6, 7.2, 7.3, and 7.4 of ASHRAE 41.6–2014 (incorporated by reference, see § 430.3). The temperature sensor (wick removed) must be accurate to within ±0.2 °F. If used, apply dew point hygrometers as specified in sections 4, 5, 6, 7.1, and 7.4 of ASHRAE 41.6–2014. The dew point hygrometers must be accurate to within ±0.4 °F when operated at conditions that result in the evaluation of dew points above 35 °F. If used, a relative humidity (RH) meter must be accurate to within ±0.7% RH. Other means to determine the psychrometric state of air may be used as long as the measurement accuracy is equivalent to or better than the accuracy achieved from using a wet-bulb temperature sensor that meets the above specifications.

2.5.7 Air Damper Box Performance Requirements

If used (see section 2.5 of this appendix), the air damper box(es) must be capable of being completely opened or completely closed within 10 seconds for each action.

2.6 Airflow Measuring Apparatus

a. Fabricate and operate an airflow measuring apparatus as specified in section 6.2 and 6.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). Place the static pressure taps and position the diffusion baffle (settling means) relative to the chamber inlet as indicated in Figure 12 of AMCA 210–07 and/or Figure 14 of ASHRAE 41.2–1987 (RA 1992) (incorporated by reference, see § 430.3). When measuring the static pressure difference across nozzles and/or velocity pressure at nozzle throats using electronic pressure transducers and a data acquisition system, if high frequency fluctuations cause measurement variations to exceed the test tolerance limits specified in section 9.2 and Table 2 of ANSI/ASHRAE 37–2009, dampen the measurement system such that the time constant associated with response to a step change in measurement (time for the response to change 63% of the way from the initial output to the final output) is no longer than five seconds.

b. Connect the airflow measuring apparatus to the interconnecting duct section described in section 2.5.4 of this appendix. See sections 6.1.1, 6.1.2, and 6.1.4, and Figures 1, 2, and 4 of ANSI/ASHRAE 37–2009; and Figures D1, D2, and D4 of AHRI 210/240–2008 (incorporated by reference, see § 430.3) with Addendum 1 and 2 for illustrative examples of how the test apparatus may be applied within a complete laboratory set-up. Instead of following one of these examples, an alternative set-up may be used to handle the air leaving the airflow measuring apparatus and to supply properly conditioned air to the test unit's inlet. The alternative set-up, however, must not interfere with the prescribed means for measuring airflow rate, inlet and outlet air temperatures, inlet and outlet water vapor contents, and external static pressures, nor create abnormal

conditions surrounding the test unit. (**Note:** Do not use an enclosure as described in section 6.1.3 of ANSI/ASHRAE 37–2009 when testing triple-split units.)

2.7 Electrical Voltage Supply

Perform all tests at the voltage specified in section 6.1.3.2 of AHRI 210/240–2008 (incorporated by reference, see § 430.3) for ''Standard Rating Tests.'' If either the indoor or the outdoor unit has a 208V or 200V nameplate voltage and the other unit has a 230V nameplate rating, select the voltage supply on the outdoor unit for testing. Otherwise, supply each unit with its own nameplate voltage. Measure the supply voltage at the terminals on the test unit using a volt meter that provides a reading that is accurate to within ±1.0 percent of the measured quantity.

2.8 Electrical Power and Energy Measurements

a. Use an integrating power (watt-hour) measuring system to determine the electrical energy or average electrical power supplied to all components of the air conditioner or heat pump (including auxiliary components such as controls, transformers, crankcase heater, integral condensate pump on non-ducted indoor units, etc.). The watt-hour measuring system must give readings that are accurate to within ±0.5 percent. For cyclic tests, this accuracy is required during both the ON and OFF cycles. Use either two different scales on the same watt-hour meter or two separate watt-hour meters. Activate the scale or meter having the lower power rating within 15 seconds after beginning an OFF cycle. Activate the scale or meter having the higher power rating within 15 seconds prior to beginning an ON cycle. For ducted blower coil systems, the ON cycle lasts from compressor ON to indoor blower OFF. For ducted coil-only systems, the ON cycle lasts from compressor ON to compressor OFF. For non-ducted units, the ON cycle lasts from indoor blower ON to indoor blower OFF. When testing air conditioners and heat pumps having a variable-speed compressor, avoid using an induction watt/watt-hour meter.

b. When performing section 3.5 and/or 3.8 cyclic tests on non-ducted units, provide instrumentation to determine the average electrical power consumption of the indoor blower motor to within ±1.0 percent. If required according to sections 3.3, 3.4, 3.7, 3.9.1 of this appendix, and/or 3.10 of this appendix, this same instrumentation requirement (to determine the average electrical power consumption of the indoor blower motor to within ±1.0 percent) applies when testing air conditioners and heat pumps having a variable-speed constant-air-volume-rate indoor blower or a variable-speed, variable-air-volume-rate indoor blower.

2.9 Time Measurements

Make elapsed time measurements using an instrument that yields readings accurate to within ±0.2 percent.

2.10 Test Apparatus for the Secondary Space Conditioning Capacity Measurement

For all tests, use the indoor air enthalpy method to measure the unit's capacity. This method uses the test set-up specified in sections 2.4 to 2.6 of this appendix. In addition, for all steady-state tests, conduct a second, independent measurement of capacity as described in section 3.1.1 of this appendix. For split systems, use one of the following secondary measurement methods: outdoor air enthalpy method, compressor calibration method, or refrigerant enthalpy method. For single-package units, use either the outdoor air enthalpy method or the compressor calibration method as the secondary measurement.

2.10.1 Outdoor Air Enthalpy Method

a. To make a secondary measurement of indoor space conditioning capacity using the outdoor air enthalpy method, do the following:

(1) Measure the electrical power consumption of the test unit;

(2) Measure the air-side capacity at the outdoor coil; and

(3) Apply a heat balance on the refrigerant cycle.

b. The test apparatus required for the outdoor air enthalpy method is a subset of the apparatus used for the indoor air enthalpy method. Required apparatus includes the following:

(1) On the outlet side, an outlet plenum containing static pressure taps (sections 2.4, 2.4.1, and 2.5.3 of this appendix),

(2) An airflow measuring apparatus (section 2.6 of this appendix),

(3) A duct section that connects these two components and itself contains the instrumentation for measuring the dry-bulb temperature and water vapor content of the air leaving the outdoor coil (sections 2.5.4, 2.5.5, and 2.5.6 of this appendix), and

(4) On the inlet side, a sampling device and temperature grid (section 2.11.b of this appendix).

c. During the free outdoor air tests described in sections 3.11.1 and 3.11.1.1 of this appendix, measure the evaporator and condenser temperatures or pressures. On both the outdoor coil and the indoor coil, solder a thermocouple onto a return bend located at or near the midpoint of each coil or at points not affected by vapor superheat or liquid subcooling. Alternatively, if the test unit is not sensitive to the refrigerant charge, install pressure gages to the access valves or to ports created from tapping into the suction and discharge lines according to sections 7.4.2 and 8.2.5 of ANSI/ASHRAE 37–2009. Use this alternative approach when testing a unit charged with a zeotropic refrigerant having a temperature glide in excess of 1 °F at the specified test conditions.

2.10.2 Compressor Calibration Method

Measure refrigerant pressures and temperatures to determine the evaporator superheat and the enthalpy of the refrigerant that enters and exits the indoor coil. Determine refrigerant flow rate or, when the superheat of the refrigerant leaving the evaporator is less than 5 °F, total capacity from separate calibration tests conducted under identical operating conditions. When using this method, install instrumentation and measure refrigerant properties according to section 7.4.2 and 8.2.5 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). If removing the refrigerant before applying refrigerant lines and subsequently recharging, use the steps in 7.4.2 of ANSI/ASHRAE 37–2009 in addition to the methods of section 2.2.5 of this appendix to confirm the refrigerant charge. Use refrigerant temperature and pressure measuring instruments that meet the specifications given in sections 5.1.1 and 5.2 of ANSI/ASHRAE 37–2009.

2.10.3 Refrigerant Enthalpy Method

For this method, calculate space conditioning capacity by determining the refrigerant enthalpy change for the indoor coil and directly measuring the refrigerant flow rate. Use section 7.5.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) for the requirements for this method, including the additional instrumentation requirements, and information on placing the flow meter and a sight glass. Use refrigerant temperature, pressure, and flow measuring instruments that meet the specifications given in sections 5.1.1, 5.2, and 5.5.1 of ANSI/ASHRAE 37–2009. Refrigerant flow measurement device(s), if used, must be either elevated at least two feet from the test chamber floor or placed upon insulating material having a total thermal resistance of at least R–12 and extending at least one foot laterally beyond each side of the device(s)' exposed surfaces.

2.11 Measurement of Test Room Ambient Conditions

Follow instructions for setting up air sampling device and aspirating psychrometer as described in section 2.14 of this appendix, unless otherwise instructed in this section.

a. If using a test set-up where air is ducted directly from the conditioning apparatus to the indoor coil inlet (see Figure 2, Loop Air-Enthalpy Test Method Arrangement, of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3)), add instrumentation to permit measurement of the indoor test room dry-bulb temperature.

b. On the outdoor side, use one of the following two approaches, except that approach (1) is required for all evaporatively cooled units and units that transfer condensate to the outdoor unit for evaporation using condenser heat.

(1) Use sampling tree air collection on all air-inlet surfaces of the outdoor unit.

(2) Use sampling tree air collection on one or more faces of the outdoor unit and demonstrate air temperature uniformity as follows. Install a grid of evenly distributed thermocouples on each air-permitting face on the inlet of the outdoor unit. Install the thermocouples on the air sampling device, locate them individually or attach them to a wire structure. If not installed on the air sampling device, install the thermocouple grid 6 to 24 inches from the unit. Evenly space the thermocouples across the coil inlet surface and install them to avoid sampling of discharge air or blockage of air recirculation. The grid of thermocouples must provide at least 16 measuring points per face or one measurement per square foot of inlet face

area, whichever is less. Construct this grid and use as per section 5.3 of ANSI/ASHRAE 41.1–2013 (incorporated by reference, see § 430.3). The maximum difference between the average temperatures measured during the test period of any two pairs of these individual thermocouples located at any of the faces of the inlet of the outdoor unit, must not exceed 2.0 °F, otherwise use approach (1).

Locate the air sampling devices at the geometric center of each side; the branches may be oriented either parallel or perpendicular to the longer edges of the air inlet area. Size the air sampling devices in the outdoor air inlet location such that they cover at least 75% of the face area of the side of the coil that they are measuring.

Review air distribution at the test facility point of supply to the unit and remediate as necessary prior to the beginning of testing. Mixing fans can be used to ensure adequate air distribution in the test room. If used, orient mixing fans such that they are pointed away from the air intake so that the mixing fan exhaust does not affect the outdoor coil air volume rate. Particular attention should be given to prevent the mixing fans from affecting (enhancing or limiting) recirculation of condenser fan exhaust air back through the unit. Any fan used to enhance test room air mixing shall not cause air velocities in the vicinity of the test unit to exceed 500 feet per minute.

The air sampling device may be larger than the face area of the side being measured. Take care, however, to prevent discharge air from being sampled. If an air sampling device dimension extends beyond the inlet area of the unit, block holes in the air sampling device to prevent sampling of discharge air. Holes can be blocked to reduce the region of coverage of the intake holes both in the direction of the trunk axis or perpendicular to the trunk axis. For intake hole region reduction in the direction of the trunk axis, block holes of one or more adjacent pairs of branches (the branches of a pair connect opposite each other at the same trunk location) at either the outlet end or the closed end of the trunk. For intake hole region reduction perpendicular to the trunk axis, block off the same number of holes on each branch on both sides of the trunk.

Connect a maximum of four (4) air sampling devices to each aspirating psychrometer. In order to proportionately divide the flow stream for multiple air sampling devices for a given aspirating psychrometer, the tubing or conduit conveying sampled air to the psychrometer must be of equivalent lengths for each air sampling device. Preferentially, the air sampling device should be hard connected to the aspirating psychrometer, but if space constraints do not allow this, the assembly shall have a means of allowing a flexible tube to connect the air sampling device to the aspirating psychrometer. Insulate and route the tubing or conduit to prevent heat transfer to the air stream. Insulate any surface of the air conveying tubing in contact with surrounding air at a different temperature than the sampled air with thermal insulation with a nominal thermal resistance (R-value) of at least 19 hr • ft^2 • °F/Btu. Alternatively the conduit may have lower thermal resistance if additional sensor(s) are used to measure dry bulb temperature at the outlet of each air sampling device. No part of the air sampling device or the tubing conducting the sampled air to the sensors may be within two inches of the test chamber floor.

Take pairs of measurements (*e.g.* dry bulb temperature and wet bulb temperature) used to determine water vapor content of sampled air in the same location.

2.12 Measurement of Indoor Blower Speed

When required, measure fan speed using a revolution counter, tachometer, or stroboscope that gives readings accurate to within ±1.0 percent.

2.13 Measurement of Barometric Pressure

Determine the average barometric pressure during each test. Use an instrument that meets the requirements specified in section 5.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3).

2.14 Air Sampling Device and Aspirating Psychrometer Requirements

Make air temperature measurements in accordance with ANSI/ASHRAE 41.1–2013 (incorporated by reference, see § 430.3), unless otherwise instructed in this section.

2.14.1 Air Sampling Device Requirements

The air sampling device is intended to draw in a sample of the air at the critical locations of a unit under test. Construct the device from stainless steel, plastic or other suitable, durable materials. It shall have a main flow trunk tube with a series of branch tubes connected to the trunk tube. Holes must be on the side of the sampler facing the upstream direction of the air source. Use other sizes and rectangular shapes, and scale them accordingly with the following guidelines:

1. Minimum hole density of 6 holes per square foot of area to be sampled.
2. Sampler branch tube pitch (spacing) of 6 ± 3 in.
3. Manifold trunk to branch diameter ratio having a minimum of 3:1 ratio.
4. Distribute hole pitch (spacing) equally over the branch (½ pitch from the closed end to the nearest hole).
5. Maximum individual hole to branch diameter ratio of 1:2 (1:3 preferred).

The minimum average velocity through the air sampling device holes must be 2.5 ft/s as determined by evaluating the sum of the open area of the holes as compared to the flow area in the aspirating psychrometer.

2.14.2 Aspirating Psychrometer

The psychrometer consists of a flow section and a fan to draw air through the flow section and measures an average value of the sampled air stream. At a minimum, the flow section shall have a means for measuring the dry bulb temperature (typically, a resistance temperature device (RTD) and a means for measuring the humidity (RTD with wetted sock, chilled mirror hygrometer, or relative humidity sensor). The aspirating psychrometer shall include a fan that either can be adjusted manually or automatically to maintain required velocity across the sensors.

Construct the psychrometer using suitable material which may be plastic (such as polycarbonate), aluminum or other metallic materials. Construct all psychrometers for a given system being tested, using the same material. Design the psychrometers such that radiant heat from the motor (for driving the fan that draws sampled air through the psychrometer) does not affect sensor measurements. For aspirating psychrometers, velocity across the wet bulb sensor must be 1000 ± 200 ft/min. For all other psychrometers, velocity must be as specified by the sensor manufacturer.

3 Testing Procedures

3.1 General Requirements

If, during the testing process, an equipment set-up adjustment is made that would have altered the performance of the unit during any already completed test, then repeat all tests affected by the adjustment. For cyclic tests, instead of maintaining an air volume rate, for each airflow nozzle, maintain the static pressure difference or velocity pressure during an ON period at the same pressure difference or velocity pressure as measured during the steady-state test conducted at the same test conditions.

Use the testing procedures in this section to collect the data used for calculating

(1) Performance metrics for central air conditioners and heat pumps during the cooling season;

(2) Performance metrics for heat pumps during the heating season; and

(3) Power consumption metric(s) for central air conditioners and heat pumps during the off mode season(s).

3.1.1 Primary and Secondary Test Methods

For all tests, use the indoor air enthalpy method test apparatus to determine the unit's space conditioning capacity. The procedure and data collected, however, differ slightly depending upon whether the test is a steady-state test, a cyclic test, or a frost accumulation test. The following sections described these differences. For full-capacity cooling-mode test and (for a heat pump) the full-capacity heating-mode test, use one of the acceptable secondary methods specified in section 2.10 of this appendix to determine indoor space conditioning capacity. Calculate this secondary check of capacity according to section 3.11 of this appendix. The two capacity measurements must agree to within 6 percent to constitute a valid test. For this capacity comparison, use the Indoor Air Enthalpy Method capacity that is calculated in section 7.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) (and, if testing a coil-only system, compare capacities before making the after-test fan heat adjustments described in section 3.3, 3.4, 3.7, and 3.10 of this appendix). However, include the appropriate section 3.3 to 3.5 and 3.7 to 3.10 fan heat adjustments within the indoor air enthalpy method capacities used for the section 4 seasonal calculations of this appendix.

3.1.2 Manufacturer-Provided Equipment Overrides

Where needed, the manufacturer must provide a means for overriding the controls of the test unit so that the compressor(s) operates at the specified speed or capacity

and the indoor blower operates at the specified speed or delivers the specified air volume rate.

3.1.3 Airflow Through the Outdoor Coil

For all tests, meet the requirements given in section 6.1.3.4 of AHRI 210/240–2008 (incorporated by reference, see § 430.3) when obtaining the airflow through the outdoor coil.

3.1.3.1 Double-Ducted

For products intended to be installed with the outdoor airflow ducted, install the unit with outdoor coil ductwork installed per manufacturer installation instructions. The unit must operate between 0.10 and 0.15 in H_2O external static pressure. Make external static pressure measurements in accordance with ANSI/ASHRAE 37–2009 section 6.4 and 6.5.

3.1.4 Airflow Through the Indoor Coil

Determine airflow setting(s) before testing begins. Unless otherwise specified within this or its subsections, make no changes to the airflow setting(s) after initiation of testing.

3.1.4.1 Cooling Full-Load Air Volume Rate

3.1.4.1.1 Cooling Full-Load Air Volume Rate for Ducted Units

Identify the certified Cooling full-load air volume rate and certified instructions for setting fan speed or controls. If there is no certified Cooling full-load air volume rate, use a value equal to the certified cooling capacity of the unit times 400 scfm per 12,000 Btu/h. If there are no instructions for setting fan speed or controls, use the as-shipped settings. Use the following procedure to confirm and, if necessary, adjust the Cooling full-load air volume rate and the fan speed or control settings to meet each test procedure requirement:

a. For all ducted blower coil systems, except those having a constant-air-volume-rate indoor blower:

Step (1) Operate the unit under conditions specified for the A (for single-stage units) or A_2 test using the certified fan speed or controls settings, and adjust the exhaust fan of the airflow measuring apparatus to achieve the certified Cooling full-load air volume rate;

Step (2) Measure the external static pressure;

Step (3) If this external static pressure is equal to or greater than the applicable minimum external static pressure cited in Table 4, the pressure requirement is satisfied; proceed to step 7 of this section. If this external static pressure is not equal to or greater than the applicable minimum external static pressure cited in Table 4, proceed to step 4 of this section;

Step (4) Increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until either

(i) The applicable Table 4 minimum is equaled or

(ii) The measured air volume rate equals 90 percent or less of the Cooling full-load air volume rate, whichever occurs first;

Step (5) If the conditions of step 4 (i) of this section occur first, the pressure requirement is satisfied; proceed to step 7 of this section. If the conditions of step 4 (ii) of this section occur first, proceed to step 6 of this section;

Step (6) Make an incremental change to the setup of the indoor blower (*e.g.,* next highest fan motor pin setting, next highest fan motor speed) and repeat the evaluation process beginning above, at step 1 of this section. If the indoor blower setup cannot be further changed, increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until the applicable Table 4 minimum is equaled; proceed to step 7 of this section;

Step (7) The airflow constraints have been satisfied. Use the measured air volume rate as the Cooling full-load air volume rate. Use the final fan speed or control settings for all tests that use the Cooling full-load air volume rate.

b. For ducted blower coil systems with a constant-air-volume-rate indoor blower. For all tests that specify the Cooling full-load air volume rate, obtain an external static pressure as close to (but not less than) the applicable Table 4 value that does not cause automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined as follows, greater than 10 percent.

$$Q_{Var} = \left[\frac{Q_{max} - Q_{min}}{\left(\frac{Q_{max} + Q_{min}}{2}\right)}\right] * 100$$

Where:

Q_{max} = maximum measured airflow value

Q_{min} = minimum measured airflow value

Q_{Var} = airflow variance, percent

Additional test steps as described in section 3.3.e of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For coil-only indoor units. For the A or A_2 Test, (exclusively), the pressure drop across the indoor coil assembly must not exceed 0.30 inches of water. If this pressure drop is exceeded, reduce the air volume rate until the measured pressure drop equals the specified maximum. Use this reduced air volume rate for all tests that require the Cooling full-load air volume rate.

TABLE 4—MINIMUM EXTERNAL STATIC PRESSURE FOR DUCTED BLOWER COIL SYSTEMS

Product variety	Minimum external static pressure (in. wc.)
Conventional (*i.e.,* all central air conditioners and heat pumps not otherwise listed in this table)	0.50
Ceiling-mount and Wall-mount	0.30
Mobile Home	0.30
Low Static	0.10
Mid Static	0.30
Small Duct, High Velocity	1.15
Space-constrained	0.30

[1] For ducted units tested without an air filter installed, increase the applicable tabular value by 0.08 inches of water.

[2] See section 1.2, Definitions, to determine for which Table 4 product variety and associated minimum external static pressure requirement equipment qualifies.

[3] If a closed-loop, air-enthalpy test apparatus is used on the indoor side, limit the resistance to airflow on the inlet side of the indoor blower coil to a maximum value of 0.1 inch of water.

d. For ducted systems having multiple indoor blowers within a single indoor section, obtain the full-load air volume rate with all indoor blowers operating unless prevented by the controls of the unit. In such cases, turn on the maximum number of indoor blowers permitted by the unit's controls. Where more than one option exists for meeting this ''on'' indoor blower requirement, which indoor blower(s) are turned on must match that specified in the certification report. Conduct section 3.1.4.1.1 setup steps for each indoor blower separately. If two or more indoor blowers are connected to a common duct as per section 2.4.1 of this appendix, temporarily divert their air volume to the test room when confirming or adjusting the setup configuration of individual indoor blowers. The allocation of the system's full-load air volume rate assigned to each ''on'' indoor blower must match that specified by the manufacturer in the certification report.

3.1.4.1.2 Cooling Full-Load Air Volume Rate for Non-Ducted Units

For non-ducted units, the Cooling full-load air volume rate is the air volume rate that results during each test when the unit is operated at an external static pressure of zero inches of water.

3.1.4.2 Cooling Minimum Air Volume Rate

Identify the certified cooling minimum air volume rate and certified instructions for setting fan speed or controls. If there is no certified cooling minimum air volume rate, use the final indoor blower control settings as determined when setting the cooling full-load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full load air volume obtained in section 3.1.4.1 of this appendix. Otherwise, calculate the target external static pressure and follow instructions a, b, c, d, or e of this section. The target external static pressure, ΔP_{st_i}, for any test ''i'' with a specified air volume rate not equal to the Cooling full-load air volume rate is determined as follows:

$$\Delta P_{st_i} = \Delta P_{st_full} \left[\frac{Q_i}{Q_{full}}\right]^2$$

Where:

ΔP_{st_i} = target minimum external static pressure for test i;

ΔP_{st_full} = minimum external static pressure for test A or A_2 (Table 4);

Q_i = air volume rate for test i; and

Q_{full} = Cooling full-load air volume rate as measured after setting and/or adjustment as described in section 3.1.4.1.1 of this appendix.

a. For a ducted blower coil system without a constant-air-volume indoor blower, adjust for external static pressure as follows:

Step (1) Operate the unit under conditions specified for the B_1 test using the certified fan speed or controls settings, and adjust the exhaust fan of the airflow measuring apparatus to achieve the certified cooling minimum air volume rate;

Step (2) Measure the external static pressure;

Step (3) If this pressure is equal to or greater than the minimum external static pressure computed above, the pressure requirement is satisfied; proceed to step 7 of this section. If this pressure is not equal to or greater than the minimum external static pressure computed above, proceed to step 4 of this section;

Step (4) Increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until either

(i) The pressure is equal to the minimum external static pressure computed above or

(ii) The measured air volume rate equals 90 percent or less of the cooling minimum air volume rate, whichever occurs first;

Step (5) If the conditions of step 4 (i) of this section occur first, the pressure requirement is satisfied; proceed to step 7 of this section. If the conditions of step 4 (ii) of this section occur first, proceed to step 6 of this section;

Step (6) Make an incremental change to the setup of the indoor blower (*e.g.,* next highest fan motor pin setting, next highest fan motor speed) and repeat the evaluation process beginning above, at step 1 of this section. If the indoor blower setup cannot be further changed, increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until it equals the minimum external static pressure computed above; proceed to step 7 of this section;

Step (7) The airflow constraints have been satisfied. Use the measured air volume rate as the cooling minimum air volume rate. Use the final fan speed or control settings for all tests that use the cooling minimum air volume rate.

b. For ducted units with constant-air-volume indoor blowers, conduct all tests that specify the cooling minimum air volume rate—(*i.e.,* the A_1, B_1, C_1, F_1, and G_1 Tests)—at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.3.e of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For ducted two-capacity coil-only systems, the cooling minimum air volume rate is the higher of—

(1) The rate specified by the installation instructions included with the unit by the manufacturer; or

(2) 75 percent of the cooling full-load air volume rate. During the laboratory tests on a coil-only (fanless) system, obtain this cooling minimum air volume rate regardless of the pressure drop across the indoor coil assembly.

d. For non-ducted units, the cooling minimum air volume rate is the air volume rate that results during each test when the unit operates at an external static pressure of zero inches of water and at the indoor blower setting used at low compressor capacity (two-capacity system) or minimum compressor speed (variable-speed system). For units having a single-speed compressor and a variable-speed variable-air-volume-rate indoor blower, use the lowest fan setting allowed for cooling.

e. For ducted systems having multiple indoor blowers within a single indoor section, operate the indoor blowers such that the lowest air volume rate allowed by the unit's controls is obtained when operating the lone single-speed compressor or when operating at low compressor capacity while meeting the requirements of section 2.2.3.2 of this appendix for the minimum number of blowers that must be turned off. Using the target external static pressure and the certified air volume rates, follow the procedures described in section 3.1.4.2.a of this appendix if the indoor blowers are not constant-air-volume indoor blowers or as described in section 3.1.4.2.b of this appendix if the indoor blowers are not constant-air-volume indoor blowers. The sum of the individual ''on'' indoor blowers' air volume rates is the cooling minimum air volume rate for the system.

3.1.4.3 Cooling Intermediate Air Volume Rate

Identify the certified cooling intermediate air volume rate and certified instructions for setting fan speed or controls. If there is no certified cooling intermediate air volume rate, use the final indoor blower control settings as determined when setting the cooling full load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full load air volume obtained in section 3.1.4.1 of this appendix. Otherwise, calculate target minimum external static pressure as described in section 3.1.4.2 of this appendix, and set the air volume rate as follows.

a. For a ducted blower coil system without a constant-air-volume indoor blower, adjust for external static pressure as described in section 3.1.4.2.a of this appendix for cooling minimum air volume rate.

b. For a ducted blower coil system with a constant-air-volume indoor blower, conduct the E_V Test at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.3.e of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For non-ducted units, the cooling intermediate air volume rate is the air volume rate that results when the unit operates at an external static pressure of zero inches of water and at the fan speed selected by the controls of the unit for the E_V Test conditions.

3.1.4.4 Heating Full-Load Air Volume Rate

3.1.4.4.1 Ducted Heat Pumps Where the Heating and Cooling Full-Load Air Volume Rates Are the Same

a. Use the Cooling full-load air volume rate as the heating full-load air volume rate for:

(1) Ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, and that operate at the same airflow-control setting during both the A (or A_2) and the H1 (or $H1_2$) Tests;

(2) Ducted blower coil system heat pumps with constant-air-flow indoor blowers that provide the same airflow for the A (or A_2) and the H1 (or $H1_2$) Tests; and

(3) Ducted heat pumps that are tested with a coil-only indoor unit (except two-capacity northern heat pumps that are tested only at low capacity cooling—see section 3.1.4.4.2 of this appendix).

b. For heat pumps that meet the above criteria ''1'' and ''3,'' no minimum requirements apply to the measured external or internal, respectively, static pressure. Use the final indoor blower control settings as determined when setting the Cooling full-load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full-load air volume obtained in section 3.1.4.1 of this appendix. For heat pumps that meet the above criterion ''2,'' test at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than, the same Table 4 minimum external static pressure as was specified for the A (or A_2) cooling mode test. Additional test steps as described in section 3.9.1.c of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

3.1.4.4.2 Ducted Heat Pumps Where the Heating and Cooling Full-Load Air Volume Rates Are Different Due to Changes in Indoor Blower Operation, i.e. Speed Adjustment by the System Controls

Identify the certified heating full-load air volume rate and certified instructions for setting fan speed or controls. If there is no certified heating full-load air volume rate, use the final indoor blower control settings as determined when setting the cooling full-load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full-load air volume obtained in section 3.1.4.1 of this appendix. Otherwise, calculate the target minimum external static pressure as described in section 3.1.4.2 of this appendix and set the air volume rate as follows.

a. For ducted blower coil system heat pumps that do not have a constant-air-

volume indoor blower, adjust for external static pressure as described in section 3.1.4.2.a of this appendix for cooling minimum air volume rate.

b. For ducted heat pumps tested with constant-air-volume indoor blowers installed, conduct all tests that specify the heating full-load air volume rate at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.9.1.c of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. When testing ducted, two-capacity blower coil system northern heat pumps (see section 1.2 of this appendix, Definitions), use the appropriate approach of the above two cases. For coil-only system northern heat pumps, the heating full-load air volume rate is the lesser of the rate specified by the manufacturer in the installation instructions included with the unit or 133 percent of the cooling full-load air volume rate. For this latter case, obtain the heating full-load air volume rate regardless of the pressure drop across the indoor coil assembly.

d. For ducted systems having multiple indoor blowers within a single indoor section, obtain the heating full-load air volume rate using the same ''on'' indoor blowers as used for the Cooling full-load air volume rate. Using the target external static pressure and the certified air volume rates, follow the procedures as described in section 3.1.4.4.2.a of this appendix if the indoor blowers are not constant-air-volume indoor blowers or as described in section 3.1.4.4.2.b of this appendix if the indoor blowers are constant-air-volume indoor blowers. The sum of the individual ''on'' indoor blowers' air volume rates is the heating full-load air volume rate for the system.

3.1.4.4.3 Ducted Heating-Only Heat Pumps

Identify the certified heating full-load air volume rate and certified instructions for setting fan speed or controls. If there is no certified heating full-load air volume rate, use a value equal to the certified heating capacity of the unit times 400 scfm per 12,000 Btu/h. If there are no instructions for setting fan speed or controls, use the as-shipped settings.

a. For all ducted heating-only blower coil system heat pumps, except those having a constant-air-volume-rate indoor blower. Conduct the following steps only during the first test, the H1 or $H1_2$ test:

Step (1) Adjust the exhaust fan of the airflow measuring apparatus to achieve the certified heating full-load air volume rate.

Step (2) Measure the external static pressure.

Step (3) If this pressure is equal to or greater than the Table 4 minimum external static pressure that applies given the heating-only heat pump's rated heating capacity, the pressure requirement is satisfied; proceed to step 7 of this section. If this pressure is not equal to or greater than the applicable Table 4 minimum external static pressure, proceed to step 4 of this section;

Step (4) Increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until either—

(i) The pressure is equal to the applicable Table 4 minimum external static pressure; or

(ii) The measured air volume rate equals 90 percent or less of the heating full-load air volume rate, whichever occurs first;

Step (5) If the conditions of step 4 (i) of this section occur first, the pressure requirement is satisfied; proceed to step 7 of this section. If the conditions of step 4 (ii) of this section occur first, proceed to step 6 of this section;

Step (6) Make an incremental change to the setup of the indoor blower (*e.g.,* next highest fan motor pin setting, next highest fan motor speed) and repeat the evaluation process beginning above, at step 1 of this section. If the indoor blower setup cannot be further changed, increase the external static pressure by adjusting the exhaust fan of the airflow measuring apparatus until it equals the applicable Table 4 minimum external static pressure; proceed to step 7 of this section;

Step (7) The airflow constraints have been satisfied. Use the measured air volume rate as the heating full-load air volume rate. Use the final fan speed or control settings for all tests that use the heating full-load air volume rate.

b. For ducted heating-only blower coil system heat pumps having a constant-air-volume-rate indoor blower. For all tests that specify the heating full-load air volume rate, obtain an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this section, greater than 10 percent, while being as close to, but not less than, the applicable Table 4 minimum. Additional test steps as described in section 3.9.1.c of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For ducted heating-only coil-only system heat pumps in the H1 or $H1_2$ Test, (exclusively), the pressure drop across the indoor coil assembly must not exceed 0.30 inches of water. If this pressure drop is exceeded, reduce the air volume rate until the measured pressure drop equals the specified maximum. Use this reduced air volume rate for all tests that require the heating full-load air volume rate.

3.1.4.4.4 Non-Ducted Heat Pumps, Including Non-Ducted Heating-Only Heat Pumps

For non-ducted heat pumps, the heating full-load air volume rate is the air volume rate that results during each test when the unit operates at an external static pressure of zero inches of water.

3.1.4.5 Heating Minimum Air Volume Rate

3.1.4.5.1 Ducted Heat Pumps Where the Heating and Cooling Minimum Air Volume Rates are the Same

a. Use the cooling minimum air volume rate as the heating minimum air volume rate for:

(1) Ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, and that operates at the same airflow-control setting during both the A_1 and the $H1_1$ tests;

(2) Ducted blower coil system heat pumps with constant-air-flow indoor blowers installed that provide the same airflow for the A_1 and the $H1_1$ Tests; and

(3) Ducted coil-only system heat pumps.

b. For heat pumps that meet the above criteria ''1'' and ''3,'' no minimum requirements apply to the measured external or internal, respectively, static pressure. Use the final indoor blower control settings as determined when setting the cooling minimum air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling minimum air volume rate obtained in section 3.1.4.2 of this appendix. For heat pumps that meet the above criterion ''2,'' test at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b, greater than 10 percent, while being as close to, but not less than, the same target minimum external static pressure as was specified for the A_1 cooling mode test. Additional test steps as described in section 3.9.1.c of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

3.1.4.5.2 Ducted Heat Pumps Where the Heating and Cooling Minimum Air Volume Rates Are Different Due to Indoor Blower Operation, *i.e.* Speed Adjustment by the System Controls

Identify the certified heating minimum air volume rate and certified instructions for setting fan speed or controls. If there is no certified heating minimum air volume rate, use the final indoor blower control settings as determined when setting the cooling minimum air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling minimum air volume obtained in section 3.1.4.2 of this appendix. Otherwise, calculate the target minimum external static pressure as described in section 3.1.4.2 of this appendix.

a. For ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, adjust for external static pressure as described in section 3.1.4.2.a of this appendix for cooling minimum air volume rate.

b. For ducted heat pumps tested with constant-air-volume indoor blowers installed, conduct all tests that specify the heating minimum air volume rate—(*i.e.,* the $H0_1$, $H1_1$, $H2_1$, and $H3_1$ Tests)—at an external static pressure that does not cause an automatic shutdown of the indoor blower while being as close to, but not less than the air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.9.1.c of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For ducted two-capacity blower coil system northern heat pumps, use the appropriate approach of the above two cases.

d. For ducted two-capacity coil-only system heat pumps, use the cooling minimum air volume rate as the heating minimum air volume rate. For ducted two-capacity coil-only system northern heat pumps, use the cooling full-load air volume rate as the heating minimum air volume rate. For ducted two-capacity heating-only coil-only system heat pumps, the heating minimum air volume rate is the higher of the rate specified by the manufacturer in the test setup instructions included with the unit or 75 percent of the heating full-load air volume rate. During the laboratory tests on a coil-only system, obtain the heating minimum air volume rate without regard to the pressure drop across the indoor coil assembly.

e. For non-ducted heat pumps, the heating minimum air volume rate is the air volume rate that results during each test when the unit operates at an external static pressure of zero inches of water and at the indoor blower setting used at low compressor capacity (two-capacity system) or minimum compressor speed (variable-speed system). For units having a single-speed compressor and a variable-speed, variable-air-volume-rate indoor blower, use the lowest fan setting allowed for heating.

f. For ducted systems with multiple indoor blowers within a single indoor section, obtain the heating minimum air volume rate using the same ''on'' indoor blowers as used for the cooling minimum air volume rate. Using the target external static pressure and the certified air volume rates, follow the procedures as described in section 3.1.4.5.2.a of this appendix if the indoor blowers are not constant-air-volume indoor blowers or as described in section 3.1.4.5.2.b of this appendix if the indoor blowers are constant-air-volume indoor blowers. The sum of the individual ''on'' indoor blowers' air volume rates is the heating full-load air volume rate for the system.

3.1.4.6 Heating Intermediate Air Volume Rate

Identify the certified heating intermediate air volume rate and certified instructions for setting fan speed or controls. If there is no certified heating intermediate air volume rate, use the final indoor blower control settings as determined when setting the heating full-load air volume rate, and readjust the exhaust fan of the airflow measuring apparatus if necessary to reset to the cooling full-load air volume obtained in section 3.1.4.2 of this appendix. Calculate the target minimum external static pressure as described in section 3.1.4.2 of this appendix.

a. For ducted blower coil system heat pumps that do not have a constant-air-volume indoor blower, adjust for external static pressure as described in section 3.1.4.2.a of this appendix for cooling minimum air volume rate.

b. For ducted heat pumps tested with constant-air-volume indoor blowers installed, conduct the $H2_V$ Test at an external static pressure that does not cause an automatic shutdown of the indoor blower or air volume rate variation Q_{Var}, defined in section 3.1.4.1.1.b of this appendix, greater than 10 percent, while being as close to, but not less than the target minimum external static pressure. Additional test steps as described in section 3.9.1.c of this appendix are required if the measured external static pressure exceeds the target value by more than 0.03 inches of water.

c. For non-ducted heat pumps, the heating intermediate air volume rate is the air volume rate that results when the heat pump operates at an external static pressure of zero inches of water and at the fan speed selected by the controls of the unit for the $H2_V$ Test conditions.

3.1.4.7 Heating Nominal Air Volume Rate

The manufacturer must specify the heating nominal air volume rate and the instructions for setting fan speed or controls. Calculate target minimum external static pressure as described in section 3.1.4.2 of this appendix. Make adjustments as described in section 3.14.6 of this appendix for heating intermediate air volume rate so that the target minimum external static pressure is met or exceeded.

3.1.5 Indoor Test Room Requirement When the Air Surrounding the Indoor Unit is Not Supplied From the Same Source as the Air Entering the Indoor Unit

If using a test set-up where air is ducted directly from the air reconditioning apparatus to the indoor coil inlet (see Figure 2, Loop Air-Enthalpy Test Method Arrangement, of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3)), maintain the dry bulb temperature within the test room within ±5.0 °F of the applicable sections 3.2 and 3.6 dry bulb temperature test condition for the air entering the indoor unit. Dew point must be within 2 °F of the required inlet conditions.

3.1.6 Air Volume Rate Calculations

For all steady-state tests and for frost accumulation ($H2$, $H2_1$, $H2_2$, $H2_V$) tests, calculate the air volume rate through the indoor coil as specified in sections 7.7.2.1 and 7.7.2.2 of ANSI/ASHRAE 37–2009. When using the outdoor air enthalpy method, follow sections 7.7.2.1 and 7.7.2.2 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) to calculate the air volume rate through the outdoor coil. To express air volume rates in terms of standard air, use:

Equation 3-1

$$\overline{\dot{V}_s} = \frac{\overline{\dot{V}_{mx}}}{0.075\,\frac{lbm_{da}}{ft^3} * v_n' * [1+W_n]} = \frac{\overline{\dot{V}_{mx}}}{0.075\,\frac{lbm_{da}}{ft^3} * v_n}$$

Where:

$\overline{V}_s$ = air volume rate of standard (dry) air, $(ft^3/min)_{da}$

$\overline{V}_{mx}$ = air volume rate of the air-water vapor mixture, $(ft^3/min)_{mx}$

v_n' = specific volume of air-water vapor mixture at the nozzle, ft^3 per lbm of the air-water vapor mixture

W_n = humidity ratio at the nozzle, lbm of water vapor per lbm of dry air

0.075 = the density associated with standard (dry) air, (lbm/ft^3)

v_n = specific volume of the dry air portion of the mixture evaluated at the dry-bulb temperature, vapor content, and barometric pressure existing at the nozzle, ft^3 per lbm of dry air.

(**Note:** In the first printing of ANSI/ASHRAE 37–2009, the second IP equation for Q_{mi} should read,

$$Q_{mi} = 1097CA_n\sqrt{P_V v_n'})$$

3.1.7 Test Sequence

Before making test measurements used to calculate performance, operate the equipment for the ''break-in'' period specified in the certification report, which may not exceed 20 hours. Each compressor of the unit must undergo this ''break-in'' period. When testing a ducted unit (except if a heating-only heat pump), conduct the A or A_2 Test first to establish the cooling full-load air volume rate. For ducted heat pumps where the heating and cooling full-load air volume rates are different, make the first heating mode test one that requires the heating full-load air volume rate. For ducted heating-only heat pumps, conduct the H1 or $H1_2$ Test first to establish the heating full-load air volume rate. When conducting a cyclic test, always conduct it immediately after the steady-state test that requires the same test conditions. For variable-speed systems, the first test using the cooling minimum air volume rate should precede the E_V Test, and the first test using the heating minimum air volume rate must precede the $H2_V$ Test. The test laboratory makes all other decisions on the test sequence.

3.1.8 Requirement for the Air Temperature Distribution Leaving the Indoor Coil

For at least the first cooling mode test and the first heating mode test, monitor the temperature distribution of the air leaving the indoor coil using the grid of individual sensors described in sections 2.5 and 2.5.4 of this appendix. For the 30-minute data collection interval used to determine capacity, the maximum spread among the outlet dry bulb temperatures from any data sampling must not exceed 1.5 °F. Install the mixing devices described in section 2.5.4.2 of this appendix to minimize the temperature spread.

3.1.9 Requirement for the Air Temperature Distribution Entering the Outdoor Coil

Monitor the Temperatures of the Air Entering the Outdoor Coil Using Air Sampling Devices and/or Temperature Sensor Grids, Maintaining the Required Tolerances, if Applicable, as Described in section 2.11 of this appendix

3.1.10 Control of Auxiliary Resistive Heating Elements

Except as noted, disable heat pump resistance elements used for heating indoor air at all times, including during defrost cycles and if they are normally regulated by a heat comfort controller. For heat pumps equipped with a heat comfort controller, enable the heat pump resistance elements only during the below-described, short test. For single-speed heat pumps covered under section 3.6.1 of this appendix, the short test follows the H1 or, if conducted, the H1C Test. For two-capacity heat pumps and heat pumps covered under section 3.6.2 of this appendix, the short test follows the $H1_2$ Test. Set the heat comfort controller to provide the maximum supply air temperature. With the heat pump operating and while maintaining the heating full-load air volume rate, measure the temperature of the air leaving the indoor-side beginning 5 minutes after activating the heat comfort controller. Sample the outlet dry-bulb temperature at regular intervals that span 5 minutes or less. Collect data for 10 minutes, obtaining at least 3 samples. Calculate the average outlet temperature over the 10-minute interval, T_{CC}.

3.2 Cooling Mode Tests for Different Types of Air Conditioners and Heat Pumps

3.2.1 Tests for a System Having a Single-Speed Compressor and Fixed Cooling Air Volume Rate

This set of tests is for single-speed-compressor units that do not have a cooling minimum air volume rate or a cooling intermediate air volume rate that is different than the cooling full load air volume rate. Conduct two steady-state wet coil tests, the A and B Tests. Use the two optional dry-coil tests, the steady-state C Test and the cyclic D Test, to determine the cooling mode cyclic degradation coefficient, $C_D{}^c$. If the two optional tests are conducted but yield a tested $C_D{}^c$ that exceeds the default $C_D{}^c$ or if the two optional tests are not conducted, assign $C_D{}^c$ the default value of 0.25 (for outdoor units with no match) or 0.2 (for all other systems). Table 5 specifies test conditions for these four tests.

TABLE 5—COOLING MODE TEST CONDITIONS FOR UNITS HAVING A SINGLE-SPEED COMPRESSOR AND A FIXED COOLING AIR VOLUME RATE

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Cooling air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
A Test—required (steady, wet coil)	80	67	95	[1] 75	Cooling full-load [2].
B Test—required (steady, wet coil)	80	67	82	[1] 65	Cooling full-load [2].
C Test—optional (steady, dry coil)	80	([3])	82		Cooling full-load [2].
D Test—optional (cyclic, dry coil)	80	([3])	82		([4]).

[1] The specified test condition only applies if the unit rejects condensate to the outdoor coil.
[2] Defined in section 3.1.4.1 of this appendix.
[3] The entering air must have a low enough moisture content so no condensate forms on the indoor coil. (It is recommended that an indoor wet-bulb temperature of 57 °F or less be used.)
[4] Maintain the airflow nozzles static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the C Test.

3.2.2 Tests for a Unit Having a Single-Speed Compressor Where the Indoor Section Uses a Single Variable-Speed Variable-Air-Volume Rate Indoor Blower or Multiple Indoor Blowers

3.2.2.1 Indoor Blower Capacity Modulation That Correlates With the Outdoor Dry Bulb Temperature or Systems With a Single Indoor Coil but Multiple Indoor Blowers

Conduct four steady-state wet coil tests: The A_2, A_1, B_2, and B_1 tests. Use the two optional dry-coil tests, the steady-state C_1 test and the cyclic D_1 test, to determine the cooling mode cyclic degradation coefficient, $C_D{}^c$. If the two optional tests are conducted but yield a tested $C_D{}^c$ that exceeds the default $C_D{}^c$ or if the two optional tests are not conducted, assign $C_D{}^c$ the default value of 0.2.

3.2.2.2 Indoor Blower Capacity Modulation Based on Adjusting the Sensible to Total (S/T) Cooling Capacity Ratio

The testing requirements are the same as specified in section 3.2.1 of this appendix and Table 5. Use a cooling full-load air volume rate that represents a normal installation. If performed, conduct the steady-state C Test and the cyclic D Test with the unit operating in the same S/T capacity control mode as used for the B Test.

TABLE 6—COOLING MODE TEST CONDITIONS FOR UNITS WITH A SINGLE-SPEED COMPRESSOR THAT MEET THE SECTION 3.2.2.1 INDOOR UNIT REQUIREMENTS

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Cooling air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
A_2 Test—required (steady, wet coil)	80	67	95	[1] 75	Cooling full-load [2].
A_1 Test—required (steady, wet coil)	80	67	95	[1] 75	Cooling minimum [3].
B_2 Test—required (steady, wet coil)	80	67	82	[1] 65	Cooling full-load [2].
B_1 Test—required (steady, wet coil)	80	67	82	[1] 65	Cooling minimum [3].
C_1 Test[4]—optional (steady, dry coil)	80	([4])	82		Cooling minimum [3].
D_1 Test[4]—optional (cyclic, dry coil)	80	([4])	82		([5]).

[1] The specified test condition only applies if the unit rejects condensate to the outdoor coil.
[2] Defined in section 3.1.4.1 of this appendix.
[3] Defined in section 3.1.4.2 of this appendix.

[4] The entering air must have a low enough moisture content so no condensate forms on the indoor coil. (It is recommended that an indoor wet-bulb temperature of 57 °F or less be used.)

[5] Maintain the airflow nozzles static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the C_1 Test.

3.2.3 Tests for a Unit Having a Two-Capacity Compressor. (See Section 1.2 of This Appendix, Definitions)

a. Conduct four steady-state wet coil tests: the A_2, B_2, B_1, and F_1 Tests. Use the two optional dry-coil tests, the steady-state C_1 Test and the cyclic D_1 Test, to determine the cooling-mode cyclic-degradation coefficient, $C_D{}^c$. If the two optional tests are conducted but yield a tested $C_D{}^c$ that exceeds the default $C_D{}^c$ or if the two optional tests are not conducted, assign $C_D{}^c$ the default value of 0.2. Table 7 specifies test conditions for these six tests.

b. For units having a variable-speed indoor blower that is modulated to adjust the sensible to total (S/T) cooling capacity ratio, use cooling full-load and cooling minimum air volume rates that represent a normal installation. Additionally, if conducting the dry-coil tests, operate the unit in the same S/T capacity control mode as used for the B_1 Test.

c. Test two-capacity, northern heat pumps (see section 1.2 of this appendix, Definitions) in the same way as a single speed heat pump with the unit operating exclusively at low compressor capacity (see section 3.2.1 of this appendix and Table 5).

d. If a two-capacity air conditioner or heat pump locks out low-capacity operation at higher outdoor temperatures, then use the two dry-coil tests, the steady-state C_2 Test and the cyclic D_2 Test, to determine the cooling-mode cyclic-degradation coefficient that only applies to on/off cycling from high capacity, $C_D{}^c(k=2)$. If the two optional tests are conducted but yield a tested $C_D{}^c(k = 2)$ that exceeds the default $C_D{}^c(k = 2)$ or if the two optional tests are not conducted, assign $C_D{}^c(k = 2)$ the default value. The default $C_D{}^c(k=2)$ is the same value as determined or assigned for the low-capacity cyclic-degradation coefficient, $C_D{}^c$ [or equivalently, $C_D{}^c(k=1)$].

TABLE 7—COOLING MODE TEST CONDITIONS FOR UNITS HAVING A TWO-CAPACITY COMPRESSOR

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Compressor capacity	Cooling air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
A_2 Test—required (steady, wet coil).	80	67	95	[1] 75	High	Cooling Full-Load.[2]
B_2 Test—required (steady, wet coil).	80	67	82	[1] 65	High	Cooling Full-Load.[2]
B_1 Test—required (steady, wet coil).	80	67	82	[1] 65	Low	Cooling Minimum.[3]
C_2 Test—optional (steady, dry-coil).	80	([4])	82	.....	High	Cooling Full-Load.[2]
D_2 Test—optional (cyclic, dry-coil).	80	([4])	82	.....	High	([5]).
C_1 Test—optional (steady, dry-coil).	80	([4])	82	.....	Low	Cooling Minimum.[3]
D_1 Test—optional (cyclic, dry-coil).	80	([4])	82	.....	Low	([6]).
F_1 Test—required (steady, wet coil).	80	67	67	[1] 53.5	Low	Cooling Minimum.[3]

[1] The specified test condition only applies if the unit rejects condensate to the outdoor coil.

[2] Defined in section 3.1.4.1 of this appendix.

[3] Defined in section 3.1.4.2 of this appendix.

[4] The entering air must have a low enough moisture content so no condensate forms on the indoor coil. DOE recommends using an indoor air wet-bulb temperature of 57 °F or less.

[5] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the C_2 Test.

[6] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the C_1 Test.

3.2.4 Tests for a Unit Having a Variable-Speed Compressor

a. Conduct five steady-state wet coil tests: The A_2, E_V, B_2, B_1, and F_1 Tests. Use the two optional dry-coil tests, the steady-state G_1 Test and the cyclic I_1 Test, to determine the cooling mode cyclic degradation coefficient, $C_D{}^c$. If the two optional tests are conducted but yield a tested $C_D{}^c$ that exceeds the default $C_D{}^c$ or if the two optional tests are not conducted, assign $C_D{}^c$ the default value of 0.25. Table 8 specifies test conditions for these seven tests. The compressor shall operate at the same cooling full speed, measured by RPM or power input frequency (Hz), for both the A_2 and B_2 tests. The compressor shall operate at the same cooling minimum speed, measured by RPM or power input frequency (Hz), for the B_1, F_1, G_1, and I_1 tests. Determine the cooling intermediate compressor speed cited in Table 8 using:

$$\text{Cooling intermediate speed} = \text{Cooling minimum speed} + \frac{\text{Cooling full speed} - \text{Cooling minimum speed}}{3}$$

where a tolerance of plus 5 percent or the next higher inverter frequency step from that calculated is allowed.

b. For units that modulate the indoor blower speed to adjust the sensible to total (S/T) cooling capacity ratio, use cooling full-load, cooling intermediate, and cooling minimum air volume rates that represent a normal installation. Additionally, if conducting the dry-coil tests, operate the unit

in the same S/T capacity control mode as used for the F_1 Test.

c. For multiple-split air conditioners and heat pumps (except where noted), the following procedures supersede the above requirements: For all Table 8 tests specified for a minimum compressor speed, turn off at least one indoor unit. The manufacturer shall designate the particular indoor unit(s) that is turned off. The manufacturer must also specify the compressor speed used for the Table 8 E_V Test, a cooling-mode intermediate compressor speed that falls within ¼ and ¾ of the difference between the full and minimum cooling-mode speeds. The manufacturer should prescribe an intermediate speed that is expected to yield the highest EER for the given E_V Test conditions and bracketed compressor speed range. The manufacturer can designate that one or more indoor units are turned off for the E_V Test.

TABLE 8—COOLING MODE TEST CONDITION FOR UNITS HAVING A VARIABLE-SPEED COMPRESSOR

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Compressor speed	Cooling air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
A_2 Test—required (steady, wet coil).	80	67	95	[1] 75	Cooling Full	Cooling Full-Load.[2]
B_2 Test—required (steady, wet coil).	80	67	82	[1] 65	Cooling Full	Cooling Full-Load.[2]
E_V Test—required (steady, wet coil).	80	67	87	[1] 69	Cooling Intermediate ..	Cooling Intermediate.[3]
B_1 Test—required (steady, wet coil).	80	67	82	[1] 65	Cooling Minimum	Cooling Minimum.[4]
F_1 Test—required (steady, wet coil).	80	67	67	[1] 53.5	Cooling Minimum	Cooling Minimum.[4]
G_1 Test[5]—optional (steady, dry-coil).	80	([6])	67	.....	Cooling Minimum	Cooling Minimum.[4]
I_1 Test[5]—optional (cyclic, dry-coil).	80	([6])	67	.....	Cooling Minimum	([6]).

[1] The specified test condition only applies if the unit rejects condensate to the outdoor coil.
[2] Defined in section 3.1.4.1 of this appendix.
[3] Defined in section 3.1.4.3 of this appendix.
[4] Defined in section 3.1.4.2 of this appendix.
[5] The entering air must have a low enough moisture content so no condensate forms on the indoor coil. DOE recommends using an indoor air wet bulb temperature of 57 °F or less.
[6] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the G_1 Test.

3.2.5 Cooling Mode Tests for Northern Heat Pumps With Triple-Capacity Compressors

Test triple-capacity, northern heat pumps for the cooling mode in the same way as specified in section 3.2.3 of this appendix for units having a two-capacity compressor.

3.2.6 Tests for an Air Conditioner or Heat Pump Having a Single Indoor Unit Having Multiple Indoor Blowers and Offering Two Stages of Compressor Modulation

Conduct the cooling mode tests specified in section 3.2.3 of this appendix.

3.3 Test Procedures for Steady-State Wet Coil Cooling Mode Tests (the A, A_2, A_1, B, B_2, B_1, E_V, and F_1 Tests)

a. For the pretest interval, operate the test room reconditioning apparatus and the unit to be tested until maintaining equilibrium conditions for at least 30 minutes at the specified section 3.2 test conditions. Use the exhaust fan of the airflow measuring apparatus and, if installed, the indoor blower of the test unit to obtain and then maintain the indoor air volume rate and/or external static pressure specified for the particular test. Continuously record (see section 1.2 of this appendix, Definitions):

(1) The dry-bulb temperature of the air entering the indoor coil,

(2) The water vapor content of the air entering the indoor coil,

(3) The dry-bulb temperature of the air entering the outdoor coil, and

(4) For the section 2.2.4 of this appendix cases where its control is required, the water vapor content of the air entering the outdoor coil.

Refer to section 3.11 of this appendix for additional requirements that depend on the selected secondary test method.

b. After satisfying the pretest equilibrium requirements, make the measurements specified in Table 3 of ANSI/ASHRAE 37–2009 for the indoor air enthalpy method and the user-selected secondary method. Make said Table 3 measurements at equal intervals that span 5 minutes or less. Continue data sampling until reaching a 30-minute period (*e.g.,* seven consecutive 5-minute samples) where the test tolerances specified in Table 9 are satisfied. For those continuously recorded parameters, use the entire data set from the 30-minute interval to evaluate Table 9 compliance. Determine the average electrical power consumption of the air conditioner or heat pump over the same 30-minute interval.

c. Calculate indoor-side total cooling capacity and sensible cooling capacity as specified in sections 7.3.3.1 and 7.3.3.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). To calculate capacity, use the averages of the measurements (*e.g.* inlet and outlet dry bulb and wet bulb temperatures measured at the psychrometers) that are continuously recorded for the same 30-minute interval used as described above to evaluate compliance with test tolerances. Do not adjust the parameters used in calculating capacity for the permitted variations in test conditions. Evaluate air enthalpies based on the measured barometric pressure. Use the values of the specific heat of air given in section 7.3.3.1 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) for calculation of the sensible cooling capacities. Assign the average total space cooling capacity, average sensible cooling capacity, and electrical power consumption over the 30-minute data collection interval to the variables $\dot{Q}_c^k(T)$, $\dot{Q}_{sc}^k(T)$ and $\dot{E}_c^k(T)$, respectively. For these three variables, replace the ''T'' with the nominal outdoor temperature at which the test was conducted. The superscript k is used only when testing multi-capacity units. Use the superscript k=2 to denote a test with the unit operating at high capacity or full speed, k=1 to denote low capacity or minimum speed, and k=v to denote the intermediate speed.

d. For mobile home and space-constrained ducted coil-only system tests, decrease $\dot{Q}_c^k(T)$ by

$$\frac{1385\ Btu/h}{1000\ scfm} * \overline{\dot{V}}_s$$

and increase $\dot{E}_c^k(T)$ by,

$$\frac{406\ W}{1000\ scfm} * \overline{\dot{V}}_s$$

where $\overline{\dot{V}}_s$ is the average measured indoor air volume rate expressed in units of cubic feet per minute of standard air (scfm).

For non-mobile, non-space-constrained home ducted coil-only system tests, decrease $\dot{Q}_c^k(T)$ by

$$\frac{1505\ Btu/h}{1000\ scfm} * \overline{\dot{V}}_s$$

and increase $\dot{E}_c^k(T)$ by,

$$\frac{441\ W}{1000\ scfm} * \overline{\dot{V}}_s$$

where $\overline{\dot{V}}_s$ is the average measured indoor air volume rate expressed in units of cubic feet per minute of standard air (scfm).

TABLE 9—TEST OPERATING AND TEST CONDITION TOLERANCES FOR SECTION 3.3 STEADY-STATE WET COIL COOLING MODE TESTS AND SECTION 3.4 DRY COIL COOLING MODE TESTS

	Test operating tolerance [1]	Test condition tolerance [1]
Indoor dry-bulb, °F		
Entering temperature	2.0	0.5
Leaving temperature	2.0	.....
Indoor wet-bulb, °F		
Entering temperature	1.0	[2] 0.3
Leaving temperature	[2] 1.0	.....
Outdoor dry-bulb, °F		
Entering temperature	2.0	0.5
Leaving temperature	[3] 2.0	.....
Outdoor wet-bulb, °F		
Entering temperature	1.0	[4] 0.3
Leaving temperature	[3] 1.0	.....
External resistance to airflow, inches of water	0.05	[5] 0.02
Electrical voltage, % of reading.	2.0	1.5
Nozzle pressure drop, % of reading.	2.0	.....

[1] See section 1.2 of this appendix, Definitions.
[2] Only applies during wet coil tests; does not apply during steady-state, dry coil cooling mode tests.
[3] Only applies when using the outdoor air enthalpy method.
[4] Only applies during wet coil cooling mode tests where the unit rejects condensate to the outdoor coil.
[5] Only applies when testing non-ducted units.

e. For air conditioners and heat pumps having a constant-air-volume-rate indoor blower, the five additional steps listed below are required if the average of the measured external static pressures exceeds the applicable sections 3.1.4 minimum (or target) external static pressure (ΔP_{min}) by 0.03 inches of water or more.

(1) Measure the average power consumption of the indoor blower motor ($\dot{E}_{fan,1}$) and record the corresponding external static pressure (ΔP_1) during or immediately following the 30-minute interval used for determining capacity.

(2) After completing the 30-minute interval and while maintaining the same test conditions, adjust the exhaust fan of the airflow measuring apparatus until the external static pressure increases to approximately $\Delta P_1 + (\Delta P_1 - \Delta P_{min})$.

(3) After re-establishing steady readings of the fan motor power and external static pressure, determine average values for the indoor blower power ($\dot{E}_{fan,2}$) and the external static pressure (ΔP_2) by making measurements over a 5-minute interval.

(4) Approximate the average power consumption of the indoor blower motor at ΔP_{min} using linear extrapolation:

$$\dot{E}_{fan,\min} = \frac{\dot{E}_{fan,2} - \dot{E}_{fan,1}}{\Delta P_2 - \Delta P_1}(\Delta P_{\min} - \Delta P_1) + \dot{E}_{fan,1}$$

(5) Increase the total space cooling capacity, $\dot{Q}_c^k(T)$, by the quantity ($\dot{E}_{fan,1} - \dot{E}_{fan,min}$), when expressed on a Btu/h basis. Decrease the total electrical power, $\dot{E}_c^k(T)$, by the same fan power difference, now expressed in watts.

3.4 Test Procedures for the Steady-State Dry-Coil Cooling-Mode Tests (the C, C_1, C_2, and G_1 Tests)

a. Except for the modifications noted in this section, conduct the steady-state dry coil cooling mode tests as specified in section 3.3 of this appendix for wet coil tests. Prior to recording data during the steady-state dry coil test, operate the unit at least one hour after achieving dry coil conditions. Drain the drain pan and plug the drain opening. Thereafter, the drain pan should remain completely dry.

b. Denote the resulting total space cooling capacity and electrical power derived from the test as $\dot{Q}_{ss,dry}$ and $\dot{E}_{ss,dry}$. With regard to a section 3.3 deviation, do not adjust $\dot{Q}_{ss,dry}$ for duct losses (*i.e.,* do not apply section 7.3.3.3 of ANSI/ASHRAE 37–2009). In preparing for the section 3.5 cyclic tests of this appendix, record the average indoor-side air volume rate, $\overline{\dot{V}}$, specific heat of the air, Cp,a

(expressed on dry air basis), specific volume of the air at the nozzles, v'_n, humidity ratio at the nozzles, W_n, and either pressure difference or velocity pressure for the flow nozzles. For units having a variable-speed indoor blower (that provides either a constant or variable air volume rate) that will or may be tested during the cyclic dry coil cooling mode test with the indoor blower turned off (see section 3.5 of this appendix), include the electrical power used by the indoor blower motor among the recorded parameters from the 30-minute test.

c. If the temperature sensors used to provide the primary measurement of the indoor-side dry bulb temperature difference during the steady-state dry-coil test and the subsequent cyclic dry-coil test are different, include measurements of the latter sensors among the regularly sampled data. Beginning at the start of the 30-minute data collection period, measure and compute the indoor-side air dry-bulb temperature difference using both sets of instrumentation, ΔT (Set SS) and ΔT (Set CYC), for each equally spaced data sample. If using a consistent data sampling rate that is less than 1 minute, calculate and record minutely averages for the two temperature differences. If using a consistent sampling rate of one minute or more, calculate and record the two temperature differences from each data sample. After having recorded the seventh (i=7) set of temperature differences, calculate the following ratio using the first seven sets of values:

$$F_{CD} = \frac{1}{7}\sum_{i-6}^{i}\frac{\Delta T(Set\ SS)}{\Delta T(Set\ CYC)}$$

Each time a subsequent set of temperature differences is recorded (if sampling more frequently than every 5 minutes), calculate F_{CD} using the most recent seven sets of values. Continue these calculations until the 30-minute period is completed or until a value for F_{CD} is calculated that falls outside the allowable range of 0.94–1.06. If the latter occurs, immediately suspend the test and identify the cause for the disparity in the two temperature difference measurements. Recalibration of one or both sets of instrumentation may be required. If all the values for F_{CD} are within the allowable range, save the final value of the ratio from the 30-minute test as F_{CD}*. If the temperature sensors used to provide the primary measurement of the indoor-side dry bulb temperature difference during the steady-state dry-coil test and the subsequent cyclic dry-coil test are the same, set F_{CD}*= 1.

3.5 Test Procedures for the Cyclic Dry-Coil Cooling-Mode Tests (the D, D_1, D_2, and I_1 Tests)

After completing the steady-state dry-coil test, remove the outdoor air enthalpy method test apparatus, if connected, and begin manual OFF/ON cycling of the unit's compressor. The test set-up should otherwise be identical to the set-up used during the steady-state dry coil test. When testing heat pumps, leave the reversing valve during the compressor OFF cycles in the same position as used for the compressor ON cycles, unless automatically changed by the controls of the unit. For units having a variable-speed indoor blower, the manufacturer has the option of electing at the outset whether to conduct the cyclic test with the indoor blower enabled or disabled. Always revert to testing with the indoor blower disabled if cyclic testing with the fan enabled is unsuccessful.

a. For all cyclic tests, the measured capacity must be adjusted for the thermal mass stored in devices and connections located between measured points. Follow the procedure outlined in section 7.4.3.4.5 of ASHRAE 116–2010 (incorporated by reference, see § 430.3) to ensure any required measurements are taken.

b. For units having a single-speed or two-capacity compressor, cycle the compressor OFF for 24 minutes and then ON for 6 minutes ($\Delta\tau_{cyc,dry}$ = 0.5 hours). For units having a variable-speed compressor, cycle the compressor OFF for 48 minutes and then ON for 12 minutes ($\Delta\tau_{cyc,dry}$ = 1.0 hours). Repeat the OFF/ON compressor cycling pattern until the test is completed. Allow the controls of the unit to regulate cycling of the outdoor fan. If an upturned duct is used, measure the dry-bulb temperature at the inlet of the device at least once every minute and ensure that its test operating tolerance is within 1.0 °F for each compressor OFF period.

c. Sections 3.5.1 and 3.5.2 of this appendix specify airflow requirements through the indoor coil of ducted and non-ducted indoor units, respectively. In all cases, use the exhaust fan of the airflow measuring apparatus (covered under section 2.6 of this appendix) along with the indoor blower of the unit, if installed and operating, to approximate a step response in the indoor coil airflow. Regulate the exhaust fan to quickly obtain and then maintain the flow nozzle static pressure difference or velocity pressure at the same value as was measured during the steady-state dry coil test. The pressure difference or velocity pressure should be within 2 percent of the value from the steady-state dry coil test within 15 seconds after airflow initiation. For units having a variable-speed indoor blower that ramps when cycling on and/or off, use the exhaust fan of the airflow measuring apparatus to impose a step response that begins at the initiation of ramp up and ends at the termination of ramp down.

d. For units having a variable-speed indoor blower, conduct the cyclic dry coil test using the pull-thru approach described below if any of the following occur when testing with the fan operating:

(1) The test unit automatically cycles off;

(2) Its blower motor reverses; or

(3) The unit operates for more than 30 seconds at an external static pressure that is 0.1 inches of water or more higher than the value measured during the prior steady-state test.

For the pull-thru approach, disable the indoor blower and use the exhaust fan of the airflow measuring apparatus to generate the specified flow nozzles static pressure difference or velocity pressure. If the exhaust fan cannot deliver the required pressure difference because of resistance created by the unpowered indoor blower, temporarily remove the indoor blower.

e. Conduct three complete compressor OFF/ON cycles with the test tolerances given in Table 10 satisfied. Calculate the degradation coefficient C_D for each complete cycle. If all three C_D values are within 0.02 of the average C_D then stability has been achieved, use the highest C_D value of these three. If stability has not been achieved, conduct additional cycles, up to a maximum of eight cycles, until stability has been achieved between three consecutive cycles. Once stability has been achieved, use the highest C_D value of the three consecutive cycles that establish stability. If stability has not been achieved after eight cycles, use the highest C_D from cycle one through cycle eight, or the default C_D, whichever is lower.

f. With regard to the Table 10 parameters, continuously record the dry-bulb temperature of the air entering the indoor and outdoor coils during periods when air flows through the respective coils. Sample the water vapor content of the indoor coil inlet air at least every 2 minutes during periods when air flows through the coil. Record external static pressure and the air volume rate indicator (either nozzle pressure difference or velocity pressure) at least every minute during the interval that air flows through the indoor coil. (These regular measurements of the airflow rate indicator are in addition to the required measurement at 15 seconds after flow initiation.) Sample the electrical voltage at least every 2 minutes beginning 30 seconds after compressor start-up. Continue until the compressor, the outdoor fan, and the indoor blower (if it is installed and operating) cycle off.

g. For ducted units, continuously record the dry-bulb temperature of the air entering (as noted above) and leaving the indoor coil. Or if using a thermopile, continuously record the difference between these two temperatures during the interval that air flows through the indoor coil. For non-ducted units, make the same dry-bulb temperature measurements beginning when the compressor cycles on and ending when indoor coil airflow ceases.

h. Integrate the electrical power over complete cycles of length $\Delta\tau_{cyc,dry}$. For ducted blower coil systems tested with the unit's indoor blower operating for the cycling test, integrate electrical power from indoor blower OFF to indoor blower OFF. For all other ducted units and for non-ducted units, integrate electrical power from compressor OFF to compressor OFF. (Some cyclic tests will use the same data collection intervals to determine the electrical energy and the total space cooling. For other units, terminate data collection used to determine the electrical energy before terminating data collection used to determine total space cooling.)

TABLE 10—TEST OPERATING AND TEST CONDITION TOLERANCES FOR CYCLIC DRY COIL COOLING MODE TESTS

	Test operating tolerance [1]	Test condition tolerance [1]
Indoor entering dry-bulb temperature,[2] °F	2.0	0.5
Indoor entering wet-bulb temperature, °F		([3])
Outdoor entering dry-bulb temperature,[2] °F	2.0	0.5
External resistance to airflow,[2] inches of water	0.05	
Airflow nozzle pressure difference or velocity pressure,[2]% of reading	2.0	[4] 2.0
Electrical voltage,[5] % of reading	2.0	1.5

[1] See section 1.2 of this appendix, Definitions.
[2] Applies during the interval that air flows through the indoor (outdoor) coil except for the first 30 seconds after flow initiation. For units having a variable-speed indoor blower that ramps, the tolerances listed for the external resistance to airflow apply from 30 seconds after achieving full speed until ramp down begins.
[3] Shall at no time exceed a wet-bulb temperature that results in condensate forming on the indoor coil.
[4] The test condition must be the average nozzle pressure difference or velocity pressure measured during the steady-state dry coil test.
[5] Applies during the interval when at least one of the following—the compressor, the outdoor fan, or, if applicable, the indoor blower—are operating except for the first 30 seconds after compressor start-up.

If the Table 10 tolerances are satisfied over the complete cycle, record the measured electrical energy consumption as $e_{cyc,dry}$ and express it in units of watt-hours. Calculate the total space cooling delivered, $q_{cyc,dry}$, in units of Btu using,

$$q_{cyc,dry} = \frac{60*\overline{\dot{V}}*C_{p,a}*\Gamma}{[v_n'*(1+W_n)]} = \frac{60*\overline{\dot{V}}*C_{p,a}*\Gamma}{v_n} \quad \text{and} \quad \Gamma = F_{CD}^{*}\int_{\tau_1}^{\tau_2}[T_{a1}(\tau) - T_{a2}(\tau)]\delta\tau,\ hr*°\text{F}$$

Where,

$\overline{\dot{V}}$, $C_{p,a}$, v_n' (or v_n), W_n, and $F_{CD}*$ are the values recorded during the section 3.4 dry coil steady-state test and

$T_{a1}(\tau)$ = dry bulb temperature of the air entering the indoor coil at time τ, °F.

$T_{a2}(\tau)$ = dry bulb temperature of the air leaving the indoor coil at time τ, °F.

τ_1 = for ducted units, the elapsed time when airflow is initiated through the indoor coil; for non-ducted units, the elapsed time when the compressor is cycled on, hr.

τ_2 = the elapsed time when indoor coil airflow ceases, hr.

Adjust the total space cooling delivered, $q_{cyc,dry}$, according to calculation method outlined in section 7.4.3.4.5 of ASHRAE 116–2010 (incorporated by reference, see § 430.3).

3.5.1 Procedures When Testing Ducted Systems

The automatic controls that are installed in the test unit must govern the OFF/ON cycling of the air moving equipment on the indoor side (exhaust fan of the airflow measuring apparatus and the indoor blower of the test unit). For ducted coil-only systems rated based on using a fan time-delay relay, control the indoor coil airflow according to the OFF delay listed by the manufacturer in the certification report. For ducted units having a variable-speed indoor blower that has been disabled (and possibly removed), start and stop the indoor airflow at the same instances as if the fan were enabled. For all other ducted coil-only systems, cycle the indoor coil airflow in unison with the cycling of the compressor. If air damper boxes are used, close them on the inlet and outlet side during the OFF period. Airflow through the indoor coil should stop within 3 seconds after the automatic controls of the test unit (act to) de-energize the indoor blower. For mobile home and space-constrained ducted coil-only systems increase $e_{cyc,dry}$ by the quantity,

$$\text{Equation 3.5-2.} \quad \frac{406\ W}{1000\ scfm} * \overline{\dot{V}}_s * [\tau_2 - \tau_1]$$

and decrease $q_{cyc,dry}$ by,

$$\text{Equation 3.5-3.} \quad \frac{1385\ Btu/h}{1000\ scfm} * \overline{\dot{V}}_s * [\tau_2 - \tau_1]$$

where $\overline{\dot{V}}_s$ is the average indoor air volume rate from the section 3.4 dry coil steady-state test and is expressed in units of cubic feet per minute of standard air (scfm). For ducted non-mobile, non-space-constrained home coil-only units increase $e_{cyc,dry}$ by the quantity,

$$\text{Equation 3.5-2.} \quad \frac{441\ W}{1000\ scfm} * \overline{\dot{V}}_s * [\tau_2 - \tau_1]$$

and decrease $q_{cyc,dry}$ by,

$$\text{Equation 3.5-3.} \quad \frac{1505\ Btu/h}{1000\ scfm} * \overline{\dot{V}}_s * [\tau_2 - \tau_1]$$

where $\overline{V}_s$ is the average indoor air volume rate from the section 3.4 dry coil steady-state test and is expressed in units of cubic feet per minute of standard air (scfm). For units having a variable-speed indoor blower that is disabled during the cyclic test, increase $e_{cyc,dry}$ and decrease $q_{cyc,dry}$ based on:

a. The product of $[\tau_2 - \tau_1]$ and the indoor blower power measured during or following the dry coil steady-state test; or,

b. The following algorithm if the indoor blower ramps its speed when cycling.

(1) Measure the electrical power consumed by the variable-speed indoor blower at a minimum of three operating conditions: at the speed/air volume rate/external static pressure that was measured during the steady-state test, at operating conditions associated with the midpoint of the ramp-up interval, and at conditions associated with the midpoint of the ramp-down interval. For these measurements, the tolerances on the airflow volume or the external static pressure are the same as required for the section 3.4 steady-state test.

(2) For each case, determine the fan power from measurements made over a minimum of 5 minutes.

(3) Approximate the electrical energy consumption of the indoor blower if it had operated during the cyclic test using all three power measurements. Assume a linear profile during the ramp intervals. The manufacturer must provide the durations of the ramp-up and ramp-down intervals. If the test setup instructions included with the unit by the manufacturer specifies a ramp interval that exceeds 45 seconds, use a 45-second ramp interval nonetheless when estimating the fan energy.

3.5.2 Procedures When Testing Non-Ducted Indoor Units

Do not use airflow prevention devices when conducting cyclic tests on non-ducted indoor units. Until the last OFF/ON compressor cycle, airflow through the indoor coil must cycle off and on in unison with the compressor. For the last OFF/ON compressor cycle—the one used to determine $e_{cyc,dry}$ and $q_{cyc,dry}$—use the exhaust fan of the airflow measuring apparatus and the indoor blower of the test unit to have indoor airflow start 3 minutes prior to compressor cut-on and end three minutes after compressor cutoff. Subtract the electrical energy used by the indoor blower during the 3 minutes prior to compressor cut-on from the integrated electrical energy, $e_{cyc,dry}$. Add the electrical energy used by the indoor blower during the 3 minutes after compressor cutoff to the integrated cooling capacity, $q_{cyc,dry}$. For the case where the non-ducted indoor unit uses a variable-speed indoor blower which is disabled during the cyclic test, correct $e_{cyc,dry}$ and $q_{cyc,dry}$ using the same approach as prescribed in section 3.5.1 of this appendix for ducted units having a disabled variable-speed indoor blower.

3.5.3 Cooling-Mode Cyclic-Degradation Coefficient Calculation

Use the two dry-coil tests to determine the cooling-mode cyclic-degradation coefficient, C_D^c. Append ''(k=2)'' to the coefficient if it corresponds to a two-capacity unit cycling at high capacity. If the two optional tests are conducted but yield a tested C_D^c that exceeds the default C_D^c or if the two optional tests are not conducted, assign C_D^c the default value of 0.25 for variable-speed compressor systems and outdoor units with no match, and 0.20 for all other systems. The default value for two-capacity units cycling at high capacity, however, is the low-capacity coefficient, *i.e.,* $C_D^c(k=2) = C_D^c$. Evaluate C_D^c using the above results and those from the section 3.4 dry-coil steady-state test.

$$C_D^c = \frac{1 - \frac{EER_{cyc,dry}}{EER_{ss,dry}}}{1 - CLF}$$

Where:

$$EER_{cyc,dry} = \frac{q_{cyc,dry}}{e_{cyc,dry}}$$

the average energy efficiency ratio during the cyclic dry coil cooling mode test, Btu/W·h

$$EER_{ss,dry} = \frac{\dot{Q}_{ss,dry}}{\dot{E}_{ss,dry}}$$

the average energy efficiency ratio during the steady-state dry coil cooling mode test, Btu/W·h

$$CLF = \frac{q_{cyc,dry}}{Q_{ss,dry} * \Delta\tau_{cyc,dry}}$$

the cooling load factor dimensionless

Round the calculated value for C_D^c to the nearest 0.01. If C_D^c is negative, then set it equal to zero.

3.6 Heating Mode Tests for Different Types of Heat Pumps, Including Heating-Only Heat Pumps

3.6.1 Tests for a Heat Pump Having a Single-Speed Compressor and Fixed Heating Air Volume Rate

This set of tests is for single-speed-compressor heat pumps that do not have a heating minimum air volume rate or a heating intermediate air volume rate that is different than the heating full load air volume rate. Conducting a very low temperature test (H4) is optional. Conduct the optional high temperature cyclic (H1C) test to determine the heating mode cyclic-degradation coefficient, C_D^h. If this optional test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. Test conditions for the five tests are specified in Table 11 of this section.

TABLE 11—HEATING MODE TEST CONDITIONS FOR UNITS HAVING A SINGLE-SPEED COMPRESSOR AND A FIXED-SPEED INDOOR BLOWER, A CONSTANT AIR VOLUME RATE INDOOR BLOWER, OR COIL-ONLY

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
H1 Test (required, steady)	70	60(max)	47	43	Heating Full-load.[1]
H1C Test (optional, cyclic)	70	60(max)	47	43	([2]).
H2 Test (required)	70	60(max)	35	33	Heating Full-load.[1]
H3 Test (required, steady)	70	60(max)	17	15	Heating Full-load.[1]
H4 Test (optional, steady)	70	60(max)	5	3(max)	Heating Full-load.[1]

[1] Defined in section 3.1.4.4 of this appendix.

[2] Maintain the airflow nozzles static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the H1 Test.

3.6.2 Tests for a Heat Pump Having a Single-Speed Compressor and a Single Indoor Unit Having Either (1) a Variable-Speed, Variable-Air-Rate Indoor Blower Whose Capacity Modulation Correlates With Outdoor Dry Bulb Temperature or (2) Multiple Indoor Blowers

Conduct five tests: Two high temperature tests ($H1_2$ and $H1_1$), one frost accumulation test ($H2_2$), and two low temperature tests ($H3_2$ and $H3_1$). Conducting an additional frost accumulation test ($H2_1$) and a very low temperature test ($H4_2$) is optional. Conduct the optional high temperature cyclic ($H1C_1$) test to determine the heating mode cyclic-degradation coefficient, C_D^h. If this optional test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. Test conditions for the seven tests are specified in Table 12. If the optional $H2_1$ test is not performed, use the following equations to approximate the capacity and electrical power of the heat pump at the $H2_1$ test conditions:

$$\dot{Q}_h^{k=1}(35) = QR_h^{k=2}(35) * \left\{\dot{Q}_h^{k=1}(17) + 0.6 * \left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=1}(17)\right]\right\}$$

$$\dot{E}_h^{k=1}(35) = PR_h^{k=2}(35) * \left\{\dot{E}_h^{k=1}(17) + 0.6 * \left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=1}(17)\right]\right\}$$

where,

$$\dot{Q}R_h^{k=2}(35) = \frac{\dot{Q}_h^{k=2}(35)}{\dot{Q}^{k=2}(17) + 0.6 * [\dot{Q}_h^{k=2}(47) - \dot{Q}_h^{k=2}(17)]}$$

$$PR_h^{k=2}(35) = \frac{\dot{E}_h^{k=2}(35)}{\dot{E}_h^{k=2}(17) + 0.6 * \left[\dot{E}_h^{k=2}(47) - \dot{E}_h^{k=2}(17)\right]}$$

The quantities $\dot{Q}_h^{k=2}(47)$, $\dot{E}_h^{k=2}(47)$, $\dot{Q}_h^{k=1}(47)$, and $\dot{E}_h^{k=1}(47)$ are determined from the $H1_2$ and $H1_1$ tests and evaluated as specified in section 3.7 of this appendix; the quantities $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ are determined from the $H2_2$ test and evaluated as specified in section 3.9 of this appendix; and the quantities $\dot{Q}_h^{k=2}(17)$, $\dot{E}_h^{k=2}(17)$, $\dot{Q}_h^{k=1}(17)$, and $\dot{E}_h^{k=1}(17)$, are determined from the $H3_2$ and $H3_1$ tests and evaluated as specified in section 3.10 of this appendix.

TABLE 12—HEATING MODE TEST CONDITIONS FOR UNITS WITH A SINGLE-SPEED COMPRESSOR THAT MEET THE SECTION 3.6.2 INDOOR UNIT REQUIREMENTS

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb	
$H1_2$ Test (required, steady)	70	$60^{(max)}$	47	43	Heating Full-load.[1]
$H1_1$ Test (required, steady)	70	$60^{(max)}$	47	43	Heating Minimum.[2]
$H1C_1$ Test (optional, cyclic)	70	$60^{(max)}$	47	43	([3]).
$H2_2$ Test (required)	70	$60^{(max)}$	35	33	Heating Full-load.[1]
$H2_1$ Test (optional)	70	$60^{(max)}$	35	33	Heating Minimum.[2]
$H3_2$ Test (required, steady)	70	$60^{(max)}$	17	15	Heating Full-load.[1]
$H3_1$ Test (required, steady)	70	$60^{(max)}$	17	15	Heating Minimum.[2]
$H4_2$ Test (optional, steady)	70	$60^{(max)}$	5	$3^{(max)}$	Heating Full-load.[1]

[1] Defined in section 3.1.4.4 of this appendix.
[2] Defined in section 3.1.4.5 of this appendix.
[3] Maintain the airflow nozzles static pressure difference or velocity pressure during the ON period at the same pressure difference or velocity pressure as measured during the $H1_1$ test.

3.6.3 Tests for a Heat Pump Having a Two-Capacity Compressor (see Section 1.2 of This Appendix, Definitions), Including Two-Capacity, Northern Heat Pumps (see Section 1.2 of This Appendix, Definitions)

a. Conduct one maximum temperature test ($H0_1$), two high temperature tests ($H1_2$ and $H1_1$), one frost accumulation test ($H2_2$), and one low temperature test ($H3_2$). Conducting a very low temperature test ($H4_2$) is optional. Conduct an additional frost accumulation test ($H2_1$) and low temperature test ($H3_1$) if both of the following conditions exist:

(1) Knowledge of the heat pump's capacity and electrical power at low compressor capacity for outdoor temperatures of 37 °F and less is needed to complete the section 4.2.3 of this appendix seasonal performance calculations; and

(2) The heat pump's controls allow low-capacity operation at outdoor temperatures of 37 °F and less.

If the two conditions in a.(1) and a.(2) of this section are met, an alternative to conducting the $H2_1$ frost accumulation is to use the following equations to approximate the capacity and electrical power:

$$\dot{Q}_h^{k=1}(35) = 0.90 * \left\{\dot{Q}_h^{k=1}(17) + 0.6 * \left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=1}(17)\right]\right\}$$

$$\dot{E}_h^{k=1}(35) = 0.985 * \left\{\dot{E}_h^{k=1}(17) + 0.6 * \left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=1}(17)\right]\right\}$$

Determine the quantities $\dot{Q}_h^{k=1}$ (47) and $\dot{E}_h^{k=1}$ (47) from the $H1_1$ test and evaluate them according to section 3.7 of this appendix. Determine the quantities $\dot{Q}_h^{k=1}$ (17) and $\dot{E}_h^{k=1}$ (17) from the $H3_1$ test and evaluate them according to section 3.10 of this appendix.

b. Conduct the optional high temperature cyclic test ($H1C_1$) to determine the heating mode cyclic-degradation coefficient, C_D^h. If this optional test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. If a two-capacity heat pump locks out low capacity operation at lower outdoor temperatures, conduct the high temperature cyclic test ($H1C_2$) to determine the high-capacity heating mode cyclic-degradation coefficient, C_D^h (k=2). If this optional test at high capacity is conducted but yields a tested C_D^h (k = 2) that exceeds the default C_D^h (k = 2) or if the optional test is not conducted, assign C_D^h the default value. The default C_D^h (k=2) is the same value as determined or assigned for the low-capacity cyclic-degradation coefficient,

C_D^h [or equivalently, C_D^h (k=1)]. Table 13 specifies test conditions for these nine tests.

TABLE 13—HEATING MODE TEST CONDITIONS FOR UNITS HAVING A TWO-CAPACITY COMPRESSOR

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Compressor capacity	Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
$H0_1$ Test (required, steady)	70	60 (max)	62	56.5	Low	Heating Minimum.[1]
$H1_2$ Test (required, steady)	70	60 (max)	47	43	High	Heating Full-Load.[2]
$H1C_2$ Test (optional[7], cyclic)	70	60 (max)	47	43	High	([3])
$H1_1$ Test (required)	70	60 (max)	47	43	Low	Heating Minimum.[1]
$H1C_1$ Test (optional, cyclic)	70	60 (max)	47	43	Low	([4])
$H2_2$ Test (required)	70	60 (max)	35	33	High	Heating Full-Load.[2]
$H2_1$ Test[5 6] (required)	70	60 (max)	35	33	Low	Heating Minimum.[1]
$H3_2$ Test (required, steady)	70	60 (max)	17	15	High	Heating Full-Load.[2]
$H3_1$ Test[5] (required, steady)	70	60 (max)	17	15	Low	Heating Minimum.[1]
$H4_2$ Test (Optional, steady)	70	60 (max)	5	3 (max)	High	Heating Full-Load.[2]

[1] Defined in section 3.1.4.5 of this appendix.
[2] Defined in section 3.1.4.4 of this appendix.
[3] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H1_2$ test.
[4] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H1_1$ test.
[5] Required only if the heat pump's performance when operating at low compressor capacity and outdoor temperatures less than 37 °F is needed to complete the section 4.2.3 *HSPF2* calculations.
[6] If table note #5 applies, the section 3.6.3 equations for $\dot{Q}_h^{k=1}$ (35) and $\dot{E}_h^{k=1}$ (17) may be used in lieu of conducting the $H2_1$ test.
[7] Required only if the heat pump locks out low capacity operation at lower outdoor temperatures.

3.6.4 Tests for a Heat Pump Having a Variable-Speed Compressor

a. Conduct one maximum temperature test ($H0_1$), two high temperature tests ($H1_N$ and $H1_1$), one frost accumulation test ($H2_V$), and one low temperature test ($H3_2$). Conducting one or more of the following tests is optional: An additional high temperature test ($H1_2$), an additional frost accumulation test ($H2_2$), and a very low temperature test ($H4_2$). Conduct the optional high temperature cyclic ($H1C_1$) test to determine the heating mode cyclic-degradation coefficient, C_D^h. If this optional test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. Test conditions for the nine tests are specified in Table 14. The compressor shall operate at the same heating full speed, measured by RPM or power input frequency (Hz), as the maximum speed at which the system controls would operate the compressor in normal operation in 17 °F ambient temperature, for the $H1_2$, $H2_2$ and $H3_2$ Tests. The compressor shall operate for the $H1_N$ test at the maximum speed at which the system controls would operate the compressor in normal operation in 47 °F ambient temperature. The compressor shall operate at the same heating minimum speed, measured by RPM or power input frequency (Hz), for the $H0_1$, $H1C_1$, and $H1_1$ Tests. Determine the heating intermediate compressor speed cited in Table 14 using the heating mode full and minimum compressors speeds and:

$$\text{Heating intermediate speed} = \text{Heating minimum speed} + \frac{\text{Heating full speed} - \text{Heating minimum speed}}{3}$$

Where a tolerance of plus 5 percent or the next higher inverter frequency step from that calculated is allowed.

b. If one of the high temperature tests ($H1_2$ or $H1_N$) is conducted using the same compressor speed (RPM or power input frequency) as the $H3_2$ test, set the 47 °F capacity and power input values used for calculation of HSPF2 equal to the measured values for that test:

$$\dot{Q}_{hcalc}^{k=2}(47) = \dot{Q}_h^{k=2}(47);\ \dot{E}_{hcalc}^{k=2}(47) = \dot{E}_h^{k=2}(47)$$

Where:

$\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ are the capacity and power input representing full-speed operation at 47 °F for the HSPF2 calculations,

$\dot{Q}_h^{k=2}(47)$ is the capacity measured in the high temperature test ($H1_2$ or $H1_N$) which used the same compressor speed as the $H3_2$ test, and

$\dot{E}_h^{k=2}(47)$ is the power input measured in the high temperature test ($H1_2$ or $H1_N$) which used the same compressor speed as the $H3_2$ test.

Evaluate the quantities $\dot{Q}_h^{k=2}(47)$ and from $\dot{E}_h^{k=2}(47)$ according to section 3.7.

Otherwise (if no high temperature test is conducted using the same speed (RPM or power input frequency) as the $H3_2$ test), calculate the 47 °F capacity and power input values used for calculation of HSPF2 as follows:

$$\dot{Q}_{hcalc}^{k=2}(47) = \dot{Q}_{h}^{k=2}(17) * (1 + 30^{\circ}F * CSF);$$

$$\dot{E}_{hcalc}^{k=2}(47) = \dot{E}_{h}^{k=2}(17) * (1 + 30^{\circ}F * PSF)$$

Where:

$\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ are the capacity and power input representing full-speed operation at 47 °F for the HSPF2 calculations,

$\dot{Q}_{h}^{k=2}(17)$ is the capacity measured in the $H3_2$ test,

$\dot{E}_{h}^{k=2}(17)$ is the power input measured in the $H3_2$ test,

CSF is the capacity slope factor, equal to 0.0204/°F for split systems and 0.0262/°F for single-package systems, and

PSF is the Power Slope Factor, equal to 0.00455/°F.

c. If the $H2_2$ test is not done, use the following equations to approximate the capacity and electrical power at the $H2_2$ test conditions:

$$\dot{Q}_{h}^{k=2}(35) = 0.90 * \left\{\dot{Q}_{h}^{k=2}(17) + 0.6 * \left[\dot{Q}_{hcalc}^{k=2}(47) - \dot{Q}_{h}^{k=2}(17)\right]\right\}$$

$$\dot{E}_{h}^{k=2}(35) = 0.985 * \left\{\dot{E}_{h}^{k=2}(17) + 0.6 * \left[\dot{E}_{hcalc}^{k=2}(47) - \dot{E}_{h}^{k=2}(17)\right]\right\}$$

Where:

$\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ are the capacity and power input representing full-speed operation at 47 °F for the HSPF2 calculations, calculated as described in section b above.

$\dot{Q}_{h}^{k=2}(17)$ and $\dot{E}_{h}^{k=2}(17)$ are the capacity and power input measured in the $H3_2$ test.

d. Determine the quantities $\dot{Q}_{h}^{k=2}(17)$ and $\dot{E}_{h}^{k=2}(17)$ from the $H3_2$ test, determine the quantities $Q_{h}^{k=2}(5)$ and $E_{h}^{k=2}(5)$ from the $H4_2$ test, and evaluate all four according to section 3.10.

TABLE 14—HEATING MODE TEST CONDITIONS FOR UNITS HAVING A VARIABLE-SPEED COMPRESSOR

Test description	Air entering indoor unit temperature (°F)		Air entering outdoor unit temperature (°F)		Compressor speed	Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
$H0_1$ test (required, steady).	70	60 (max)	62	56.5	Heating Minimum	Heating Minimum.[1]
$H1_2$ test (optional, steady).	70	60 (max)	47	43	Heating Full[4]	Heating Full-Load.[3]
$H1_1$ test (required, steady).	70	60(max)	47	43	Heating Minimum	Heating Minimum.[1]
$H1_N$ test (required, steady).	70	60(max)	47	43	Heating Full[5]	Heating Full-Load.[3]
$H1C_1$ test (optional, cyclic).	70	60(max)	47	43	Heating Minimum	([2])
$H2_2$ test (optional).	70	60 (max)	35	33	Heating Full[4]	Heating Full-Load.[3]
$H2_V$ test (required).	70	60 (max)	35	33	Heating Intermediate	Heating Intermediate.[6]
$H3_2$ test (required, steady).	70	60 (max)	17	15	Heating Full[4]	Heating Full-Load.[3]
$H4_2$ test (optional, steady).	70	60 (max)	5	3 (max)	Heating Full	Heating Full-Load.[3]

[1] Defined in section 3.1.4.5 of this appendix.
[2] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during an ON period at the same pressure or velocity as measured during the $H1_1$ test.
[3] Defined in section 3.1.4.4 of this appendix.
[4] Maximum speed that the system controls would operate the compressor in normal operation in 17 °F ambient temperature. The $H1_2$ test is not needed if the $H1_N$ test uses this same compressor speed.
[5] Maximum speed that the system controls would operate the compressor in normal operation in 47 °F ambient temperature.
[6] Defined in section 3.1.4.6 of this appendix.

e. For multiple-split heat pumps (only), the following procedures supersede the above requirements. For all Table 14 tests specified for a minimum compressor speed, turn off at least one indoor unit. The manufacturer shall designate the particular indoor unit(s) that is turned off. The manufacturer must also specify the compressor speed used for the Table 14 $H2_V$ test, a heating mode intermediate compressor speed that falls within ¼ and ¾ of the difference between the full and minimum heating mode speeds. The manufacturer should prescribe an intermediate speed that is expected to yield the highest COP for the given $H2_V$ test conditions and bracketed compressor speed range. The manufacturer can designate that one or more specific indoor units are turned off for the $H2_V$ test.

3.6.5 Additional Test for a Heat Pump Having a Heat Comfort Controller

Test any heat pump that has a heat comfort controller (see section 1.2 of this appendix, Definitions) according to section 3.6.1, 3.6.2, or 3.6.3, whichever applies, with the heat

comfort controller disabled. Additionally, conduct the abbreviated test described in section 3.1.9 of this appendix with the heat comfort controller active to determine the system's maximum supply air temperature. (**Note:** heat pumps having a variable-speed compressor and a heat comfort controller are not covered in the test procedure at this time.)

3.6.6 Heating Mode Tests for Northern Heat Pumps with Triple-Capacity Compressors

Test triple-capacity, northern heat pumps for the heating mode as follows:

a. Conduct one maximum temperature test ($H0_1$), two high temperature tests ($H1_2$ and $H1_1$), one frost accumulation test ($H2_2$), two low temperature tests ($H3_2$, $H3_3$), and one very low temperature test ($H4_3$). Conduct an additional frost accumulation test ($H2_1$) and low temperature test ($H3_1$) if both of the following conditions exist: (1) Knowledge of the heat pump's capacity and electrical power at low compressor capacity for outdoor temperatures of 37 °F and less is needed to complete the section 4.2.6 seasonal performance calculations; and (2) the heat pump's controls allow low capacity operation at outdoor temperatures of 37 °F and less. If the above two conditions are met, an alternative to conducting the $H2_1$ frost accumulation test to determine $\dot{Q}_h^{k=1}(35)$ and $E_h^{k=1}(35)$ is to use the following equations to approximate this capacity and electrical power:

$$\dot{Q}_h^{k=1}(35) = 0.90 * \left\{\dot{Q}_h^{k=1}(17) + 0.6 * \left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=1}(17)\right]\right\}$$

$$\dot{E}_h^{k=1}(35) = 0.985 * \left\{\dot{E}_h^{k=1}(17) + 0.6 * \left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=1}(17)\right]\right\}$$

In evaluating the above equations, determine the quantities $Q_h^{k=1}(47)$ from the $H1_1$ test and evaluate them according to section 3.7 of this appendix. Determine the quantities $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ from the $H3_1$ test and evaluate them according to section 3.10 of this appendix. Use the paired values of $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ derived from conducting the $H2_1$ frost accumulation test and evaluated as specified in section 3.9.1 of this appendix or use the paired values calculated using the above default equations, whichever contribute to a higher Region IV HSPF2 based on the DHRmin.

b. Conducting a frost accumulation test ($H2_3$) with the heat pump operating at its booster capacity is optional. If this optional test is not conducted, determine $\dot{Q}_h^{k=3}(35)$ and $\dot{E}_h^{k=3}(35)$ using the following equations to approximate this capacity and electrical power:

$$\dot{Q}_h^{k=3}(35) = QR_h^{k=2}(35) * \left\{\dot{Q}_h^{k=3}(17) + 1.20 * \left[\dot{Q}_h^{k=3}(17) - \dot{Q}_h^{k=3}(5)\right]\right\}$$

$$\dot{E}_h^{k=3}(35) = PR_h^{k=2}(35) * \left\{\dot{E}_h^{k=3}(17) + 1.20 * \left[\dot{E}_h^{k=3}(17) - \dot{E}_h^{k=3}(5)\right]\right\}$$

Where:

$$QR_h^{k=2}(35) = \frac{\dot{Q}_h^{k=2}(35)}{\dot{Q}_h^{k=2}(17) + 0.6 * \left[\dot{Q}_h^{k=2}(47) - \dot{Q}_h^{k=2}(17)\right]}$$

$$PR_h^{k=2}(35) = \frac{\dot{E}_h^{k=2}(35)}{\dot{E}_h^{k=2}(17) + 0.6 * \left[\dot{E}_h^{k=2}(47) - \dot{E}_h^{k=2}(17)\right]}$$

Determine the quantities $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test and evaluate them according to section 3.7 of this appendix. Determine the quantities $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$ test and evaluate them according to section 3.9.1 of this appendix. Determine the quantities $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test, determine the quantities $\dot{Q}_h^{k=3}(17)$ and $\dot{E}_h^{k=3}(17)$ from the $H3_3$ test, and determine the quantities $\dot{Q}_h^{k=3}(5)$ and $\dot{E}_h^{k=3}(5)$ from the $H4_3$ test. Evaluate all six quantities according to section 3.10 of this appendix. Use the paired values of $\dot{Q}_h^{k=3}(35)$ and $\dot{E}_h^{k=3}(35)$ derived from conducting the $H2_3$ frost accumulation test and calculated as specified in section 3.9.1 of this appendix or use the paired values calculated using the above default equations, whichever contribute to a higher Region IV HSPF2 based on the DHRmin.

c. Conduct the optional high temperature cyclic test ($H1C_1$) to determine the heating mode cyclic-degradation coefficient, C_D^h. A default value for C_D^h of 0.25 may be used in lieu of conducting the cyclic. If a triple-capacity heat pump locks out low capacity operation at lower outdoor temperatures, conduct the high temperature cyclic test ($H1C_2$) to determine the high capacity heating mode cyclic-degradation coefficient, C_D^h (k=2). The default C_D^h (k=2) is the same value as determined or assigned for the low-capacity cyclic-degradation coefficient, C_D^h [or equivalently, C_D^h (k=1)]. Finally, if a triple-capacity heat pump locks out both low and high capacity operation at the lowest outdoor temperatures, conduct the low temperature cyclic test ($H3C_3$) to determine the booster-capacity heating mode cyclic-degradation coefficient, C_D^h (k=3). The default C_D^h (k=3) is the same value as determined or assigned for the high capacity cyclic-degradation coefficient, C_D^h [or equivalently, C_D^h (k=2)]. Table 15 specifies test conditions for all 13 tests.

TABLE 15—HEATING MODE TEST CONDITIONS FOR UNITS WITH A TRIPLE-CAPACITY COMPRESSOR

Test description	Air entering indoor unit temperature °F		Air entering outdoor unit temperature °F		Compressor capacity	Heating air volume rate
	Dry bulb	Wet bulb	Dry bulb	Wet bulb		
$H0_1$ Test (required, steady)	70	60(max)	62	56.5	Low	Heating Minimum [1]
$H1_2$ Test (required, steady)	70	60(max)	47	43	High	Heating Full-Load [2]
$H1C_2$ Test (optional,[8] cyclic)	70	60(max)	47	43	High	([3])
$H1_1$ Test (required)	70	60(max)	47	43	Low	Heating Minimum [1]
$H1C_1$ Test (optional, cyclic)	70	60(max)	47	43	Low	([4])
$H2_3$ Test (optional, steady)	70	60(max)	35	33	Booster	Heating Full-Load [2]
$H2_2$ Test (required)	70	60(max)	35	33	High	Heating Full-Load [2]
$H2_1$ Test (required)	70	60(max)	35	33	Low	Heating Minimum [1]
$H3_3$ Test (required, steady)	70	60(max)	17	15	Booster	Heating Full-Load [2]
$H3C_3$ Test[5] [6] (optional, cyclic)	70	60(max)	17	15	Booster	([7])
$H3_2$ Test (required, steady)	70	60(max)	17	15	High	Heating Full-Load [2]
$H3_1$ Test[5] (required, steady)	70	60(max)	17	15	Low	Heating Minimum [1]
$H4_3$ Test (required, steady)	70	60(max)	5	3(max)	Booster	Heating Full-Load [2]

[1] Defined in section 3.1.4.5 of this appendix.
[2] Defined in section 3.1.4.4 of this appendix.
[3] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H1_2$ test.
[4] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H1_1$ test.
[5] Required only if the heat pump's performance when operating at low compressor capacity and outdoor temperatures less than 37°F is needed to complete the section 4.2.6 HSPF2 calculations.
[6] If table note [5] applies, the section 3.6.6 equations for $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(17)$ may be used in lieu of conducting the $H2_1$ test.
[7] Maintain the airflow nozzle(s) static pressure difference or velocity pressure during the ON period at the same pressure or velocity as measured during the $H3_3$ test.
[8] Required only if the heat pump locks out low capacity operation at lower outdoor temperatures

3.6.7 Tests for a Heat Pump Having a Single Indoor Unit Having Multiple Indoor Blowers and Offering Two Stages of Compressor Modulation. Conduct the Heating Mode Tests Specified in Section 3.6.3 of this Appendix

3.7 Test Procedures for Steady-State Maximum Temperature and High Temperature Heating Mode Tests (the $H0_1$, $H1$, $H1_2$, $H1_1$, and $H1_N$ tests)

a. For the pretest interval, operate the test room reconditioning apparatus and the heat pump until equilibrium conditions are maintained for at least 30 minutes at the specified section 3.6 test conditions. Use the exhaust fan of the airflow measuring apparatus and, if installed, the indoor blower of the heat pump to obtain and then maintain the indoor air volume rate and/or the external static pressure specified for the particular test. Continuously record the dry-bulb temperature of the air entering the indoor coil, and the dry-bulb temperature and water vapor content of the air entering the outdoor coil. Refer to section 3.11 of this appendix for additional requirements that depend on the selected secondary test method. After satisfying the pretest equilibrium requirements, make the measurements specified in Table 3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) for the indoor air enthalpy method and the user-selected secondary method. Make said Table 3 measurements at equal intervals that span 5 minutes or less. Continue data sampling until a 30-minute period (*e.g.*, seven consecutive 5-minute samples) is reached where the test tolerances specified in Table 16 are satisfied. For those continuously recorded parameters, use the entire data set for the 30-minute interval when evaluating Table 16 compliance. Determine the average electrical power consumption of the heat pump over the same 30-minute interval.

TABLE 16—TEST OPERATING AND TEST CONDITION TOLERANCES FOR SECTION 3.7 AND SECTION 3.10 STEADY-STATE HEATING MODE TESTS

	Test operating tolerance [1]	Test condition tolerance [1]
Indoor dry-bulb, °F:		
Entering temperature	2.0	0.5
Leaving temperature	2.0	
Indoor wet-bulb, °F:		
Entering temperature	1.0	
Leaving temperature	1.0	
Outdoor dry-bulb, °F:		
Entering temperature	2.0	0.5
Leaving temperature	[2] 2.0	
Outdoor wet-bulb, °F:		
Entering temperature	1.0	0.3
Leaving temperature	[2] 1.0	
External resistance to airflow, inches of water	0.05	[3] 0.02
Electrical voltage, % of reading	2.0	1.5
Nozzle pressure drop, % of reading	2.0	

[1] See section 1.2 of this appendix, Definitions.
[2] Only applies when the Outdoor Air Enthalpy Method is used.
[3] Only applies when testing non-ducted units.

b. Calculate indoor-side total heating capacity as specified in sections 7.3.4.1 and 7.3.4.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). To calculate capacity, use the averages of the measurements (*e.g.* inlet and outlet dry bulb temperatures measured at the psychrometers) that are continuously recorded for the same 30-minute interval used as described above to evaluate compliance with test tolerances. Do not adjust the parameters used in calculating capacity for the permitted variations in test conditions. Assign the average space heating capacity and electrical power over the 30-minute data collection interval to the variables $\dot{Q}_h^k$ and $\dot{E}_h^k(T)$ respectively. The ''T'' and superscripted ''k'' are the same as described in section 3.3 of this appendix. Additionally, for the heating mode, use the superscript to denote results from the optional $H1_N$ test, if conducted.

c. For mobile home and space-constrained coil-only system heat pumps, increase $\dot{Q}_h^k(T)$ by

$$\frac{1385\ BTU/h}{1000\ scfm} * \bar{\dot{V}}_s$$

and increase $\dot{E}_h^k(T)$ by,

$$\frac{406\ W}{1000\ scfm} * \bar{\dot{V}}_s$$

where $\bar{\dot{V}}_s$ is the average measured indoor air volume rate expressed in units of cubic feet per minute of standard air (scfm).

For non-mobile home, non-space-constrained coil-only system heat pumps, increase $\dot{Q}_h^k(T)$ by

$$\frac{1505\ BTU/h}{1000\ scfm} * \bar{\dot{V}}_s$$

and increase $\dot{E}_h^k(T)$ by,

$$\frac{441\ W}{1000\ scfm} * \bar{\dot{V}}_s$$

where $\bar{\dot{V}}_s$ is the average measured indoor air volume rate expressed in units of cubic feet per minute of standard air (scfm). During the 30-minute data collection interval of a high temperature test, pay attention to preventing a defrost cycle. Prior to this time, allow the heat pump to perform a defrost cycle if automatically initiated by its own controls. As in all cases, wait for the heat pump's defrost controls to automatically terminate the defrost cycle. Heat pumps that undergo a defrost cycle should operate in the heating mode for at least 10 minutes after defrost termination prior to beginning the 30-minute data collection interval. For some heat pumps, frost may accumulate on the outdoor coil during a high temperature test. If the indoor coil leaving air temperature or the difference between the leaving and entering air temperatures decreases by more than 1.5 °F over the 30-minute data collection interval, then do not use the collected data to determine capacity. Instead, initiate a defrost cycle. Begin collecting data no sooner than 10 minutes after defrost termination. Collect 30 minutes of new data during which the Table 16 test tolerances are satisfied. In this case, use only the results from the second 30-minute data collection interval to evaluate $\dot{Q}_h^k(47)$ and $\dot{E}_h^k(47)$.

d. If conducting the cyclic heating mode test, which is described in section 3.8 of this appendix, record the average indoor-side air volume rate, $\bar{\dot{V}}$, specific heat of the air, $C_{p,a}$ (expressed on dry air basis), specific volume of the air at the nozzles, v_n' (or v_n), humidity ratio at the nozzles, W_n, and either pressure difference or velocity pressure for the flow nozzles. If either or both of the below criteria apply, determine the average, steady-state, electrical power consumption of the indoor blower motor ($\dot{E}_{fan,1}$):

(1) The section 3.8 cyclic test will be conducted and the heat pump has a variable-speed indoor blower that is expected to be disabled during the cyclic test; or

(2) The heat pump has a (variable-speed) constant-air volume-rate indoor blower and during the steady-state test the average external static pressure (ΔP_1) exceeds the applicable section 3.1.4.4 minimum (or targeted) external static pressure (ΔP_{min}) by 0.03 inches of water or more.

Determine $\dot{E}_{fan,1}$ by making measurements during the 30-minute data collection interval, or immediately following the test and prior to changing the test conditions. When the above ''2'' criteria applies, conduct the following four steps after determining $\dot{E}_{fan,1}$ (which corresponds to ΔP_1):

(i) While maintaining the same test conditions, adjust the exhaust fan of the airflow measuring apparatus until the external static pressure increases to approximately $\Delta P_1 + (\Delta P_1 - \Delta P_{min})$.

(ii) After re-establishing steady readings for fan motor power and external static pressure, determine average values for the indoor blower power ($\dot{E}_{fan,2}$) and the external static pressure (ΔP_2) by making measurements over a 5-minute interval.

(iii) Approximate the average power consumption of the indoor blower motor if the 30-minute test had been conducted at ΔP_{min} using linear extrapolation:

$$\dot{E}_{fan,\min} = \frac{\dot{E}_{fan,2} - \dot{E}_{fan,1}}{\Delta P_2 - \Delta P_1}(\Delta P_{\min} - \Delta P_1) + \dot{E}_{fan,1}$$

(iv) Decrease the total space heating capacity, $\dot{Q}_h^k(T)$, by the quantity ($\dot{E}_{fan,1} - \dot{E}_{fan,min}$), when expressed on a Btu/h basis. Decrease the total electrical power, $\dot{E}_h^k(T)$ by the same fan power difference, now expressed in watts.

e. If the temperature sensors used to provide the primary measurement of the indoor-side dry bulb temperature difference during the steady-state dry-coil test and the subsequent cyclic dry-coil test are different, include measurements of the latter sensors among the regularly sampled data. Beginning at the start of the 30-minute data collection period, measure and compute the indoor-side air dry-bulb temperature difference using both sets of instrumentation, ΔT (Set SS) and ΔT (Set CYC), for each equally spaced data sample. If using a consistent data sampling rate that is less than 1 minute, calculate and record minutely averages for the two temperature differences. If using a consistent sampling rate of one minute or more, calculate and record the two temperature differences from each data sample. After having recorded the seventh (i=7) set of temperature differences, calculate the following ratio using the first seven sets of values:

$$F_{CD} = \frac{1}{7}\sum_{i-6}^{i}\frac{\Delta T(Set\ SS)}{\Delta T(Set\ CYC)}$$

Each time a subsequent set of temperature differences is recorded (if sampling more frequently than every 5 minutes), calculate F_{CD} using the most recent seven sets of values. Continue these calculations until the 30-minute period is completed or until a value for F_{CD} is calculated that falls outside the allowable range of 0.94–1.06. If the latter occurs, immediately suspend the test and identify the cause for the disparity in the two temperature difference measurements. Recalibration of one or both sets of instrumentation may be required. If all the values for F_{CD} are within the allowable range, save the final value of the ratio from the 30-minute test as F_{CD}*. If the temperature sensors used to provide the primary measurement of the indoor-side dry bulb temperature difference during the steady-state dry-coil test and the subsequent cyclic dry-coil test are the same, set F_{CD}*= 1.

3.8 Test Procedures for the Cyclic Heating Mode Tests (the $H0C_1$, H1C, $H1C_1$ and $H1C_2$ Tests).

a. Except as noted below, conduct the cyclic heating mode test as specified in section 3.5 of this appendix. As adapted to the heating mode, replace section 3.5 references to ''the steady-state dry coil test'' with ''the heating mode steady-state test conducted at the same test conditions as the cyclic heating mode test.'' Use the test tolerances in Table 17 rather than Table 10. Record the outdoor coil entering wet-bulb temperature according to the requirements given in section 3.5 of this appendix for the outdoor coil entering dry-bulb temperature. Drop the subscript ''dry'' used in variables cited in section 3.5 of this appendix when referring to quantities from the cyclic heating

mode test. If available, use electric resistance heaters (see section 2.1 of this appendix) to minimize the variation in the inlet air temperature. Determine the total space heating delivered during the cyclic heating test, q_{cyc}, as specified in section 3.5 of this appendix except for making the following changes:

(1) When evaluating Equation 3.5–1, use the values of $\bar{V}$, $C_{p,a}$,v_n', (or v_n), and W_n that were recorded during the section 3.7 steady-state test conducted at the same test conditions.

(2) Calculate

$$\Gamma \text{ using, } \Gamma = F_{CD}^{*} \int_{\tau_1}^{\tau_2} [T_{a1}(\tau) - T_{a2}(\tau)]\delta\tau, \ \ hr \times {}^{\circ}F,$$

where F_{CD}* is the value recorded during the section 3.7 steady-state test conducted at the same test condition.

b. For ducted coil-only system heat pumps (excluding the special case where a variable-speed fan is temporarily removed), increase q_{cyc} by the amount calculated using Equation 3.5–3. Additionally, increase e_{cyc} by the amount calculated using Equation 3.5–2. In making these calculations, use the average indoor air volume rate ($\bar{V}_s$) determined from the section 3.7 steady-state heating mode test conducted at the same test conditions.

c. For non-ducted heat pumps, subtract the electrical energy used by the indoor blower during the 3 minutes after compressor cutoff from the non-ducted heat pump's integrated heating capacity, $q_{cyc.}$

d. If a heat pump defrost cycle is manually or automatically initiated immediately prior to or during the OFF/ON cycling, operate the heat pump continuously until 10 minutes after defrost termination. After that, begin cycling the heat pump immediately or delay until the specified test conditions have been re-established. Pay attention to preventing defrosts after beginning the cycling process. For heat pumps that cycle off the indoor blower during a defrost cycle, make no effort here to restrict the air movement through the indoor coil while the fan is off. Resume the OFF/ON cycling while conducting a minimum of two complete compressor OFF/ON cycles before determining q_{cyc} and $e_{cyc.}$

3.8.1 Heating Mode Cyclic-Degradation Coefficient Calculation

Use the results from the required cyclic test and the required steady-state test that were conducted at the same test conditions to determine the heating mode cyclic-degradation coefficient C_D^h. Add ''(k=2)'' to the coefficient if it corresponds to a two-capacity unit cycling at high capacity. For the below calculation of the heating mode cyclic degradation coefficient, do not include the duct loss correction from section 7.3.3.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3) in determining $\dot{Q}_h^k(T_{cyc})$ (or q_{cyc}). If the optional cyclic test is conducted but yields a tested C_D^h that exceeds the default C_D^h or if the optional test is not conducted, assign C_D^h the default value of 0.25. The default value for two-capacity units cycling at high capacity, however, is the low-capacity coefficient, *i.e.,* C_D^h (k=2) = C_D^h. The tested C_D^h is calculated as follows:

$$C_D^h = \frac{1 - \frac{COP_{cyc}}{COP_{ss}(T_{cyc})}}{1 - HLF}$$

Where:

$$COP_{cyc} = \frac{q_{cyc}}{3.413 \frac{Btu/h}{W} * e_{cyc}}$$

the average coefficient of performance during the cyclic heating mode test, dimensionless.

$$COP_{ss}(T_{cyc}) = \frac{\dot{Q}_h^k(T_{cyc})}{3.413 \frac{Btu/h}{W} * \dot{E}_h^k(T_{cyc})}$$

the average coefficient of performance during the steady-state heating mode test conducted at the same test conditions—*i.e.,* same outdoor dry bulb temperature, T_{cyc}, and speed/capacity, k, if applicable—as specified for the cyclic heating mode test, dimensionless.

$$HLF = \frac{q_{cyc}}{\dot{Q}_h^k(T_{cyc}) * \Delta\tau_{cyc}}$$

the heating load factor, dimensionless.

T_{cyc} = the nominal outdoor temperature at which the cyclic heating mode test is conducted, 62 or 47 °F.

$\Delta\tau_{cyc}$ = the duration of the OFF/ON intervals; 0.5 hours when testing a heat pump having a single-speed or two-capacity compressor and 1.0 hour when testing a heat pump having a variable-speed compressor.

Round the calculated value for C_D^h to the nearest 0.01. If C_D^h is negative, then set it equal to zero.

TABLE 17—TEST OPERATING AND TEST CONDITION TOLERANCES FOR CYCLIC HEATING MODE TESTS

	Test operating tolerance [1]	Test condition tolerance [1]
Indoor entering dry-bulb temperature,[2] °F	2.0	0.5
Indoor entering wet-bulb temperature,[2] °F	1.0	.....
Outdoor entering dry-bulb temperature,[2] °F	2.0	0.5
Outdoor entering wet-bulb temperature,[2] °F	2.0	1.0
External resistance to air-flow,[2] inches of water	0.05	.....
Airflow nozzle pressure difference or velocity pressure,[2]% of reading	2.0	[3] 2.0
Electrical voltage,[4]% of reading	2.0	1.5

[1] See section 1.2 of this appendix, Definitions.
[2] Applies during the interval that air flows through the indoor (outdoor) coil except for the first 30 seconds after flow initiation. For units having a variable-speed indoor blower that ramps, the tolerances listed for the external resistance to airflow shall apply from 30 seconds after achieving full speed until ramp down begins.
[3] The test condition must be the average nozzle pressure difference or velocity pressure measured during the steady-state test conducted at the same test conditions.
[4] Applies during the interval that at least one of the following—the compressor, the outdoor fan, or, if applicable, the indoor blower—are operating, except for the first 30 seconds after compressor start-up.

3.9 Test Procedures for Frost Accumulation Heating Mode Tests (the H2, $H2_2$, $H2_V$, and $H2_1$ Tests).

a. Confirm that the defrost controls of the heat pump are set as specified in section 2.2.1 of this appendix. Operate the test room reconditioning apparatus and the heat pump for at least 30 minutes at the specified section 3.6 test conditions before starting the ''preliminary'' test period. The preliminary test period must immediately precede the ''official'' test period, which is the heating and defrost interval over which data are collected for evaluating average space heating capacity and average electrical power consumption.

b. For heat pumps containing defrost controls which are likely to cause defrosts at intervals less than one hour, the preliminary test period starts at the termination of an automatic defrost cycle and ends at the termination of the next occurring automatic defrost cycle. For heat pumps containing defrost controls which are likely to cause defrosts at intervals exceeding one hour, the preliminary test period must consist of a heating interval lasting at least one hour followed by a defrost cycle that is either manually or automatically initiated. In all cases, the heat pump's own controls must govern when a defrost cycle terminates.

c. The official test period begins when the preliminary test period ends, at defrost termination. The official test period ends at the termination of the next occurring automatic defrost cycle. When testing a heat pump that uses a time-adaptive defrost control system (see section 1.2 of this appendix, Definitions), however, manually initiate the defrost cycle that ends the official test period at the instant indicated by instructions provided by the manufacturer. If the heat pump has not undergone a defrost after 6 hours, immediately conclude the test and use the results from the full 6-hour period to calculate the average space heating capacity and average electrical power consumption.

For heat pumps that turn the indoor blower off during the defrost cycle, take steps to cease forced airflow through the indoor coil and block the outlet duct whenever the heat pump's controls cycle off the indoor blower. If it is installed, use the outlet damper box described in section 2.5.4.1 of this appendix to affect the blocked outlet duct.

d. Defrost termination occurs when the controls of the heat pump actuate the first change in converting from defrost operation to normal heating operation. Defrost initiation occurs when the controls of the heat pump first alter its normal heating operation in order to eliminate possible accumulations of frost on the outdoor coil.

e. To constitute a valid frost accumulation test, satisfy the test tolerances specified in Table 18 during both the preliminary and official test periods. As noted in Table 18, test operating tolerances are specified for two sub-intervals:

(1) When heating, except for the first 10 minutes after the termination of a defrost cycle (sub-interval H, as described in Table 18) and

(2) When defrosting, plus these same first 10 minutes after defrost termination (sub-interval D, as described in Table 18). Evaluate compliance with Table 18 test condition tolerances and the majority of the test operating tolerances using the averages from measurements recorded only during sub-interval H. Continuously record the dry bulb temperature of the air entering the indoor coil, and the dry bulb temperature and water vapor content of the air entering the outdoor coil. Sample the remaining parameters listed in Table 18 at equal intervals that span 5 minutes or less.

f. For the official test period, collect and use the following data to calculate average space heating capacity and electrical power. During heating and defrosting intervals when the controls of the heat pump have the indoor blower on, continuously record the dry-bulb temperature of the air entering (as noted above) and leaving the indoor coil. If using a thermopile, continuously record the difference between the leaving and entering dry-bulb temperatures during the interval(s) that air flows through the indoor coil. For coil-only system heat pumps, determine the corresponding cumulative time (in hours) of indoor coil airflow, $\Delta\tau_a$. Sample measurements used in calculating the air volume rate (refer to sections 7.7.2.1 and 7.7.2.2 of ANSI/ASHRAE 37–2009) at equal intervals that span 10 minutes or less. (**Note:** In the first printing of ANSI/ASHRAE 37–2009, the second IP equation for Q_{mi} should read:) Record the electrical energy consumed, expressed in watt-hours, from defrost termination to defrost termination, $e_{DEF}{}^k(35)$, as well as the corresponding elapsed time in hours, $\Delta\tau_{FR}$.

TABLE 18—TEST OPERATING AND TEST CONDITION TOLERANCES FOR FROST ACCUMULATION HEATING MODE TESTS

	Test operating tolerance [1]		Test condition tolerance [1]
	Sub-interval H [2]	Sub-interval D [3]	Sub-interval H [2]
Indoor entering dry-bulb temperature, °F	2.0	[4] 4.0	0.5
Indoor entering wet-bulb temperature, °F	1.0	.....	.....
Outdoor entering dry-bulb temperature, °F	2.0	10.0	1.0
Outdoor entering wet-bulb temperature, °F	1.5	.....	0.5
External resistance to airflow, inches of water	0.05	.....	[5] 0.02
Electrical voltage, % of reading	2.0	.....	1.5

[1] See section 1.2 of this appendix, Definitions.

[2] Applies when the heat pump is in the heating mode, except for the first 10 minutes after termination of a defrost cycle.
[3] Applies during a defrost cycle and during the first 10 minutes after the termination of a defrost cycle when the heat pump is operating in the heating mode.
[4] For heat pumps that turn off the indoor blower during the defrost cycle, the noted tolerance only applies during the 10 minute interval that follows defrost termination.
[5] Only applies when testing non-ducted heat pumps.

3.9.1 Average Space Heating Capacity and Electrical Power Calculations

a. Evaluate average space heating capacity, $\dot{Q}_h^k(35)$, when expressed in units of Btu per hour, using:

$$\dot{Q}_h^k(35) = \frac{60 * \bar{\dot{V}} * C_{p,a} * \Gamma}{\Delta\tau_{FR}[v_n' * (1 + W_n)]} = \frac{60 * \bar{\dot{V}} * C_{p,a} * \Gamma}{\Delta\tau_{FR} v_n}$$

where,

$\bar{V}$ = the average indoor air volume rate measured during sub-interval H, cfm.

$C_{p,a} = 0.24 + 0.444 \cdot W_n$, the constant pressure specific heat of the air-water vapor mixture that flows through the indoor coil and is expressed on a dry air basis, $Btu/lbm_{da} \cdot °F$.

v_n' = specific volume of the air-water vapor mixture at the nozzle, $ft^3/lbm_{mx.}$

W_n = humidity ratio of the air-water vapor mixture at the nozzle, lbm of water vapor per lbm of dry air.

$\Delta\tau_{FR} = \tau_2 - \tau_1$, the elapsed time from defrost termination to defrost termination, hr.

$$\Gamma = \int_{\tau_1}^{\tau_2} [T_{a2}(\tau) - T_{a1}(\tau)] d\tau,\ hr * °F$$

$T_{a1}(\tau)$ = dry bulb temperature of the air entering the indoor coil at elapsed time τ, °F; only recorded when indoor coil airflow occurs; assigned the value of zero during periods (if any) where the indoor blower cycles off.

$T_{a2}(\tau)$ = dry bulb temperature of the air leaving the indoor coil at elapsed time τ, °F; only recorded when indoor coil airflow occurs; assigned the value of zero during periods (if any) where the indoor blower cycles off.

τ_1 = the elapsed time when the defrost termination occurs that begins the official test period, hr.

τ_2 = the elapsed time when the next automatically occurring defrost termination occurs, thus ending the official test period, hr.

v_n = specific volume of the dry air portion of the mixture evaluated at the dry-bulb temperature, vapor content, and barometric pressure existing at the nozzle, ft^3 per lbm of dry air.

To account for the effect of duct losses between the outlet of the indoor unit and the section 2.5.4 dry-bulb temperature grid, adjust $\dot{Q}_h^k(35)$ in accordance with section 7.3.4.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3).

b. Evaluate average electrical power, $\dot{E}_h^k(35)$, when expressed in units of watts, using:

$$\dot{E}_h^k(35) = \frac{e_{def}(35)}{\Delta\tau_{FR}}$$

For mobile home and space-constrained coil-only system heat pumps, increase $\dot{Q}_h^k(35)$ by

$$\frac{1385\ BTU/h}{1000\ scfm} * \bar{\dot{V}}_s$$

and increase $\dot{E}_h^k(35)$ by,

$$\frac{406\ W}{1000\ scfm} * \bar{\dot{V}}_s$$

where $\bar{V}_s$ is the average measured indoor air volume rate expressed in units of cubic feet per minute of standard air (scfm).

For non-mobile home, non-space-constrained coil-only system heat pumps, increase $\dot{Q}_h^k(35)$ by

$$\frac{1505\ BTU/h}{1000\ scfm} * \bar{\dot{V}}_s$$

and increase $\dot{E}_h^k(35)$ by,

$$\frac{441\ W}{1000\ scfm} * \bar{\dot{V}}_s$$

where $\bar{V}_s$ is the average measured indoor air volume rate expressed in units of cubic feet per minute of standard air (scfm).

c. For heat pumps having a constant-air-volume-rate indoor blower, the five additional steps listed below are required if the average of the external static pressures measured during sub-interval H exceeds the applicable section 3.1.4.4, 3.1.4.5, or 3.1.4.6 minimum (or targeted) external static pressure (ΔP_{min}) by 0.03 inches of water or more:

(1) Measure the average power consumption of the indoor blower motor ($\dot{E}_{fan,1}$) and record the corresponding external static pressure (ΔP_1) during or immediately following the frost accumulation heating mode test. Make the measurement at a time when the heat pump is heating, except for the first 10 minutes after the termination of a defrost cycle.

(2) After the frost accumulation heating mode test is completed and while maintaining the same test conditions, adjust the exhaust fan of the airflow measuring apparatus until the external static pressure increases to approximately $\Delta P_1 + (\Delta P_1 - \Delta P_{min})$.

(3) After re-establishing steady readings for the fan motor power and external static pressure, determine average values for the indoor blower power ($\dot{E}_{fan,2}$) and the external static pressure (ΔP_2) by making measurements over a 5-minute interval.

(4) Approximate the average power consumption of the indoor blower motor had the frost accumulation heating mode test been conducted at ΔP_{min} using linear extrapolation:

$$\dot{E}_{fan,\min} = \frac{\dot{E}_{fan,2} - \dot{E}_{fan,1}}{\Delta P_2 - \Delta P_1}(\Delta P_{\min} - \Delta P_1) + \dot{E}_{fan,1}$$

(5) Decrease the total heating capacity, $\dot{Q}_h^k(35)$, by the quantity $[(\dot{E}_{fan,1} - \dot{E}_{fan,min}) \cdot (\Delta\tau_a/\Delta\tau_{FR}]$, when expressed on a Btu/h basis. Decrease the total electrical power, $E_h^k(35)$, by the same quantity, now expressed in watts.

3.9.2 Demand Defrost Credit

a. Assign the demand defrost credit, F_{def}, that is used in section 4.2 of this appendix to the value of 1 in all cases except for heat pumps having a demand-defrost control system (see section 1.2 of this appendix, Definitions). For such qualifying heat pumps, evaluate F_{def} using,

$$F_{def} = 1 + 0.03 * \left[1 - \frac{\Delta\tau_{def} - 1.5}{\Delta\tau_{\max} - 1.5}\right]$$

where:

$\Delta\tau_{def}$ = the time between defrost terminations (in hours) or 1.5, whichever is greater. Assign a value of 6 to $\Delta\tau_{def}$ if this limit is reached during a frost accumulation test and the heat pump has not completed a defrost cycle.

$\Delta\tau_{max}$ = maximum time between defrosts as allowed by the controls (in hours) or 12, whichever is less, as provided in the certification report.

b. For two-capacity heat pumps and for section 3.6.2 units, evaluate the above equation using the $\Delta\tau_{def}$ that applies based on the frost accumulation test conducted at high capacity and/or at the heating full-load air volume rate. For variable-speed heat pumps, evaluate $\Delta\tau_{def}$ based on the required frost accumulation test conducted at the intermediate compressor speed.

3.10 Test Procedures for Steady-State Low Temperature and Very Low Temperature Heating Mode Tests (the H3, $H3_2$, $H3_1$, $H3_3$, H4, $H4_2$, and $H4_3$ Tests)

Except for the modifications noted in this section, conduct the low temperature and very low temperature heating mode tests using the same approach as specified in section 3.7 of this appendix for the maximum and high temperature tests. After satisfying the section 3.7 requirements for the pretest interval but before beginning to collect data to determine the capacity and power input, conduct a defrost cycle. This defrost cycle may be manually or automatically initiated. Terminate the defrost sequence using the heat pump's defrost controls. Begin the 30-minute data collection interval described in section 3.7 of this appendix, from which the capacity and power input are determined, no sooner than 10 minutes after defrost termination. Defrosts should be prevented over the 30-minute data collection interval.

3.11 Additional Requirements for the Secondary Test Methods

3.11.1 If Using the Outdoor Air Enthalpy Method as the Secondary Test Method.

a. For all cooling mode and heating mode tests, first conduct a test without the outdoor air-side test apparatus described in section 2.10.1 of this appendix connected to the outdoor unit (''free outdoor air'' test).

b. For the first section 3.2 steady-state cooling mode test and the first section 3.6 steady-state heating mode test, conduct a second test in which the outdoor-side apparatus is connected (''ducted outdoor air'' test). No other cooling mode or heating mode tests require the ducted outdoor air test so long as the unit operates the outdoor fan during all cooling mode steady-state tests at the same speed and all heating mode steady-state tests at the same speed. If using more than one outdoor fan speed for the cooling mode steady-state tests, however, conduct the ducted outdoor air test for each cooling mode test where a different fan speed is first used. This same requirement applies for the heating mode tests.

3.11.1.1 Free Outdoor Air Test

a. For the free outdoor air test, connect the indoor air-side test apparatus to the indoor coil; do not connect the outdoor air-side test apparatus. Allow the test room reconditioning apparatus and the unit being tested to operate for at least one hour. After attaining equilibrium conditions, measure the following quantities at equal intervals that span 5 minutes or less:

(1) The section 2.10.1 evaporator and condenser temperatures or pressures;

(2) Parameters required according to the Indoor Air Enthalpy Method.

Continue these measurements until a 30-minute period (*e.g.,* seven consecutive 5-minute samples) is obtained where the Table 9 or Table 16, whichever applies, test tolerances are satisfied.

b. For cases where a ducted outdoor air test is not required per section 3.11.1.b of this appendix, the free outdoor air test constitutes the ''official'' test for which validity is not based on comparison with a secondary test.

c. For cases where a ducted outdoor air test is required per section 3.11.1.b of this appendix, the following conditions must be met for the free outdoor air test to constitute a valid ''official'' test:

(1) The energy balance specified in section 3.1.1 of this appendix is achieved for the ducted outdoor air test (*i.e.,* compare the capacities determined using the indoor air enthalpy method and the outdoor air enthalpy method).

(2) The capacities determined using the indoor air enthalpy method from the ducted outdoor air and free outdoor air tests must agree within 2 percent.

3.11.1.2 Ducted Outdoor Air Test

a. The test conditions and tolerances for the ducted outdoor air test are the same as specified for the official test, where the official test is the free outdoor air test described in section 3.11.1.1 of this appendix.

b. After collecting 30 minutes of steady-state data during the free outdoor air test, connect the outdoor air-side test apparatus to the unit for the ducted outdoor air test. Adjust the exhaust fan of the outdoor airflow measuring apparatus until averages for the evaporator and condenser temperatures, or the saturated temperatures corresponding to the measured pressures, agree within ±0.5 °F of the averages achieved during the free outdoor air test. Collect 30 minutes of steady-state data after re-establishing equilibrium conditions.

c. During the ducted outdoor air test, at intervals of 5 minutes or less, measure the parameters required according to the indoor air enthalpy method and the outdoor air enthalpy method for the prescribed 30 minutes.

d. For cooling mode ducted outdoor air tests, calculate capacity based on outdoor air-enthalpy measurements as specified in sections 7.3.3.2 and 7.3.3.3 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3). For heating mode ducted tests, calculate heating capacity based on outdoor air-enthalpy measurements as specified in sections 7.3.4.2 and 7.3.3.4.3 of the same ANSI/ASHRAE Standard. Adjust the outdoor-side capacity according to section 7.3.3.4 of ANSI/ASHRAE 37–2009 to account for line losses when testing split systems. As described in section 8.6.2 of ANSI/ASHRAE 37–2009, use the outdoor air volume rate as measured during the ducted outdoor air tests to calculate capacity for checking the agreement with the capacity calculated using the indoor air enthalpy method.

3.11.2 If Using the Compressor Calibration Method as the Secondary Test Method

a. Conduct separate calibration tests using a calorimeter to determine the refrigerant flow rate. Or for cases where the superheat of the refrigerant leaving the evaporator is less than 5 °F, use the calorimeter to measure total capacity rather than refrigerant flow rate. Conduct these calibration tests at the same test conditions as specified for the tests in this appendix. Operate the unit for at least one hour or until obtaining equilibrium conditions before collecting data that will be used in determining the average refrigerant flow rate or total capacity. Sample the data at equal intervals that span 5 minutes or less. Determine average flow rate or average capacity from data sampled over a 30-minute period where the Table 9 (cooling) or the Table 16 (heating) tolerances are satisfied. Otherwise, conduct the calibration tests according to sections 5, 6, 7, and 8 of ASHRAE 23.1–2010 (incorporated by reference, see § 430.3); sections 5, 6, 7, 8, 9, and 11 of ASHRAE 41.9–2011 (incorporated by reference, see § 430.3); and section 7.4 of ANSI/ASHRAE 37–2009 (incorporated by reference, see § 430.3).

b. Calculate space cooling and space heating capacities using the compressor calibration method measurements as specified in section 7.4.5 and 7.4.6 respectively, of ANSI/ASHRAE 37–2009.

3.11.3 If Using the Refrigerant-Enthalpy Method as the Secondary Test Method

Conduct this secondary method according to section 7.5 of ANSI/ASHRAE 37–2009. Calculate space cooling and heating capacities using the refrigerant-enthalpy method measurements as specified in sections 7.5.4 and 7.5.5, respectively, of the same ANSI/ASHRAE Standard.

3.12 Rounding of Space Conditioning Capacities for Reporting Purposes

a. When reporting rated capacities, round them off as specified in § 430.23 (for a single unit) and in 10 CFR 429.16 (for a sample).

b. For the capacities used to perform the calculations in section 4 of this appendix, however, round only to the nearest integer.

3.13 Laboratory Testing To Determine Off Mode Average Power Ratings

Voltage tolerances: As a percentage of reading, test operating tolerance must be 2.0 percent and test condition tolerance must be 1.5 percent (see section 1.2 of this appendix for definitions of these tolerances).

Conduct one of the following tests: If the central air conditioner or heat pump lacks a compressor crankcase heater, perform the test in section 3.13.1 of this appendix; if the central air conditioner or heat pump has a compressor crankcase heater that lacks controls and is not self-regulating, perform the test in section 3.13.1 of this appendix; if the central air conditioner or heat pump has a crankcase heater with a fixed power input controlled with a thermostat that measures ambient temperature and whose sensing element temperature is not affected by the heater, perform the test in section 3.13.1 of this appendix; if the central air conditioner or heat pump has a compressor crankcase heater equipped with self-regulating control or with controls for which the sensing element temperature is affected by the heater, perform the test in section 3.13.2 of this appendix.

3.13.1 This Test Determines the Off Mode Average Power Rating for Central Air Conditioners and Heat Pumps That Lack a Compressor Crankcase Heater, or Have a Compressor Crankcase Heating System That Can Be Tested Without Control of Ambient Temperature During the Test. This Test Has No Ambient Condition Requirements

a. Test Sample Set-up and Power Measurement: For coil-only systems, provide a furnace or modular blower that is compatible with the system to serve as an interface with the thermostat (if used for the test) and to provide low-voltage control circuit power. Make all control circuit connections between the furnace (or modular blower) and the outdoor unit as specified by the manufacturer's installation instructions. Measure power supplied to both the furnace (or modular blower) and power supplied to the outdoor unit. Alternatively, provide a compatible transformer to supply low-voltage control circuit power, as described in section 2.2.d of this appendix. Measure transformer power, either supplied to the primary winding or supplied by the secondary winding of the transformer, and power supplied to the outdoor unit. For blower coil and single-package systems, make all control circuit connections between components as specified by the manufacturer's installation instructions, and provide power and measure power supplied to all system components.

b. Configure Controls: Configure the controls of the central air conditioner or heat pump so that it operates as if connected to a building thermostat that is set to the OFF position. Use a compatible building thermostat if necessary to achieve this configuration. For a thermostat-controlled crankcase heater with a fixed power input, bypass the crankcase heater thermostat if necessary to energize the heater.

c. Measure $P2_x$: If the unit has a crankcase heater time delay, make sure that time-delay function is disabled or wait until delay time has passed. Determine the average power from non-zero value data measured over a 5-minute interval of the non-operating central air conditioner or heat pump and designate the average power as $P2_x$, the heating season total off mode power.

d. Measure P_x for coil-only split systems and for blower coil split systems for which a furnace or a modular blower is the designated air mover: Disconnect all low-voltage wiring for the *outdoor* components and *outdoor* controls from the low-voltage transformer. Determine the average power from non-zero value data measured over a 5-minute interval of the power supplied to the (remaining) low-voltage components of the central air conditioner or heat pump, or low-voltage power, P_x. This power measurement does not include line power supplied to the outdoor unit. It is the line power supplied to the air mover, or, if a compatible transformer is used instead of an air mover, it is the line power supplied to the transformer primary coil. If a compatible transformer is used instead of an air mover and power output of the low-voltage secondary circuit is measured, P_x is zero.

e. Calculate *P2:* Set the number of compressors equal to the unit's number of single-stage compressors plus 1.75 times the unit's number of compressors that are not single-stage.

For single-package systems and blower coil split systems for which the designated air mover is not a furnace or modular blower, divide the heating season total off mode power ($P2_x$) by the number of compressors to calculate *P2,* the heating season per-compressor off mode power. Round *P2* to the nearest watt. The expression for calculating *P2* is as follows:

$$P2 = \frac{P2_x}{number\ of\ compressors}.$$

For coil-only split systems and blower coil split systems for which a furnace or a modular blower is the designated air mover, subtract the low-voltage power (P_x) from the heating season total off mode power (P_x) and divide by the number of compressors to calculate *P2,* the heating season per-compressor off mode power. Round *P2* to the nearest watt. The expression for calculating *P2* is as follows:

$$P2 = \frac{P2_x - P_x}{number\ of\ compressors}.$$

f. Shoulder-season per-compressor off mode power, P1: If the system does not have a crankcase heater, has a crankcase heater without controls that is not self-regulating, or has a value for the crankcase heater turn-on temperature (as certified to DOE) that is higher than 71 °F, P1 is equal to P2.

Otherwise, de-energize the crankcase heater (by removing the thermostat bypass or otherwise disconnecting only the power supply to the crankcase heater) and repeat the measurement as described in section 3.13.1.c of this appendix. Designate the measured average power as $P1_x$, the shoulder season total off mode power.

Determine the number of compressors as described in section 3.13.1.e of this appendix.

For single-package systems and blower coil systems for which the designated air mover is not a furnace or modular blower, divide the shoulder season total off mode power ($P1_x$) by the number of compressors to calculate *P1,* the shoulder season per-compressor off mode power. Round *P1* to the nearest watt. The expression for calculating *P1* is as follows:

$$P1 = \frac{P1_x}{number\ of\ compressors}.$$

For coil-only split systems and blower coil split systems for which a furnace or a modular blower is the designated air mover, subtract the low-voltage power (P_x) from the shoulder season total off mode power ($P1_x$) and divide by the number of compressors to calculate *P1,* the shoulder season per-compressor off mode power. Round *P1* to the nearest watt. The expression for calculating *P1* is as follows:

$$P1 = \frac{P1_x - P_x}{number\ of\ compressors}.$$

3.13.2 This Test Determines the Off Mode Average Power Rating for Central Air Conditioners and Heat Pumps for Which Ambient Temperature Can Affect the Measurement of Crankcase Heater Power

a. Test Sample Set-up and Power Measurement: set up the test and measurement as described in section 3.13.1.a of this appendix.

b. Configure Controls: Position a temperature sensor to measure the outdoor dry-bulb temperature in the air between 2 and 6 inches from the crankcase heater control temperature sensor or, if no such temperature sensor exists, position it in the air between 2 and 6 inches from the crankcase heater. Utilize the temperature measurements from this sensor for this portion of the test procedure. Configure the controls of the central air conditioner or heat pump so that it operates as if connected to a building thermostat that is set to the OFF position. Use a compatible building thermostat if necessary to achieve this configuration.

Conduct the test after completion of the B, B_1, or B_2 test. Alternatively, start the test when the outdoor dry-bulb temperature is at 82 °F and the temperature of the compressor shell (or temperature of each compressor's shell if there is more than one compressor) is at least 81 °F. Then adjust the outdoor

temperature and achieve an outdoor dry-bulb temperature of 72 °F. If the unit's compressor has no sound blanket, wait at least 4 hours after the outdoor temperature reaches 72 °F. Otherwise, wait at least 8 hours after the outdoor temperature reaches 72 °F. Maintain this temperature within ±2 °F while the compressor temperature equilibrates and while making the power measurement, as described in section 3.13.2.c of this appendix.

c. Measure $P1_x$: If the unit has a crankcase heater time delay, make sure that time-delay function is disabled or wait until delay time has passed. Determine the average power from non-zero value data measured over a 5-minute interval of the non-operating central air conditioner or heat pump and designate the average power as $P1_x$, the shoulder season total off mode power. For units with crankcase heaters which operate during this part of the test and whose controls cycle or vary crankcase heater power over time, the test period shall consist of three complete crankcase heater cycles or 18 hours, whichever comes first. Designate the average power over the test period as $P1_x$, the shoulder season total off mode power.

d. Reduce outdoor temperature: Approach the target outdoor dry-bulb temperature by adjusting the outdoor temperature. This target temperature is five degrees Fahrenheit less than the temperature certified by the manufacturer as the temperature at which the crankcase heater turns on. If the unit's compressor has no sound blanket, wait at least 4 hours after the outdoor temperature reaches the target temperature. Otherwise, wait at least 8 hours after the outdoor temperature reaches the target temperature. Maintain the target temperature within ±2 °F while the compressor temperature equilibrates and while making the power measurement, as described in section 3.13.2.e of this appendix.

e. Measure $P2_x$: If the unit has a crankcase heater time delay, make sure that time-delay function is disabled or wait until delay time has passed. Determine the average non-zero power of the non-operating central air conditioner or heat pump over a 5-minute interval and designate it as $P2_x$, the heating season total off mode power. For units with crankcase heaters whose controls cycle or vary crankcase heater power over time, the test period shall consist of three complete crankcase heater cycles or 18 hours, whichever comes first. Designate the average power over the test period as $P2_x$, the heating season total off mode power.

f. Measure P_x for coil-only split systems and for blower coil split systems for which a furnace or modular blower is the designated air mover: Disconnect all low-voltage wiring for the *outdoor* components and *outdoor* controls from the low-voltage transformer. Determine the average power from non-zero value data measured over a 5-minute interval of the power supplied to the (remaining) low-voltage components of the central air conditioner or heat pump, or low-voltage power, P_x. This power measurement does not include line power supplied to the outdoor unit. It is the line power supplied to the air mover, or, if a compatible transformer is used instead of an air mover, it is the line power supplied to the transformer primary coil. If a compatible transformer is used instead of an air mover and power output of the low-voltage secondary circuit is measured, P_x is zero.

g. Calculate *P1:*

Set the number of compressors equal to the unit's number of single-stage compressors plus 1.75 times the unit's number of compressors that are not single-stage.

For single-package systems and blower coil split systems for which the air mover is not a furnace or modular blower, divide the shoulder season total off mode power ($P1_x$) by the number of compressors to calculate *P1,* the shoulder season per-compressor off mode power. Round to the nearest watt. The expression for calculating *P1* is as follows:

$$P1 = \frac{P1_x}{number\ of\ compressors}.$$

For coil-only split systems and blower coil split systems for which a furnace or a modular blower is the designated air mover, subtract the low-voltage power (P_x) from the shoulder season total off mode power ($P1_x$) and divide by the number of compressors to calculate *P1,* the shoulder season per-compressor off mode power. Round to the nearest watt. The expression for calculating *P1* is as follows:

$$P1 = \frac{P1_x - P_x}{number\ of\ compressors}.$$

h. Calculate *P2:*

Determine the number of compressors as described in section 3.13.2.g of this appendix.

For, single-package systems and blower coil split systems for which the air mover is not a furnace, divide the heating season total off mode power ($P2_x$) by the number of compressors to calculate *P2,* the heating season per-compressor off mode power. Round to the nearest watt. The expression for calculating *P2* is as follows:

$$P2 = \frac{P2_x}{number\ of\ compressors}.$$

For coil-only split systems and blower coil split systems for which a furnace or a modular blower is the designated air mover, subtract the low-voltage power (P_x) from the heating season total off mode power ($P2_x$) and divide by the number of compressors to calculate *P2,* the heating season per-compressor off mode power. Round to the nearest watt. The expression for calculating *P2* is as follows:

$$P2 = \frac{P2_x - P_x}{number\ of\ compressors}.$$

4 Calculations of Seasonal Performance Descriptors

4.1 Seasonal Energy Efficiency Ratio (SEER2) Calculations

Calculate SEER2 as follows: For equipment covered under sections 4.1.2, 4.1.3, and 4.1.4 of this appendix, evaluate the seasonal energy efficiency ratio,

$$\text{Equation 4.1-1 } SEER2 = \frac{\sum_{j=1}^{8} q_c(T_j)}{\sum_{j=1}^{8} e_c(T_j)} = \frac{\sum_{j=1}^{8} \frac{q_c(T_j)}{N}}{\sum_{j=1}^{8} \frac{e_c(T_j)}{N}}$$

where,

$\frac{q_c(T_j)}{N}$ = the ratio of the total space cooling provided during periods of the space cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season (N), Btu/h.

$\frac{e_c(T_j)}{N}$ = the electrical energy consumed by the test unit during periods of the space cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season (N), W.

T_j = the outdoor bin temperature, °F. Outdoor temperatures are grouped or ''binned.'' Use bins of 5 °F with the 8 cooling season bin temperatures being 67, 72, 77, 82, 87, 92, 97, and 102 °F.

j = the bin number. For cooling season calculations, j ranges from 1 to 8.

Additionally, for sections 4.1.2, 4.1.3, and 4.1.4 of this appendix, use a building cooling load, $BL(T_j)$. When referenced, evaluate $BL(T_j)$ for cooling using,

$$\text{Equation 4.1-2 } BL(T_j) = \frac{(T_j - 65)}{95 - 65} * \frac{\dot{Q}_c^{k=2}(95)}{1.1} * V$$

where:

$\dot{Q}_c^{k=2}(95)$ = the space cooling capacity determined from the A_2 test and calculated as specified in section 3.3 of this appendix, Btu/h.

1.1 = sizing factor, dimensionless.

The temperatures 95 °F and 65 °F in the building load equation represent the selected outdoor design temperature and the zero-load base temperature, respectively.

V is a factor equal to 0.93 for variable-speed heat pumps and otherwise equal to 1.0.

4.1.1 SEER2 Calculations for a Blower Coil System Having a Single-Speed Compressor and Either a Fixed-Speed Indoor Blower or a Constant-Air-Volume-Rate Indoor Blower, or a Single-Speed Coil-Only System Air Conditioner or Heat Pump

a. Evaluate the seasonal energy efficiency ratio, expressed in units of Btu/watt-hour, using:

$SEER2 = PLF(0.5) * EER_B$

where:

$EER_B = \frac{\dot{Q}_c(82)}{\dot{E}_c(82)}$ = the energy efficiency ratio determined from the B test described in sections 3.2.1, 3.1.4.1, and 3.3 of this appendix, Btu/h per watt.

$PLF(0.5) = 1 - 0.5 \cdot C_D^c$, the part-load performance factor evaluated at a cooling load factor of 0.5, dimensionless.

b. Refer to section 3.3 of this appendix regarding the definition and calculation of $\dot{Q}_c(82)$ and $\dot{E}_c(82)$. Evaluate the cooling mode cyclic degradation factor C_D^c as specified in section 3.5.3 of this appendix.

4.1.2 SEER2 Calculations for an Air Conditioner or Heat Pump Having a Single-Speed Compressor and a Variable-Speed Variable-Air-Volume-Rate Indoor Blower

4.1.2.1 Units Covered by Section 3.2.2.1 of This Appendix Where Indoor Blower Capacity Modulation Correlates With the Outdoor Dry Bulb Temperature

The manufacturer must provide information on how the indoor air volume rate or the indoor blower speed varies over the outdoor temperature range of 67 °F to 102 °F. Calculate SEER2 using Equation 4.1–1. Evaluate the quantity $q_c(T_j)/N$ in Equation 4.1–1 using,

$$\text{Equation 4.1.2-1} \quad \frac{q_c(T_j)}{N} = X(T_j) * \dot{Q}_c(T_j) * \frac{n_j}{N}$$

where:

$$X(T_j) = \begin{Bmatrix} BL(T_j)/\dot{Q}_c(T_j) \\ or \\ 1 \end{Bmatrix}$$ whichever is less; the cooling mode load factor for temperature bin j, dimensionless.

$\dot{Q}_c(T_j)$ = the space cooling capacity of the test unit when operating at outdoor temperature, T_j, Btu/h.

n_j/N = fractional bin hours for the cooling season; the ratio of the number of hours during the cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season, dimensionless.

a. For the space cooling season, assign n_j/N as specified in Table 19. Use Equation 4.1–2 to calculate the building load, $BL(T_j)$. Evaluate $\dot{Q}_c(T_j)$ using,

$$\text{Equation 4.1.2-2} \quad \dot{Q}_c(T_j) = \dot{Q}_c^{k=1}(T_j) + \frac{\dot{Q}_c^{k=2}(T_j) - \dot{Q}_c^{k=1}(T_j)}{\mathrm{FP}_c^{k=2} - \mathrm{FP}_c^{k=1}} * \left[\mathrm{FP}_c(T_j) - \mathrm{FP}_c^{k=1}\right]$$

where:

$$\dot{Q}_c^{k=1}(T_j) = \dot{Q}_c^{k=1}(82) + \frac{\dot{Q}_c^{k=1}(95) - \dot{Q}_c^{k=1}(82)}{95 - 82} * (T_j - 82)$$

the space cooling capacity of the test unit at outdoor temperature T_j if operated at the cooling minimum air volume rate, Btu/h.

$$\dot{Q}_c^{k=2}(T_j) = \dot{Q}_c^{k=2}(82) + \frac{\dot{Q}_c^{k=2}(95) - \dot{Q}_c^{k=2}(82)}{95 - 82} * (T_j - 82)$$

the space cooling capacity of the test unit at outdoor temperature T_j if operated at the Cooling full-load air volume rate, Btu/h.

b. For units where indoor blower speed is the primary control variable, $FP_c^{k=1}$ denotes the fan speed used during the required A_1 and B_1 tests (see section 3.2.2.1 of this appendix), $FP_c^{k=2}$ denotes the fan speed used during the required A_2 and B_2 tests, and $FP_c(T_j)$ denotes the fan speed used by the unit when the outdoor temperature equals T_j. For units where indoor air volume rate is the primary control variable, the three FP_c's are similarly defined only now being expressed in terms of air volume rates rather than fan speeds. Refer to sections 3.2.2.1, 3.1.4 to 3.1.4.2, and 3.3 of this appendix regarding the definitions and calculations of $\dot{Q}_c^{k=1}(82)$, $\dot{Q}_c^{k=1}(95)$, $\dot{Q}_c^{k=2}(82)$, and $\dot{Q}_c^{k=2}(95)$.

Calculate $e_c(T_j)/N$ in Equation 4.1–1 using, Equation 4.1.2–3

$$\frac{e_c(T_j)}{N} = \frac{X(T_j) * \dot{E}_c(T_j)}{PLF_j} * \frac{n_j}{N}$$

where:

$PLF_j = 1 - C_D^c \cdot [1 - X(T_j)]$, the part load factor, dimensionless.

$\dot{E}_c(T_j)$ = the electrical power consumption of the test unit when operating at outdoor temperature T_j, W.

c. The quantities $X(T_j)$ and n_j/N are the same quantities as used in Equation 4.1.2–1. Evaluate the cooling mode cyclic degradation factor C_D^c as specified in section 3.5.3 of this appendix.

d. Evaluate $\dot{E}_c(T_j)$ using,

$$\dot{E}_c(T_j) = \dot{E}_c^{k=1}(T_j) + \frac{\dot{E}_c^{k=2}(T_j) - \dot{E}_c^{k=1}(T_j)}{\mathrm{FP}_c^{k=2} - \mathrm{FP}_c^{k=1}} * \left[\mathrm{FP}_c(T_j) - \mathrm{FP}_c^{k=1}\right]$$

where:

$$\dot{E}_c^{k=1}(T_j) = \dot{E}_c^{k=1}(82) + \frac{\dot{E}_c^{k=1}(95) - \dot{E}_c^{k=1}(82)}{95 - 82} * (T_j - 82)$$

the electrical power consumption of the test unit at outdoor temperature T_j if operated at the cooling minimum air volume rate, W.

$\dot{E}_c^{k=2}(T_j) = \dot{E}_c^{k=2}(82) + \frac{\dot{E}_c^{k=2}(95) - \dot{E}_c^{k=2}(82)}{95-82} * (T_j - 82)$ the electrical power consumption of the test unit at outdoor temperature T_j if operated at the cooling full-load air volume rate, W.

e. The parameters $FP_c^{k=1}$, and $FP_c^{k=2}$, and $FP_c(T_j)$ are the same quantities that are used when evaluating Equation 4.1.2–2. Refer to sections 3.2.2.1, 3.1.4 to 3.1.4.2, and 3.3 of this appendix regarding the definitions and calculations of $\dot{E}_c^{k=1}(82)$, $\dot{E}_c^{k=1}(95)$, $\dot{E}_c^{k=2}(82)$, and $\dot{E}_c^{k=2}(95)$.

4.1.2.2 Units Covered by Section 3.2.2.2 of This Appendix Where Indoor Blower Capacity Modulation is Used to Adjust the Sensible to Total Cooling Capacity Ratio

Calculate SEER2 as specified in section 4.1.1 of this appendix.

4.1.3 SEER2 Calculations for an Air Conditioner or Heat Pump Having a Two-Capacity Compressor

Calculate SEER2 using Equation 4.1–1. Evaluate the space cooling capacity, $\dot{Q}_c^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=1}(T_j)$, of the test unit when operating at low compressor capacity and outdoor temperature T_j using,

Equation 4.1.3-1 $$\dot{Q}_c^{k=1}(T_j) = \dot{Q}_c^{k=1}(67) + \frac{\dot{Q}_c^{k=1}(82) - \dot{Q}_c^{k=1}(67)}{82-67} * (T_j - 67)$$

Equation 4.1.3-2 $$\dot{E}_c^{k=1}(T_j) = \dot{E}_c^{k=1}(67) + \frac{\dot{E}_c^{k=1}(82) - \dot{E}_c^{k=1}(67)}{82-67} * (T_j - 67)$$

where $\dot{Q}_c^{k=1}(82)$ and $\dot{E}_c^{k=1}(82)$ are determined from the B_1 test, $\dot{Q}_c^{k=1}(67)$ and $\dot{E}_c^{k=1}(67)$ are determined from the F_1 test, and all four quantities are calculated as specified in section 3.3 of this appendix. Evaluate the space cooling capacity, $\dot{Q}_c^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=2}(T_j)$, of the test unit when operating at high compressor capacity and outdoor temperature T_j using,

Equation 4.1.3-3 $$\dot{Q}_c^{k=2}(T_j) = \dot{Q}_c^{k=2}(82) + \frac{\dot{Q}_c^{k=2}(95) - \dot{Q}_c^{k=2}(82)}{95-82} * (T_j - 82)$$

Equation 4.1.3-4 $$\dot{E}_c^{k=2}(T_j) = \dot{E}_c^{k=2}(82) + \frac{\dot{E}_c^{k=2}(95) - \dot{E}_c^{k=2}(82)}{95-82} * (T_j - 82)$$

where $\dot{Q}_c^{k=2}(95)$ and $\dot{E}_c^{k=2}(95)$ are determined from the A_2 test, $\dot{Q}_c^{k=2}(82)$, and $\dot{E}_c^{k=2}(82)$, are determined from the B_2 test, and all are calculated as specified in section 3.3 of this appendix.

The calculation of Equation 4.1–1 quantities $q_c(T_j)/N$ and $e_c(T_j)/N$ differs depending on whether the test unit would operate at low capacity (section 4.1.3.1 of this appendix), cycle between low and high capacity (section 4.1.3.2 of this appendix), or operate at high capacity (sections 4.1.3.3 and 4.1.3.4 of this appendix) in responding to the building load. For units that lock out low capacity operation at higher outdoor temperatures, the outdoor temperature at which the unit locks out must be that specified by the manufacturer in the certification report so that the appropriate equations are used. Use Equation 4.1–2 to calculate the building load, $BL(T_j)$, for each temperature bin.

4.1.3.1 Steady-state Space Cooling Capacity at Low Compressor Capacity Is Greater Than or Equal to the Building Cooling Load at Temperature T_j, $\dot{Q}_c^{k=1}(T_j) \geq BL(T_j)$

$$\frac{q_c(T_j)}{N} = X^{k=1}(T_j) * \dot{Q}_c^{k=1}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \frac{X^{k=1}(T_j) * \dot{E}_c^{k=1}(T_j)}{PLF_j} * \frac{n_j}{N}$$

Where:

$X^{k=1}(T_j) = BL(T_j)/\dot{Q}_c^{k=1}(T_j)$, the cooling mode low capacity load factor for temperature bin j, dimensionless.

$PLF_j = 1 - C_D^c \cdot [1 - X^{k=1}(T_j)]$, the part load factor, dimensionless.

n_j/N = fractional bin hours for the cooling season; the ratio of the number of hours during the cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season, dimensionless.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–1 and 4.1.3–2, respectively, to evaluate $\dot{Q}_c^{k=1}(T_j)$ and $\dot{E}_c^{k=1}(T_j)$. Evaluate the cooling mode cyclic degradation factor C_D^c as specified in section 3.5.3 of this appendix.

TABLE 19—DISTRIBUTION OF FRACTIONAL HOURS WITHIN COOLING SEASON TEMPERATURE BINS

Bin number, j	Bin temperature range °F	Representative temperature for bin °F	Fraction of of total temperature bin hours, n_j/N
1	65–69	67	0.214

TABLE 19—DISTRIBUTION OF FRACTIONAL HOURS WITHIN COOLING SEASON TEMPERATURE BINS—Continued

Bin number, j	Bin temperature range °F	Representative temperature for bin °F	Fraction of of total temperature bin hours, n_j/N
2	70–74	72	0.231
3	75–79	77	0.216
4	80–84	82	0.161
5	85–89	87	0.104
6	90–94	92	0.052
7	95–99	97	0.018
8	100–104	102	0.004

4.1.3.2 Unit Alternates Between High (k=2) and Low (k=1) Compressor Capacity to Satisfy the Building Cooling Load at Temperature T_j, $\dot{Q}_c^{k=1}(T_j) < (BL(T_j) < (\dot{Q}_c^{k=2}(T_j)$

$$\frac{q_c(T_j)}{N} = [X^{k=1}(T_j) * \dot{Q}_c^{k=1}(T_j) + X^{k=2}(T_j) * \dot{Q}_c^{k=2}(T_j)] * \frac{n_j}{N}$$

$$\frac{e_c(T_j)}{N} = [X^{k=1}(T_j) * \dot{E}_c^{k=1}(T_j) + X^{k=2}(T_j) * \dot{E}_c^{k=2}(T_j)] * \frac{n_j}{N}$$

Where:

$X^{k=1}(T_j) = \frac{\dot{Q}_c^{k=2}(T_j) - BL(T_j)}{\dot{Q}_c^{k=2}(T_j) - \dot{Q}_c^{k=1}(T_j)}$ the cooling mode, low capacity load factor for temperature bin j, dimensionless.

$X^{k=2}(T_j) = 1 - X^{k=1}(T_j)$, the cooling mode, high capacity load factor for temperature bin j, dimensionless.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–1 and 4.1.3–2, respectively, to evaluate $\dot{Q}_c^{k=1}(T_j)$ and $\dot{E}_c^{k=1}(T_j)$. Use Equations 4.1.3–3 and 4.1.3–4, respectively, to evaluate $\dot{Q}_c^{k=2}(T_j)$ and $\dot{E}_c^{k=2}(T_j)$.

4.1.3.3 Unit Only Operates at High (k=2) Compressor Capacity at Temperature T_j and Its Capacity Is Greater Than the Building Cooling Load, $BL(T_j) < \dot{Q}_c^{k=2}(T_j)$. This section applies to units that lock out low compressor capacity operation at higher outdoor temperatures.

$$\frac{q_c(T_j)}{N} = X^{k=2}(T_j) * \dot{Q}_c^{k=2}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \frac{X^{k=2}(T_j) * \dot{E}_c^{k=2}(T_j)}{PLF_j} * \frac{n_j}{N}$$

Where,

$X^{k=2}(T_j) = BL(T_j)/\dot{Q}_c^{k=2}(T_j)$, the cooling mode high capacity load factor for temperature bin j, dimensionless.

$PLF_j = 1 - C_D^c(k = 2) * [1 - X^{k=2}(T_j)]$, the part load factor, dimensionless.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–3 and 4.1.3–4, respectively, to evaluate $\dot{Q}_c^{k=2}(T_j)$ and $\dot{E}_c^{k=2}(T_j)$. If the C_2 and D_2 tests described in section 3.2.3 and Table 7 of this appendix are not conducted, set C_D^c (k=2) equal to the default value specified in section 3.5.3 of this appendix.

4.1.3.4 Unit Must Operate Continuously at High (k=2) Compressor Capacity at Temperature T_j, $BL(T_j) \geq \dot{Q}_c^{k=2}(T_j)$

$$\frac{q_c(T_j)}{N} = \dot{Q}_c^{k=2}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \dot{E}_c^{k=2}(T_j) * \frac{n_j}{N}$$

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–3 and 4.1.3–4, respectively, to evaluate $\dot{Q}_c^{k=2}(T_j)$ and $\dot{E}_c^{k=2}(T_j)$.

4.1.4 SEER2 Calculations for an Air Conditioner or Heat Pump Having a Variable-Speed Compressor

Calculate SEER2 using Equation 4.1–1. Evaluate the space cooling capacity, $\dot{Q}_c^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=1}(T_j)$, of the test unit when operating at minimum compressor speed and outdoor temperature T_j. Use,

Equation 4.1.4-1 $$\dot{Q}_c^{k=1}(T_j) = \dot{Q}_c^{k=1}(67) + \frac{\dot{Q}_c^{k=1}(82) - \dot{Q}_c^{k=1}(67)}{82-67} * (T_j - 67)$$

Equation 4.1.4-2 $$\dot{E}_c^{k=1}(T_j) = \dot{E}_c^{k=1}(67) + \frac{\dot{E}_c^{k=1}(82) - \dot{E}_c^{k=1}(67)}{82-67} * (T_j - 67)$$

where $\dot{Q}_c^{k=1}(82)$ and $\dot{E}_c^{k=1}(82)$ are determined from the B_1 test, $\dot{Q}_c^{k=1}(67)$ and $\dot{E}_c^{k=1}(67)$ are determined from the F1 test, and all four quantities are calculated as specified in section 3.3 of this appendix. Evaluate the space cooling capacity, $\dot{Q}_c^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=2}(T_j)$, of the test unit when operating at full compressor speed and outdoor temperature T_j. Use Equations 4.1.3–3 and 4.1.3–4, respectively, where $\dot{Q}_c^{k=2}(95)$ and $\dot{E}_c^{k=2}(95)$ are determined from the A_2 test, $\dot{Q}_c^{k=2}(82)$ and $\dot{E}_c^{k=2}(82)$ are determined from the B_2 test, and all four quantities are calculated as specified in section 3.3 of this appendix. Calculate the space cooling capacity, $\dot{Q}_c^{k=v}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=v}(T_j)$, of the test unit when operating at outdoor temperature T_j and the intermediate compressor speed used during the section 3.2.4 (and Table 8) E_V test of this appendix using,

Equation 4.1.4-3 $$\dot{Q}_c^{k=v}(T_j) = \dot{Q}_c^{k=v}(87) + M_Q * (T_j - 87)$$

Equation 4.1.4-4 $$\dot{E}_c^{k=v}(T_j) = \dot{E}_h^{k=v}(87) + M_E * (T_j - 87)$$

where $\dot{Q}_c^{k=v}(87)$ and $\dot{E}_c^{k=v}(87)$ are determined from the E_V test and calculated as specified in section 3.3 of this appendix. Approximate the slopes of the k=v intermediate speed cooling capacity and electrical power input curves, M_Q and M_E, as follows:

$$M_Q = \left[\frac{\dot{Q}_c^{k=1}(82) - \dot{Q}_c^{k=1}(67)}{82-67} * (1 - N_Q)\right] + \left[N_Q * \frac{\dot{Q}_c^{k=2}(95) - \dot{Q}_c^{k=2}(82)}{95-82}\right]$$

$$M_E = \left[\frac{\dot{E}_c^{k=1}(82) - \dot{E}_c^{k=1}(67)}{82-67} * (1 - N_E)\right] + \left[N_E * \frac{\dot{E}_c^{k=2}(95) - \dot{E}_c^{k=2}(82)}{95-82}\right]$$

where,

$$N_Q = \frac{\dot{Q}_c^{k=v}(87) - \dot{Q}_c^{k=1}(87)}{\dot{Q}_c^{k=2}(87) - \dot{Q}_c^{k=1}(87)} \qquad N_E = \frac{\dot{E}_c^{k=v}(87) - \dot{E}_c^{k=1}(87)}{\dot{E}_c^{k=2}(87) - \dot{E}_c^{k=1}(87)}$$

Use Equations 4.1.4–1 and 4.1.4–2, respectively, to calculate $\dot{Q}_c^{k=1}(87)$ and $\dot{E}_c^{k=1}(87)$.

4.1.4.1 Steady-state space cooling capacity when operating at minimum compressor speed is greater than or equal to the building cooling load at temperature T_j, $\dot{Q}_c^{k=1}(T_j) \geq BL(T_j)$.

$$\frac{q_c(T_j)}{N} = X^{k=1}(T_j) * \dot{Q}_c^{k=1}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \frac{X^{k=1}(T_j) * \dot{E}_c^{k=1}(T_j)}{PLF_j} * \frac{n_j}{N}$$

Where:

$X^{k=1}(T_j) = BL(T_j)/\dot{Q}_c^{k=1}(T_j)$, the cooling mode minimum speed load factor for temperature bin j, dimensionless.

$PLF_j = 1 - C_D^c \cdot [1 - X^{k=1}(T_j)]$, the part load factor, dimensionless.

n_j/N = fractional bin hours for the cooling season; the ratio of the number of hours during the cooling season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the cooling season, dimensionless.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19. Use Equations 4.1.3–1 and 4.1.3–2, respectively, to evaluate $\dot{Q}_c^{k=1}(T_j)$ and $\dot{E}_c^{k=1}(T_j)$. Evaluate the cooling mode cyclic degradation factor C_D^c as specified in section 3.5.3 of this appendix.

4.1.4.2 Unit operates at an intermediate compressor speed (k=i) in order to match the building cooling load at temperature T_j, $\dot{Q}_c^{k=1}(T_j) < BL(T_j) < \dot{Q}_c^{k=2}(T_j)$.

$$\frac{q_c(T_j)}{N} = \dot{Q}_c^{k=i}(T_j) * \frac{n_j}{N} \qquad \frac{e_c(T_j)}{N} = \dot{E}_c^{k=i}(T_j) * \frac{n_j}{N}$$

Where:

$\dot{Q}_c^{k=i}(T_j) = BL(T_j)$, the space cooling capacity delivered by the unit in matching the building load at temperature T_j, Btu/h.

The matching occurs with the unit operating at compressor speed k = i.

$$\dot{E}_c^{k=i}(T_j) = \frac{\dot{Q}_c^{k=i}(T_j)}{EER^{k=i}(T_j)}$$ the electrical power input required by the test unit when operating at a compressor speed of k = i and temperature T_j, W.

$EER^{k=i}(T_j)$ = the steady-state energy efficiency ratio of the test unit when operating at a compressor speed of k = i and temperature T_j, Btu/h per W.

Obtain the fractional bin hours for the cooling season, n_j/N, from Table 19 of this section. For each temperature bin where the unit operates at an intermediate compressor speed, determine the energy efficiency ratio $EER^{k=i}(T_j)$ using the following equations,

For each temperature bin where $\dot{Q}_c^{k=1}(T_j) < BL(T_j) < \dot{Q}_c^{k=v}(T_j)$,

$$EER^{k=i}(T_j) = EER^{k=1}(T_j) + \frac{EER^{k=v}(T_j) - EER^{k=1}(T_j)}{Q^{k=v}(T_j) - Q^{k=1}(T_j)} * (BL(T_j) - Q^{k=1}(T_j))$$

For each temperature bin where $\dot{Q}_c^{k=v}(T_j) \leq BL(T_j) < \dot{Q}_c^{k=2}(T_j)$,

$$EER^{k=i}(T_j) = EER^{k=v}(T_j) + \frac{EER^{k=2}(T_j) - EER^{k=v}(T_j)}{Q^{k=2}(T_j) - Q^{k=v}(T_j)} * (BL(T_j) - Q^{k=v}(T_j))$$

Where:

$EER^{k=1}(T_j)$ is the steady-state energy efficiency ratio of the test unit when operating at minimum compressor speed and temperature Tj, Btu/h per W, calculated using capacity $\dot{Q}_c^{k=1}(T_j)$ calculated using Equation 4.1.4–1 and electrical power consumption $\dot{E}_c^{k=1}(T_j)$ calculated using Equation 4.1.4–2;

$EER^{k=v}(T_j)$ is the steady-state energy efficiency ratio of the test unit when operating at intermediate compressor speed and temperature Tj, Btu/h per W, calculated using capacity $\dot{Q}_c^{k=v}(T_j)$ calculated using Equation 4.1.4–3 and electrical power consumption $\dot{E}_c^{k=v}(T_j)$ calculated using Equation 4.1.4–4;

$EER2^{k=2}(T_j)$ is the steady-state energy efficiency ratio of the test unit when operating at full compressor speed and temperature Tj, Btu/h per W, calculated using capacity $\dot{Q}_c^{k=2}(T_j)$ and electrical power consumption $\dot{E}_c^{k=2}(T_j)$, both calculated as described in section 4.1.4; and

$BL(T_j)$ is the building cooling load at temperature T_j, Btu/h.

4.1.4.3 Unit must operate continuously at full (k=2) compressor speed at temperature Tj, $BL(T_j) \geq \dot{Q}_c^{k=2}(T_j)$. Evaluate the Equation 4.1–1 quantities

$$\frac{q_c(T_j)}{N} \text{ and } \frac{e_c(T_j)}{N}$$

as specified in section 4.1.3.4 of this appendix with the understanding that $\dot{Q}_c^{k=2}(T_j)$ and $\dot{E}_c^{k=2}(T_j)$ correspond to full compressor speed operation and are derived from the results of the tests specified in section 3.2.4 of this appendix.

4.1.5 SEER2 Calculations for an Air Conditioner or Heat Pump Having a Single Indoor Unit With Multiple Indoor Blowers

Calculate SEER2 using Eq. 4.1–1, where $q_c(Tj)/N$ and $e_c(Tj)/N$ are evaluated as specified in the applicable subsection.

4.1.5.1 For Multiple Indoor Blower Systems That Are Connected to a Single, Single-Speed Outdoor Unit

a. Calculate the space cooling capacity, $\dot{Q}_c^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=1}(T_j)$, of the test unit when operating at the cooling minimum air volume rate and outdoor temperature T_j using the equations given in section 4.1.2.1 of this appendix. Calculate the space cooling capacity, $\dot{Q}_c^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_c^{k=2}(T_j)$, of the test unit when operating at the cooling full-load air volume rate and outdoor temperature T_j using the equations given in section 4.1.2.1 of this appendix. In evaluating the section 4.1.2.1 equations, determine the quantities $\dot{Q}_c^{k=1}(82)$ and $\dot{E}_c^{k=1}(82)$ from the B1 test, $\dot{Q}_c^{k=1}(95)$ and $\dot{E}_c^{k=1}(95)$ from the Al test, $\dot{Q}_c^{k=2}(82)$ and $\dot{E}_c^{k=2}(82)$ from the B2 test, and $\dot{Q}_c^{k=2}(95)$ and $\dot{E}_c^{k=2}(95)$ from the A_2 test. Evaluate all eight quantities as specified in section 3.3. Refer to section 3.2.2.1 and Table 6 for additional information on the four referenced laboratory tests.

b. Determine the cooling mode cyclic degradation coefficient, C_D^c, as per sections 3.2.2.1 and 3.5 to 3.5.3 of this appendix. Assign this same value to $C_D^c(K=2)$.

c. Except for using the above values of $\dot{Q}_c^{k=1}(T_j)$, $\dot{E}_c^{k=1}(T_j)$, $\dot{E}_c^{k=2}(T_j)$, $\dot{Q}_c^{k=2}(T_j)$, C_D^c, and C_D^c (K=2), calculate the quantities $q_c(T_j)/N$ and $e_c(T_j)/N$ as specified in section 4.1.3.1 of this appendix for cases where $\dot{Q}_c^{k=1}(T_j) \geq BL(T_j)$. For all other outdoor bin temperatures, T_j, calculate $q_c(Tj)/N$ and $e_c(Tj)/N$ as specified in section 4.1.3.3 of this appendix if $\dot{Q}_c^{k=2}(T_j) > BL(T_j)$ or as specified in section 4.1.3.4 of this appendix if $\dot{Q}_c^{k=2}(T_j) \leq BL(T_j)$.

4.1.5.2 For Multiple Indoor Blower Systems That Are Connected to Either a Lone Outdoor Unit Having a Two-Capacity Compressor or Two Separate But Identical Model Single-Speed Outdoor Units. Calculate the Quantities $q_c(Tj)/N$ and $e_c(Tj)/N$ as Specified in Section 4.1.3 of This Appendix

4.2 Heating Seasonal Performance Factor 2 (HSPF2) Calculations

Unless an approved alternative efficiency determination method is used, as set forth in 10 CFR 429.70(e). Calculate HSPF2 as follows: Six generalized climatic regions are depicted in Figure 1 and otherwise defined in Table 20. For each of these regions and for each applicable standardized design heating requirement, evaluate the heating seasonal performance factor using,

Equation 4.2-1 $$HSPF2 = \frac{\sum_j^J n_j * BL(T_j)}{\sum_j^J e_h(T_j) + \sum_j^J RH(T_j)} * F_{def} = \frac{\sum_j^J \left[\frac{n_j}{N} * BL(T_j)\right]}{\sum_j^J \frac{e_h(T_j)}{N} + \sum_j^J \frac{RH(T_j)}{N}} * F_{def}$$

Where:

$e_h(T_j)/N$ = The ratio of the electrical energy consumed by the heat pump during periods of the heating season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the heating season (N), W. For heat pumps having a heat comfort controller, this ratio may also include electrical energy used by resistive elements to maintain a minimum air delivery temperature (see 4.2.5).

$RH(T_j)/N$ = The ratio of the electrical energy used for resistive space heating during periods when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the heating season (N), W. Except as noted in section 4.2.5 of this appendix, resistive space heating is modeled as being used to meet that portion of the building load that the heat pump does not meet because of insufficient capacity or because the heat pump automatically turns off at the lowest outdoor temperatures. For heat pumps having a heat comfort controller, all or part of the electrical energy used by resistive heaters at a particular bin temperature may be reflected in $e_h(T_j)/N$ (see section 4.2.5 of this appendix).

T_j = the outdoor bin temperature, °F. Outdoor temperatures are ''binned'' such that calculations are only performed based one temperature within the bin. Bins of 5 °F are used.

n_j/N = Fractional bin hours for the heating season; the ratio of the number of hours during the heating season when the outdoor temperature fell within the range represented by bin temperature T_j to the total number of hours in the heating season, dimensionless. Obtain n_j/N values from Table 20.

j = the bin number, dimensionless.

J = for each generalized climatic region, the total number of temperature bins, dimensionless. Referring to Table 20, J is the highest bin number (j) having a nonzero entry for the fractional bin hours for the generalized climatic region of interest.

F_{def} = the demand defrost credit described in section 3.9.2 of this appendix, dimensionless.

$BL(T_j)$ = the building space conditioning load corresponding to an outdoor temperature of T_j; the heating season building load also depends on the generalized climatic region's outdoor design temperature and the design heating requirement, Btu/h.

TABLE 20—GENERALIZED CLIMATIC REGION INFORMATION

Region Number	I	II	III	IV	V	* VI
Heating Load Hours, HLH	493	857	1247	1701	2202	1842
Outdoor Design Temperature, T_{OD}	37	27	17	5	−10	30
Heating Load Line Equation Slope Factor, C	1.10	1.06	1.30	1.15	1.16	1.11
Variable-speed Slope Factor, C_{VS}	1.03	0.99	1.21	1.07	1.08	1.03
Zero-Load Temperature, T_{zl}	58	57	56	55	55	57
j T_j (°F)	Fractional Bin Hours, n_j/N					
1 62	0	0	0	0	0	0
2 57	.239	0	0	0	0	0
3 52	.194	.163	.138	.103	.086	.215
4 47	.129	.143	.137	.093	.076	.204
5 42	.081	.112	.135	.100	.078	.141
6 37	.041	.088	.118	.109	.087	.076
7 32	.019	.056	.092	.126	.102	.034
8 27	.005	.024	.047	.087	.094	.008
9 22	.001	.008	.021	.055	.074	.003
10 17	0	.002	.009	.036	.055	0
11 12	0	0	.005	.026	.047	0
12 7	0	0	.002	.013	.038	0
13 2	0	0	.001	.006	.029	0
14 −3	0	0	0	.002	.018	0
15 −8	0	0	0	.001	.010	0
16 −13	0	0	0	0	.005	0
17 −18	0	0	0	0	.002	0
18 −23	0	0	0	0	.001	0

* Pacific Coast Region.

Evaluate the building heating load using

$$\text{Equation 4.2-2} \qquad BL(T_j) = \frac{(T_{zl} - T_j)}{T_{zl} - 5°F} * C * \dot{Q}_c(95°F)$$

where,

T_j = the outdoor bin temperature, °F

T_{zl} = the zero-load temperature, °F, which varies by climate region according to Table 20

C = the slope (adjustment) factor, which varies by climate region according to Table 20

$\dot{Q}_c(95°F)$ = the cooling capacity at 95 °F determined from the A or A_2 test, Btu/h

For heating-only heat pump units, replace $\dot{Q}_c(95°F)$ in Equation 4.2–2 with $\dot{Q}_h(47°F)$

$\dot{Q}_h(47°F)$= the heating capacity at 47 °F determined from the H, $H1_2$ or $H1_N$ test, Btu/h.

a. For all heat pumps, HSPF2 accounts for the heating delivered and the energy consumed by auxiliary resistive elements when operating below the balance point. This condition occurs when the building load exceeds the space heating capacity of the heat pump condenser. For HSPF2 calculations for all heat pumps, see either section 4.2.1, 4.2.2, 4.2.3, or 4.2.4 of this appendix, whichever applies.

b. For heat pumps with heat comfort controllers (see section 1.2 of this appendix, Definitions), HSPF2 also accounts for

resistive heating contributed when operating above the heat-pump-plus-comfort-controller balance point as a result of maintaining a minimum supply temperature. For heat pumps having a heat comfort controller, see section 4.2.5 of this appendix for the additional steps required for calculating the HSPF2.

4.2.1 Additional Steps for Calculating the HSPF2 of a Blower Coil System Heat Pump Having a Single-Speed Compressor and Either a Fixed-Speed Indoor Blower or a Constant-Air-Volume-Rate Indoor Blower, or a Single-Speed Coil-Only System Heat Pump

Equation 4.2.1-1

$$\frac{e_h(T_j)}{N} = \frac{X(T_j)*\dot{E}_h(T_j)*\delta(T_j)}{PLF_j} * \frac{n_j}{N}$$

Equation 4.2.1-2

$$\frac{RH(T_j)}{N} = \frac{BL(T_j)-[X(T_j)*\dot{Q}_h(T_j)*\delta(T_j)]}{3.413\frac{Btu/h}{W}} * \frac{n_j}{N}$$

Where:

$$X(T_j) = \begin{Bmatrix} BL(T_j)/\dot{Q}_h(T_j) \\ or \\ 1 \end{Bmatrix}$$

whichever is less; the heating mode load factor for temperature bin j, dimensionless.

$\dot{Q}_h(T_j)$ = the space heating capacity of the heat pump when operating at outdoor temperature T_j, Btu/h.

$\dot{E}_h(T_j)$ = the electrical power consumption of the heat pump when operating at outdoor temperature T_j, W.

$\delta(T_j)$ = the heat pump low temperature cut-out factor, dimensionless.

$PLF_j = 1 - \dot{C}_D{}^h \cdot [1 - X(T_j)]$ the part load factor, dimensionless.

Use Equation 4.2–2 to determine $BL(T_j)$. Obtain fractional bin hours for the heating season, n_j/N, from Table 20. Evaluate the heating mode cyclic degradation factor $C_D{}^h$ as specified in section 3.8.1 of this appendix.

Determine the low temperature cut-out factor using

Equation 4.2.1-3

$$\delta(T_j) = \begin{Bmatrix} 0, if\ T_j \le T_{off}\ or\ \frac{\dot{Q}_h(T_j)}{3.413*\dot{E}_h(T_j)} < 1 \\ 1/2\,, if\ T_{off} < T_j \le T_{on}\ and\ \frac{\dot{Q}_h(T_j)}{3.413*\dot{E}_h(T_j)} \ge 1 \\ 1, if\ T_j > T_{on}\ and\ \frac{\dot{Q}_h(T_j)}{3.413*\dot{E}_h(T_j)} \ge 1 \end{Bmatrix}$$

Where:

T_{off} = the outdoor temperature when the compressor is automatically shut off, °F.

(If no such temperature exists, T_j is always greater than T_{off} and T_{on}).

T_{on} = the outdoor temperature when the compressor is automatically turned back on, if applicable, following an automatic shut-off, °F.

If the H4 test is not conducted, calculate $Q_h(T_j)$ and $E_h(T_j)$ using

Equation 4.2.1-4

$$\dot{Q}_h(T_j) = \begin{cases} \dot{Q}_h(17) + \frac{[\dot{Q}_h(47)-\dot{Q}_h(17)]*(T_j-17)}{47-17}, & if\ T_j \ \ge 45\ °F\ or\ T_j \ \le 17\ °F \\ \dot{Q}_h(17) + \frac{[\dot{Q}_h(35)-\dot{Q}_h(17)]*(T_j-17)}{35-17}, & if\ 17\ °F < \ T_j < 45\ °F \end{cases}$$

Equation 4.2.1-5

$$\dot{E}_h(T_j) \quad = \begin{cases} \dot{E}_h(17) + \frac{\left[\dot{E}_h(47) - \dot{E}_h(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \ \ge 45\ °F\ or\ T_j \ \le 17\ °F \\ \dot{E}_h(17) + \frac{\left[\dot{E}_h(35) - \dot{E}_h(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °F < \ T_j < 45\ °F \end{cases}$$

where $\dot{Q}_h(47)$ and $\dot{E}_h(47)$ are determined from the H1 test and calculated as specified in section 3.7 of this appendix; $\dot{Q}_h(35)$ and $\dot{E}_h(35)$ are determined from the H2 test and calculated as specified in section 3.9.1 of this appendix; and $\dot{Q}_h(17)$ and

$\dot{E}_h(17)$ are determined from the H3 test and calculated as specified in section 3.10 of this appendix.

If the H4 test is conducted, calculate $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ using

Equation 4.2.1-6

$$\dot{Q}_h\left(T_j\right) = \begin{cases} \dot{Q}_h(17) + \dfrac{\left[\dot{Q}_h(47) - \dot{Q}_h(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\mathrm{F} \\ \dot{Q}_h(17) + \dfrac{\left[\dot{Q}_h(35) - \dot{Q}_h(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\mathrm{F} \leq T_j < 45\ °\mathrm{F} \\ \dot{Q}_h(5) + \dfrac{\left[\dot{Q}_h(17) - \dot{Q}_h(5)\right] * (T_j - 5)}{17 - 5}, & if\ T_j < 17\ °\mathrm{F} \end{cases}$$

Equation 4.2.1-7

$$\dot{E}_h\left(T_j\right) = \begin{cases} \dot{E}_h(17) + \dfrac{\left[\dot{E}_h(47) - \dot{E}_h(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\mathrm{F} \\ \dot{E}_h(17) + \dfrac{\left[\dot{E}_h(35) - \dot{E}_h(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\mathrm{F} \leq T_j < 45\ °\mathrm{F} \\ \dot{E}_h(5) + \dfrac{\left[\dot{E}_h(17) - \dot{E}_h(5)\right] * (T_j - 5)}{17 - 5}, & if\ T_j < 17\ °\mathrm{F} \end{cases}$$

where $\dot{Q}_h(47)$ and $\dot{E}_h(47)$ are determined from the H1 test and calculated as specified in section 3.7 of this appendix; $\dot{Q}_h(35)$ and $\dot{E}_h(35)$ are determined from the H2 test and calculated as specified in section 3.9.1 of this appendix; $\dot{Q}_h(17)$ and $\dot{E}_h(17)$ are determined from the H3 test and calculated as specified in section 3.10 of this appendix; $\dot{Q}_h(5)$ and $\dot{E}_h(5)$ are determined from the H4 test and calculated as specified in section 3.10 of this appendix.

4.2.2 Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Single-Speed Compressor and a Variable-Speed, Variable-Air-Volume-Rate Indoor Blower

The manufacturer must provide information about how the indoor air volume rate or the indoor blower speed varies over the outdoor temperature range of 65 °F to −23 °F. Calculate the quantities

$$\frac{e_h(T_j)}{N} \text{ and } \frac{RH(T_j)}{N}$$

in Equation 4.2–1 as specified in section 4.2.1 of this appendix with the exception of replacing references to the H1C test and section 3.6.1 of this appendix with the $H1C_1$ test and section 3.6.2 of this appendix. In addition, evaluate the space heating capacity and electrical power consumption of the heat pump $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ using

Equation 4.2.2-1 $$\dot{Q}_h\left(T_j\right) = \dot{Q}_h^{k=1}\left(T_j\right) + \frac{\dot{Q}_h^{k=2}(T_j) - \dot{Q}_h^{k=1}(T_j)}{\mathrm{FP}_h^{k=2} - \mathrm{FP}_h^{k=1}} * \left[\mathrm{FP}_h\left(T_j\right) - \mathrm{FP}_h^{k=1}\right]$$

Equation 4.2.2-2 $$\dot{E}_h\left(T_j\right) = \dot{E}_h^{k=1}\left(T_j\right) + \frac{\dot{E}_h^{k=2}(T_j) - \dot{E}_h^{k=1}(T_j)}{\mathrm{FP}_h^{k=2} - \mathrm{FP}_h^{k=1}} * \left[\mathrm{FP}_h\left(T_j\right) - \mathrm{FP}_h^{k=1}\right]$$

where the space heating capacity and electrical power consumption at low capacity (k=1) at outdoor temperature Tj are determined using

Equation 4.2.2-3

$$\dot{Q}_h^k(T_j) = \begin{cases} \dot{Q}_h^k(17) + \frac{\left[\dot{Q}_h^k(47) - \dot{Q}_h^k(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\text{F}\ or\ T_j \leq 17\ °\text{F} \\ \dot{Q}_h^k(17) + \frac{\left[\dot{Q}_h^k(35) - \dot{Q}_h^k(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\text{F} < T_j < 45\ °\text{F} \end{cases}$$

Equation 4.2.2-4

$$\dot{E}_h^k(T_j) = \begin{cases} \dot{E}_h^k(17) + \frac{\left[\dot{E}_h^k(47) - \dot{E}_h^k(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\text{F}\ or\ T_j \leq 17\ °\text{F} \\ \dot{E}_h^k(17) + \frac{\left[\dot{E}_h^k(35) - \dot{E}_h^k(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\text{F} < T_j < 45\ °\text{F} \end{cases}$$

If the $H4_2$ test is not conducted, calculate the space heating capacity and electrical power consumption at high capacity (k=2) at outdoor temperature Tj using Equations 4.2.2–3 and 4.2.2–4 for k=2.

If the $H4_2$ test is conducted, calculate the space heating capacity and electrical power consumption at high capacity (k=2) at outdoor temperature Tj using Equations 4.2.2–5 and 4.2.2–6.

Equation 4.2.2-5

$$\dot{Q}_h^{k=2}(T_j) = \begin{cases} \dot{Q}_h^{k=2}(17) + \frac{\left[\dot{Q}_h^{k=2}(47) - \dot{Q}_h^{k=2}(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\text{F} \\ \dot{Q}_h^{k=2}(17) + \frac{\left[\dot{Q}_h^{k=2}(35) - \dot{Q}_h^{k=2}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\text{F} \leq T_j < 45\ °\text{F} \\ \dot{Q}_h^{k=2}(5) + \frac{\left[\dot{Q}_h^{k=2}(17) - \dot{Q}_h^{k=2}(5)\right] * (T_j - 5)}{17 - 5}, & if\ T_j < 17\ °\text{F} \end{cases}$$

Equation 4.2.2-6

$$\dot{E}_h^{k=2}(T_j) = \begin{cases} \dot{E}_h^{k=2}(17) + \frac{\left[\dot{E}_h^{k=2}(47) - \dot{E}_h^{k=2}(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j \geq 45\ °\text{F} \\ \dot{E}_h^{k=2}(17) + \frac{\left[\dot{E}_h^{k=2}(35) - \dot{E}_h^{k=2}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\text{F} \leq T_j < 45\ °\text{F} \\ \dot{E}_h^{k=2}(5) + \frac{\left[\dot{E}_h^{k=2}(17) - \dot{E}_h^{k=2}(5)\right] * (T_j - 5)}{17 - 5}, & if\ T_j < 17\ °\text{F} \end{cases}$$

For units where indoor blower speed is the primary control variable, $FP_h^{k=1}$ denotes the fan speed used during the required $H1_1$ and $H3_1$ tests (see Table 12), $FP_h^{k=2}$ denotes the fan speed used during the required $H1_2$, $H2_2$, and $H3_2$ tests, and $FP_h(T_j)$ denotes the fan speed used by the unit when the outdoor temperature equals T_j. For units where indoor air volume rate is the primary control variable, the three FP_h's are similarly defined only now being expressed in terms of air volume rates rather than fan speeds. Determine $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test, and $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test. Calculate all four quantities as specified in section 3.7 of this appendix. Determine $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ as specified in section 3.6.2 of this appendix; determine $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ and from the $H2_2$ test and the calculation specified in section 3.9 of this appendix. Determine $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17$ from the $H3_1$ test, and $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test. Calculate all four quantities as specified in section 3.10 of this appendix. Determine $\dot{Q}_h^{k=2}(5)$ and $\dot{E}_h^{k=2}(5)$ from the $H4_2$ test and the calculation specified in section 3.10 of this appendix.

4.2.3 Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Two-Capacity Compressor

The calculation of the Equation 4.2–1 quantities differ depending upon whether the heat pump would operate at low capacity (section 4.2.3.1 of this appendix), cycle between low and high capacity (section 4.2.3.2 of this appendix), or operate at high capacity (sections 4.2.3.3 and 4.2.3.4 of this appendix) in responding to the building load. For heat pumps that lock out low capacity operation at low outdoor temperatures, the outdoor temperature at which the unit locks out must be that specified by the manufacturer in the certification report so that the appropriate equations can be selected.

$$\frac{e_h(T_j)}{N} \text{ and } \frac{RH(T_j)}{N}$$

a. Evaluate the space heating capacity and electrical power consumption of the heat pump when operating at low compressor capacity and outdoor temperature T_j using

$$\dot{Q}_h^{k=1}(T_j) = \begin{cases} \dot{Q}_h^{k=1}(47) + \dfrac{\left[\dot{Q}_h^{k=1}(62) - \dot{Q}_h^{k=1}(47)\right] * (T_j - 47)}{62 - 47}, & if\ T_j \geq 40\ °F \\ \dot{Q}_h^{k=1}(17) + \dfrac{\left[\dot{Q}_h^{k=1}(35) - \dot{Q}_h^{k=1}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °F \leq T_j < 40\ °F \\ \dot{Q}_h^{k=1}(17) + \dfrac{\left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=1}(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j < 17\ °F \end{cases}$$

$$\dot{E}_h^{k=1}(T_j) = \begin{cases} \dot{E}_h^{k=1}(47) + \dfrac{\left[\dot{E}_h^{k=1}(62) - \dot{E}_h^{k=1}(47)\right] * (T_j - 47)}{62 - 47}, & if\ T_j \geq 40\ °F \\ \dot{E}_h^{k=1}(17) + \dfrac{\left[\dot{E}_h^{k=1}(35) - \dot{E}_h^{k=1}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °F \leq T_j < 40\ °F \\ \dot{E}_h^{k=1}(17) + \dfrac{\left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=1}(17)\right] * (T_j - 17)}{47 - 17}, & if\ T_j < 17\ °F \end{cases}$$

b. If the $H4_2$ test is not conducted, evaluate the space heating capacity and electrical power consumption ($\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$) of the heat pump when operating at high compressor capacity and outdoor temperature Tj by solving Equations 4.2.2–3 and 4.2.2–4, respectively, for k=2. If the $H4_2$ test is conducted, evaluate the space heating capacity and electrical power consumption ($\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$) of the heat pump when operating at high compressor capacity and outdoor temperature Tj using Equations 4.2.2–5 and 4.2.2–6, respectively.

Determine $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test, and $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test. Calculate all six quantities as specified in section 3.7 of this appendix. Determine $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$ test and, if required as described in section 3.6.3 of this appendix, determine $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ from the $H2_1$ test. Calculate the required 35 °F quantities as specified in section 3.9 in this appendix. Determine $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test and, if required as described in section 3.6.3 of this appendix, determine $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ from the $H3_1$ test. Calculate the required 17 °F quantities as specified in section 3.10 of this appendix. Determine $\dot{Q}_h^{k=2}(5)$ and $\dot{E}_h^{k=2}(5)$ from the $H4_2$ test and the calculation specified in section 3.10 of this appendix.

4.2.3.1 Steady-State Space Heating Capacity When Operating at Low Compressor Capacity Is Greater Than or Equal to the Building Heating Load at Temperature T_j, $\dot{Q}_h^{k=1}(T_j) \geq BL(T_j)$

Equation 4.2.3-1 $$\frac{e_h(T_j)}{N} = \frac{X^{k=1}(T_j) * \dot{E}_h^{k=1}(T_j) * \delta(T_j)}{PLF_j} * \frac{n_j}{N}$$

Equation 4.2.3-2 $$\frac{RH(T_j)}{N} = \frac{BL(T_j) * [1 - \delta(T_j)]}{3.413 \frac{Btu/h}{W}} * \frac{n_j}{N}$$

Where:

$X^{k=1}(T_j) = BL(T_j)/\dot{Q}_h^{k=1}(T_j)$, the heating mode low capacity load factor for temperature bin *j*, dimensionless.

$PLF_j = 1 - C_D^h \cdot [\ 1 - X^{k=1}(T_j)\ ]$, the part load factor, dimensionless.

$\delta'(T_j)$ = the low temperature cutoff factor, dimensionless.

Evaluate the heating mode cyclic degradation factor C_D^h as specified in section 3.8.1 of this appendix.

Determine the low temperature cut-out factor using

Equation 4.2.3-3 $$\delta(T_j) = \begin{cases} 0, & if\ T_j \leq T_{off} \\ 1/2, & if\ T_{off} < T_j \leq T_{on} \\ 1, & if\ T_j > T_{on} \end{cases}$$

where T_{off} and T_{on} are defined in section 4.2.1 of this appendix. Use the calculations given in section 4.2.3.3 of this appendix, and not the above, if:

a. The heat pump locks out low capacity operation at low outdoor temperatures and

b. T_j is below this lockout threshold temperature.

4.2.3.2 Heat Pump Alternates Between High (k=2) and Low (k=1) Compressor Capacity To Satisfy the Building Heating Load at a Temperature T_j, $\dot{Q}_h^{k=1}(T_j)$ $BL(T_j)$ $\dot{Q}_h^{k=2}(T_j)$

Calculate $\frac{RH(T_j)}{N}$ using Equation 4.2.3-2. Evaluate $\frac{e_h(T_j)}{N}$ using

$$\frac{e_h(T_j)}{N} = [X^{k=1}(T_j) * \dot{E}_h^{k=1}(T_j) + X^{k=2}(T_j) * \dot{E}_h^{k=2}(T_j)] * \delta(T_j) * \frac{n_j}{N}$$

where:

$$X^{k=1}(T_j) = \frac{\dot{Q}_h^{k=2}(T_j) - BL(T_j)}{\dot{Q}_h^{k=2}(T_j) - \dot{Q}_h^{k=1}(T_j)}$$

$X^{k=2}(T_j) = 1 - X^{k=1}(T_j)$ the heating mode, high capacity load factor for temperature bin $_j$, dimensionless.

Determine the low temperature cut-out factor, $\delta'(T_j)$, using Equation 4.2.3–3.

4.2.3.3 Heat Pump Only Operates at High (k=2) Compressor Capacity at Temperature T_j and its Capacity Is Greater Than the Building Heating Load, $BL(T_j) < \dot{Q}_h^{k=2}(T_j)$. This Section Applies to Units That Lock Out Low Compressor Capacity Operation at Low Outdoor Temperatures

Calculate $\frac{RH(T_j)}{N}$ using Equation 4.2.3-2. Evaluate $\frac{e_h(T_j)}{N}$ using

$$\frac{e_h(T_j)}{N} = \frac{X^{k=2}(T_j) * \dot{E}_h^{k=2}(T_j) * \delta(T_j)}{PLF_j} * \frac{n_j}{N}$$

where:

$X^{k=2}(T_j) = BL(T_j)/\dot{Q}_h^{k=2}(T_j)$. $PLF_j = 1 - C^h_D(k = 2) * [1 - X^{k=2}(T_j)]$

If the $H1C_2$ test described in section 3.6.3 and Table 13 of this appendix is not conducted, set C_D^h (k=2) equal to the default value specified in section 3.8.1 of this appendix.

Determine the low temperature cut-out factor, $\delta(T_j)$, using Equation 4.2.3–3.

4.2.3.4 Heat Pump Must Operate Continuously at High (k=2) Compressor Capacity at Temperature T_j, $BL(T_j) \geq Q_h^{k=2}(T_j)$

$$\frac{e_h(T_j)}{N} = \dot{E}_h^{k=2}(T_j) * \delta'(T_j) * \frac{n_j}{N} \qquad \frac{RH(T_j)}{N} = \frac{BL(T_j) * [\dot{Q}_h^{k=2}(T_j) * \delta'(T_j)]}{3.413 \frac{Btu/h}{W}} * \frac{n_j}{N}$$

where:

$$\delta'(T_j) = \begin{cases} 0, & if\ T_j \leq T_{off}\ or\ \frac{\dot{Q}_h^{k=2}(T_j)}{3.413 * \dot{E}_h^{k=2}(T_j)} < 1 \\ 1/2, & if\ T_{off} < T_j \leq T_{on}\ and\ \frac{\dot{Q}_h^{k=2}(T_j)}{3.413 * \dot{E}_h^{k=2}(T_j)} \geq 1 \\ 1, & if\ T_j > T_{on}\ and\ \frac{\dot{Q}_h^{k=2}(T_j)}{3.413 * \dot{E}_h^{k=2}(T_j)} \geq 1 \end{cases}$$

4.2.4 Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Variable-Speed Compressor. Calculate HSPF2 Using Equation 4.2–1

The calculation of Equation 4.2-1 quantities $\frac{RH(T_j)}{N}$ and $\frac{e_h(T_j)}{N}$ differs depending upon whether the heat pump would operate at minimum speed (section 4.2.4.1 of this appendix), operate at an intermediate speed (section 4.2.4.2 of this appendix), or operate at full speed (section 4.2.4.3 of this appendix) in responding to the building load.

a. Minimum Compressor Speed. Evaluate the space heating capacity, $\dot{Q}_h^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=1}(T_j)$, of the heat pump when operating at minimum compressor speed and outdoor temperature T_j using

Equation 4.2.4-1 $$\dot{Q}_h^{k=1}(T_j) = \dot{Q}_h^{k=1}(47) + \frac{\dot{Q}_h^{k=1}(62) - \dot{Q}_h^{k=1}(47)}{62-47} * (T_j - 47)$$

Equation 4.2.4-2 $$\dot{E}_h^{k=1}(T_j) = \dot{E}_h^{k=1}(47) + \frac{\dot{E}_h^{k=1}(62) - \dot{E}_h^{k=1}(47)}{62-47} * (T_j - 47)$$

where $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ are determined from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ are determined from the $H1_1$ test, and all four quantities are calculated as specified in section 3.7 of this appendix.

b. Minimum Compressor Speed for Minimum-speed-limiting Variable-speed Heat Pumps: Evaluate the space heating capacity, $\dot{Q}_h^{k=1}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=1}(T_j)$, of the heat pump when operating at minimum compressor speed and outdoor temperature T_j using Equation 4.2.4–3

Equation 4.2.4-3

$$\dot{Q}_h^{k=1}(T_j) = \begin{cases} \dot{Q}_h^{k=1}(47) + \dfrac{\left[\dot{Q}_h^{k=1}(62) - \dot{Q}_h^{k=1}(47)\right] * (T_j - 47)}{62-47}, & if\ T_j \geq 47\ °F \\ \dot{Q}_h^{k=v}(35) + \dfrac{\left[\dot{Q}_h^{k=1}(47) - \dot{Q}_h^{k=v}(35)\right] * (T_j - 35)}{47-35}, & if\ 35\ °F \leq T_j < 47\ °F \\ \dot{Q}_h^{k=v}(T_j), & if\ T_j < 35\ °F \end{cases}$$

Equation 4.2.4-4

$$\dot{E}_h^{k=1}(T_j) = \begin{cases} \dot{E}_h^{k=1}(47) + \dfrac{\left[\dot{E}_h^{k=1}(62) - \dot{E}_h^{k=1}(47)\right] * (T_j - 47)}{62-47}, & if\ T_j \geq 47\ °F \\ \dot{E}_h^{k=v}(35) + \dfrac{\left[\dot{E}_h^{k=1}(47) - \dot{E}_h^{k=v}(35)\right] * (T_j - 35)}{47-35}, & if\ 35\ °F \leq T_j < 47\ °F \\ \dot{E}_h^{k=v}(T_j), & if\ T_j < 35\ °F \end{cases}$$

where $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ are determined from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ are determined from the $H1_1$ test, and all four quantities are calculated as specified in section 3.7 of this appendix; $\dot{Q}_h^{k=v}(35)$ and $\dot{E}_h^{k=v}(35)$ are determined from the $H2_v$ test and are calculated as specified in section 3.9 of this appendix; and $\dot{Q}_h^{k=v}(T_j)$ and $\dot{E}_h^{k=v}(T_j)$ are calculated using equations 4.2.4–5 and 4.2.4–6, respectively.

c. Full Compressor Speed for Heat Pumps for which the $H4_2$ test is not Conducted. Evaluate the space heating capacity, $\dot{Q}_h^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=2}(T_j)$, of the heat pump when operating at full compressor speed and outdoor temperature T_j by solving Equations 4.2.2–3 and 4.2.2–4, respectively, for k=2, using $\dot{Q}_{hcalc}^{k=2}(47)$ to represent $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ to represent $\dot{E}_h^{k=2}(47)$ (see section 3.6.4.b of this appendix regarding determination of the capacity and power input used in the HSPF2 calculations to represent the $H1_2$ Test). Determine $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$ test and the calculations specified in section 3.9 or, if the $H2_2$ test is not conducted, by conducting the calculations specified in section 3.6.4. Determine $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test and the methods specified in section 3.10 of this appendix.

d. Full Compressor Speed for Heat Pumps for which the $H4_2$ test is Conducted. For T_j above 17 °F, evaluate the space heating capacity, $\dot{Q}_h^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=2}(T_j)$, of the heat pump when operating at full compressor speed as described above for heat pumps for which the $H4_2$ is not conducted. For T_j between 5 °F and 17 °F, evaluate the space heating capacity, $\dot{Q}_h^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=2}(T_j)$, of the heat pump

when operating at full compressor speed using the following equations:

$$\dot{Q}_h^{k=2}(T_j) = \dot{Q}_h^{k=2}(5) + \frac{\dot{Q}_h^{k=2}(17) - \dot{Q}_h^{k=2}(5)}{17-5} * (T_j - 5)$$

$$\dot{E}_h^{k=2}(T_j) = \dot{E}_h^{k=2}(5) + \frac{\dot{E}_h^{k=2}(17) - \dot{E}_h^{k=2}(5)}{17-5} * (T_j - 5)$$

Determine $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test, and $\dot{Q}_h^{k=2}(5)$ and $\dot{E}_h^{k=2}(5)$ from the $H4_2$ test, using the methods specified in section 3.10 of this appendix for all four values. For T_j below 5 °F, evaluate the space heating capacity, $\dot{Q}_h^{k=2}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=2}(T_j)$, of the heat pump when operating at full compressor speed using the following equations:

$$\dot{Q}_h^{k=2}(T_j) = \dot{Q}_h^{k=2}(5) - \frac{\dot{Q}_{hcalc}^{k=2}(47) - \dot{Q}_h^{k=2}(17)}{47-17} * (5 - T_j)$$

$$\dot{E}_h^{k=2}(T_j) = \dot{E}_h^{k=2}(5) - \frac{\dot{E}_{hcalc}^{k=2}(47) - \dot{E}_h^{k=2}(17)}{47-17} * (5 - T_j)$$

Determine $\dot{Q}_{hcalc}^{k=2}(47)$ and $\dot{E}_{hcalc}^{k=2}(47)$ as described in section 3.6.4.b of this appendix. Determine $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test, using the methods specified in section 3.10 of this appendix.

e. Intermediate Compressor Speed. Calculate the space heating capacity, $\dot{Q}_h^{k=v}(T_j)$, and electrical power consumption, $\dot{E}_h^{k=v}(T_j)$, of the heat pump when operating at outdoor temperature T_j and the intermediate compressor speed used during the section 3.6.4 $H2_V$ test using

Equation 4.2.4-5 $$\dot{Q}_h^{k=v}(T_j) = \dot{Q}_h^{k=v}(35) + M_Q * (T_j - 35)$$

Equation 4.2.4-6 $$\dot{E}_h^{k=v}(T_j) = \dot{E}_h^{k=v}(35) + M_E * (T_j - 35)$$

where $\dot{Q}_h^{k=v}(35)$ and $\dot{E}_h^{k=v}(35)$ are determined from the $H2_V$ test and calculated as specified in section 3.9 of this appendix. Approximate the slopes of the k=v intermediate speed heating capacity and electrical power input curves, M_Q and M_E, as follows:

$$M_Q = \left[\frac{\dot{Q}_h^{k=1}(62) - \dot{Q}_h^{k=1}(47)}{62-47} * (1 - N_Q)\right] + \left[N_Q * \frac{\dot{Q}_h^{k=2}(35) - \dot{Q}_h^{k=2}(17)}{35-17}\right]$$

$$M_E = \left[\frac{\dot{E}_h^{k=1}(62) - \dot{E}_h^{k=1}(47)}{62-47} * (1 - N_E)\right] + \left[N_E * \frac{\dot{E}_h^{k=2}(35) - \dot{E}_h^{k=2}(17)}{35-17}\right]$$

where,

$$N_Q = \frac{\dot{Q}_h^{k=v}(35) - \dot{Q}_h^{k=1}(35)}{\dot{Q}_h^{k=2}(35) - \dot{Q}_h^{k=1}(35)} \qquad N_E = \frac{\dot{E}_h^{k=v}(35) - \dot{E}_h^{k=1}(35)}{\dot{E}_h^{k=2}(35) - \dot{E}_h^{k=1}(35)}$$

Use Equations 4.2.4–1 and 4.2.4–2, respectively, to calculate $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$, whether or not the heat pump is a minimum-speed-limiting variable-speed heat pump.

4.2.4.1 Steady-State Space Heating Capacity When Operating at Minimum Compressor Speed Is Greater Than or Equal to the Building Heating Load at Temperature T_j, $\dot{Q}_h^{k=1}(T_j \geq BL(T_j)$

Evaluate the Equation 4.2–1 quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.1 of this appendix. Except now use Equations 4.2.4–1 and 4.2.4–2 (for heat pumps that are not minimum-speed-limiting) or Equations 4.3.4–3 and 4.2.4–4 (for minimum-speed-limiting variable-speed heat pumps) to evaluate $\dot{Q}_h^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j)$, respectively, and replace section 4.2.3.1 references to ''low capacity'' and section 3.6.3 of this appendix with ''minimum speed'' and section 3.6.4 of this appendix. Also, the last sentence of section 4.2.3.1 of this appendix does not apply.

4.2.4.2 Heat Pump Operates at an Intermediate Compressor Speed (k=i) in Order To Match the Building Heating Load at a Temperature T_j, $\dot{Q}_h^{k=1}(T_j) < BL(T_j) < \dot{Q}_h^{k=2}(T_j)$

Calculate

$$\frac{RH(T_j)}{N} \text{ using Equation 4.2.3-2 while evaluating } \frac{e_h(T_j)}{N} \text{ using,}$$

$$\frac{e_h(T_j)}{N} = \dot{E}_h^{k=i}(T_j) * \delta(T_j) * \frac{n_j}{N}$$

where:

$$\dot{E}_h^{k=i}(T_j) = \frac{\dot{Q}_h^{k=i}(T_j)}{3.413\frac{Btu/h}{W} * COP^{k=i}(T_j)}$$

and $\delta(T_j)$ is evaluated using Equation 4.2.3–3 while, $\dot{Q}_h^{k=i}(T_j) = BL(T_j)$, the space heating capacity delivered by the unit in matching the building load at temperature (T_j), Btu/h. The matching occurs with the heat pump operating at compressor speed k=i.

$COP^{k=i}(T_j)$ = the steady-state coefficient of performance of the heat pump when operating at compressor speed k=i and temperature T_j, dimensionless.

For each temperature bin where the heat pump operates at an intermediate compressor speed, determine $COP^{k=i}(T_j)$ using the following equations,

For each temperature bin where $\dot{Q}_h^{k=1}(T_j) < BL(T_j) < \dot{Q}_h^{k=v}(T_j)$,

$$COP_h^{k=i}(T_j) = COP_h^{k=1}(T_j) + \frac{COP_h^{k=v}(T_j) - COP_h^{k=1}(T_j)}{Q_h^{k=v}(T_j) - Q_h^{k=1}(T_j)} * (BL(T_j) - Q_h^{k=1}(T_j))$$

For each temperature bin where $\dot{Q}_h^{k=v}(T_j) \leq BL(T_j) < \dot{Q}_h^{k=2}(T_j)$,

$$COP_h^{k=i}(T_j) = COP_h^{k=v}(T_j) + \frac{COP_h^{k=2}(T_j) - COP_h^{k=v}(T_j)}{Q_h^{k=2}(T_j) - Q_h^{k=v}(T_j)} * (BL(T_j) - Q_h^{k=v}(T_j))$$

Where:

$COP_h^{k=1}(T_j)$ is the steady-state coefficient of performance of the heat pump when operating at minimum compressor speed and temperature Tj, dimensionless, calculated using capacity $\dot{Q}_h^{k=1}(T_j)$ calculated using Equation 4.2.4–1 or 4.2.4–3 and electrical power consumption $\dot{E}_h^{k=1}(T_j)$ calculated using Equation 4.2.4–2 or 4.2.4–4;

$COP_h^{k=v}(T_j)$ is the steady-state coefficient of performance of the heat pump when operating at intermediate compressor speed and temperature Tj, dimensionless, calculated using capacity $\dot{Q}_h^{k=v}(T_j)$ calculated using Equation 4.2.4–5 and electrical power consumption $\dot{E}_h^{k=v}(T_j)$ calculated using Equation 4.2.4–6;

$COP_h^{k=2}(T_j)$ is the steady-state coefficient of performance of the heat pump when operating at full compressor speed and temperature Tj, dimensionless, calculated using capacity $\dot{Q}_h^{k=2}(T_j)$ and electrical power consumption $\dot{E}_h^{k=2}(T_j)$, both calculated as described in section 4.2.4; and

$BL(T_j)$ is the building heating load at temperature T_j, Btu/h.

4.2.4.3 Heat Pump Must Operate Continuously at Full (k=2) Compressor Speed at Temperature T_j, $BL(T_j) \geq \dot{Q}_h^{k=2}(T_j)$. Evaluate the Equation 4.2–1 Quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.4 of this appendix with the understanding that $\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$ correspond to full compressor speed operation and are derived from the results of the specified section 3.6.4 tests of this appendix.

4.2.5 Heat Pumps Having a Heat Comfort Controller

Heat pumps having heat comfort controllers, when set to maintain a typical minimum air delivery temperature, will cause the heat pump condenser to operate less because of a greater contribution from the resistive elements. With a conventional heat pump, resistive heating is only initiated if the heat pump condenser cannot meet the building load (*i.e.,* is delayed until a second stage call from the indoor thermostat). With a heat comfort controller, resistive heating can occur even though the heat pump condenser has adequate capacity to meet the building load (*i.e.,* both on during a first stage call from the indoor thermostat). As a result, the outdoor temperature where the heat pump compressor no longer cycles (*i.e.,* starts to run continuously), will be lower than if

the heat pump did not have the heat comfort controller.

4.2.5.1 Blower Coil System Heat Pump Having a Heat Comfort Controller: Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Single-Speed Compressor and Either a Fixed-Speed Indoor Blower or a Constant-Air-Volume-Rate Indoor Blower Installed, or a Single-Speed Coil-Only System Heat Pump

Calculate the space heating capacity and electrical power of the heat pump without the heat comfort controller being active as specified in section 4.2.1 of this appendix (Equations 4.2.1–4 and 4.2.1–5) for each outdoor bin temperature, T_j, that is listed in Table 20. Denote these capacities and electrical powers by using the subscript ''hp'' instead of ''h.'' Calculate the mass flow rate (expressed in pounds-mass of dry air per hour) and the specific heat of the indoor air (expressed in $Btu/lbm_{da} \cdot °F$) from the results of the H1 test using:

$$\dot{m}_{da} = \overline{\dot{V}_s} * 0.075 \frac{lbm_{da}}{ft^3} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v'_n * [1 + W_n]} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v_n} * \frac{60_{min}}{hr}$$

$$C_{p,da} = 0.24 + 0.444 * W_n$$

where $\overline{\dot{V}}_s$, $\overline{\dot{V}}_{mx}$, v'_n (or v_n), and W_n are defined following Equation 3–1. For each outdoor bin temperature listed in Table 20, calculate the nominal temperature of the air leaving the heat pump condenser coil using,

$$T_0(T_j) = 70°\text{F} + \frac{\dot{Q}_{hp}(T_j)}{\dot{m}_{da} * C_{p,da}}$$

Evaluate $e_h(T_j/N)$, $RH(T_j)/N$, $X(T_j)$, PLF_j, and $\delta(T_j)$ as specified in section 4.2.1 of this appendix. For each bin calculation, use the space heating capacity and electrical power from Case 1 or Case 2, whichever applies.

Case 1. For outdoor bin temperatures where $T_o(T_j)$ is equal to or greater than T_{CC} (the maximum supply temperature determined according to section 3.1.9 of this appendix), determine $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ as specified in section 4.2.1 of this appendix (*i.e.*, $\dot{Q}_h(T_j) = \dot{Q}_{hp}(T_j)$ and $\dot{E}_{hp}(T_j) = \dot{E}_{hp}(T_j)$).

Note: Even though $T_o(T_j) \geq T_{cc}$, resistive heating may be required; evaluate Equation 4.2.1–2 for all bins.

Case 2. For outdoor bin temperatures where $T_o(T_j) > T_{cc}$, determine $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ using,

$$\dot{Q}_h(T_j) = \dot{Q}_{hp}(T_j) + \dot{Q}_{CC}(T_j) \qquad \dot{E}_h(T_j) = \dot{E}_{hp}(T_j) + \dot{E}_{CC}(T_j)$$

where,

$$\dot{Q}_{CC}(T_j) = \dot{m}_{da} * C_{p,da} * [T_{CC} - T_0(T_j)] \qquad \dot{E}_{CC}(T_j) = \frac{\dot{Q}_{CC}(T_j)}{3.413 \frac{Btu/h}{W}}$$

Note: Even though $T_o(T_j) < T_{cc}$, additional resistive heating may be required; evaluate Equation 4.2.1–2 for all bins.

4.2.5.2 Heat Pump Having a Heat Comfort Controller: Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Single-Speed Compressor and a Variable-Speed, Variable-Air-Volume-Rate Indoor Blower

Calculate the space heating capacity and electrical power of the heat pump without the heat comfort controller being active as specified in section 4.2.2 of this appendix (Equations 4.2.2–1 and 4.2.2–2) for each outdoor bin temperature, T_j, that is listed in Table 20. Denote these capacities and electrical powers by using the subscript ''hp'' instead of ''h.'' Calculate the mass flow rate (expressed in pounds-mass of dry air per hour) and the specific heat of the indoor air (expressed in $Btu/lbm_{da} \cdot °F$) from the results of the $H1_2$ test using:

$$\dot{m}_{da} = \overline{\dot{V}_s} * 0.075 \frac{lbm_{da}}{ft^3} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v'_n * [1 + W_n]} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v_n} * \frac{60_{min}}{hr}$$

$$C_{p,da} = 0.24 + 0.444 * W_n$$

where $\overline{\dot{V}}_S$, $\overline{\dot{V}}_{mx}$, v'_n (or v_n), and W_n are defined following Equation 3–1. For each outdoor bin temperature listed in Table 20, calculate the nominal temperature of the air leaving the heat pump condenser coil using,

$$T_0(T_j) = 70°\text{F} + \frac{\dot{Q}_{hp}(T_j)}{\dot{m}_{da} * C_{p,da}}$$

Evaluate $e_h(T_j)/N$, $RH(T_j)/N$, $X(T_j)$, PLF_j, and $\delta(T_j)$ as specified in section 4.2.1 of this appendix with the exception of replacing references to the H1C test and section 3.6.1 of this appendix with the $H1C_1$ test and section 3.6.2 of this appendix. For each bin calculation, use the space heating capacity and electrical power from Case 1 or Case 2, whichever applies.

Case 1. For outdoor bin temperatures where $T_o(T_j)$ is equal to or greater than T_{CC} (the maximum supply temperature determined according to section 3.1.9 of this appendix), determine $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ as specified in section 4.2.2 of this appendix (*i.e.* $\dot{Q}_h(T_j) = \dot{Q}_{hp}(T_j)$ and $\dot{E}_h(T_j) = \dot{E}_{hp}(T_j)$). Note: Even though $T_o(T_j) \geq T_{CC}$, resistive heating may be required; evaluate Equation 4.2.1–2 for all bins.

Case 2. For outdoor bin temperatures where $T_o(T_j) < T_{CC}$, determine $\dot{Q}_h(T_j)$ and $\dot{E}_h(T_j)$ using,

$$\dot{Q}_h(T_j) = \dot{Q}_{hp}(T_j) + \dot{Q}_{CC}(T_j) \qquad \dot{E}_h(T_j) = \dot{E}_{hp}(T_j) + \dot{E}_{CC}(T_j)$$

where,

$$\dot{Q}_{CC}(T_j) = \dot{m}_{da} * C_{p,da} * [T_{CC} - T_0(T_j)] \qquad \dot{E}_{CC}(T_j) = \frac{\dot{Q}_{CC}(T_j)}{3.413\frac{Btu/h}{W}}$$

Note: Even though $T_o(T_j) < T_{cc}$, additional resistive heating may be required; evaluate Equation 4.2.1–2 for all bins.

4.2.5.3 Heat Pumps Having a Heat Comfort Controller: Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Two-Capacity Compressor

Calculate the space heating capacity and electrical power of the heat pump without the heat comfort controller being active as specified in section 4.2.3 of this appendix for both high and low capacity and at each outdoor bin temperature, T_j, that is listed in Table 20. Denote these capacities and electrical powers by using the subscript ''hp'' instead of ''h.'' For the low capacity case, calculate the mass flow rate (expressed in pounds-mass of dry air per hour) and the specific heat of the indoor air (expressed in $Btu/lbm_{da} \cdot °F$) from the results of the $H1_1$ test using:

$$\dot{m}_{da}^{k=1} = \overline{\dot{V}_s} * 0.075\frac{lbm_{da}}{ft^3} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v_n' * [1 + W_n]} * \frac{60_{min}}{hr} = \frac{\overline{\dot{V}}_{mx}}{v_n} * \frac{60_{min}}{hr}$$

$$C_{p,da}^{k=1} = 0.24 + 0.444 * W_n$$

where $\overline{V}_s$, $\overline{V}_{mx}$, v'_n (or v_n), and W_n are defined following Equation 3–1. For each outdoor bin temperature listed in Table 20, calculate the nominal temperature of the air leaving the heat pump condenser coil when operating at low capacity using,

$$T_0^{k=1}(T_j) = 70°\text{F} + \frac{\dot{Q}_{hp}^{k=1}(T_j)}{\dot{m}_{da}^{k=1} * C_{p,da}^{k=1}}$$

Repeat the above calculations to determine the mass flow rate ($\dot{m}_{da}^{k=2}$) and the specific heat of the indoor air ($C_{p,da}^{k=2}$) when operating at high capacity by using the results of the $H1_2$ test. For each outdoor bin temperature listed in Table 20, calculate the nominal temperature of the air leaving the heat pump condenser coil when operating at high capacity using,

$$T_0^{k=2}(T_j) = 70°\text{F} + \frac{\dot{Q}_{hp}^{k=2}(T_j)}{\dot{m}_{da}^{k=2} * C_{p,da}^{k=2}}$$

Evaluate $e_h(T_j)/N$, $RH(T_j)/N$, $X^{k=1}(T_j)$, and/or $X^{k=2}(T_j)$, PLF_j, and $\delta'(T_j)$ or $\delta''(T_j)$ as specified in section 4.2.3.1. 4.2.3.2, 4.2.3.3, or 4.2.3.4 of this appendix, whichever applies, for each temperature bin. To evaluate these quantities, use the low-capacity space heating capacity and the low-capacity electrical power from Case 1 or Case 2, whichever applies; use the high-capacity space heating capacity and the high-capacity electrical power from Case 3 or Case 4, whichever applies.

Case 1. For outdoor bin temperatures where $T_o^{k=1}(T_j)$ is equal to or greater than T_{CC} (the maximum supply temperature determined according to section 3.1.9 of this appendix), determine $\dot{Q}_h^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j)$ as specified in section 4.2.3 of this appendix (*i.e.,* $\dot{Q}_h^{k=1}(T_j) = \dot{Q}_{hp}^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j) = \dot{E}_{hp}^{k=1}(T_j)$.

Note: Even though $T_o^{k=1}(T_j) \geq T_{CC}$, resistive heating may be required; evaluate $RH(T_j)/N$ for all bins.

Case 2. For outdoor bin temperatures where $T_o^{k=1}(T_j)$ T_{CC}, determine $\dot{Q}_h^{k=1}(T_j)$ and $\dot{E}_h^{k=1}(T_j)$ using,

$\dot{Q}_h^{k=1}(T_j) = \dot{Q}_{hp}^{k=1}(T_j) + \dot{Q}_{CC}^{k=1}(T_j)$ $\dot{E}_h^{k=1}(T_j) = \dot{E}_{hp}^{k=1}(T_j) + \dot{E}_{CC}^{k=1}(T_j)$

where,

$$\dot{Q}_{CC}^{k=1}(T_j) = \dot{m}_{da}^{k=1} * C_{p,da}^{k=1} * [T_{CC} - T_0^{k=1}(T_j)] \qquad \dot{E}_{CC}^{k=1}(T_j) = \frac{\dot{Q}_{CC}^{k=1}(T_j)}{3.413\frac{Btu/h}{W}}$$

Note: Even though $T_o^{k=1}(T_j) \geq T_{cc}$, additional resistive heating may be required; evaluate $RH(T_j)/N$ for all bins.

Case 3. For outdoor bin temperatures where $T_o^{k=2}(T_j)$ is equal to or greater than T_{CC}, determine $\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$ as specified in section 4.2.3 of this appendix (*i.e.*, $\dot{Q}_h^{k=2}(T_j) = \dot{Q}_{hp}^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j) = \dot{E}_{hp}^{k=2}(T_j)$).

Note: Even though $T_o^{k=2}(T_j) < T_{CC}$, resistive heating may be required; evaluate $RH(T_j)/N$ for all bins.

Case 4. For outdoor bin temperatures where $T_o^{k=2}(T_j) < T_{CC}$, determine $\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}(T_j)$ using,

$\dot{Q}_h^{k=2}(T_j) = \dot{Q}_{hp}^{k=2}(T_j) + \dot{Q}_{CC}^{k=2}(T_j)$ $\dot{E}_h^{k=2}(T_j) = \dot{E}_{hp}^{k=2}(T_j) + \dot{E}_{CC}^{k=2}(T_j)$

where,

$$\dot{Q}_{CC}^{k=2}(T_j) = \dot{m}_{da}^{k=2} * C_{p,da}^{k=2} * [T_{CC} - T_0^{k=2}(T_j)] \qquad \dot{E}_{CC}^{k=2}(T_j) = \frac{\dot{Q}_{CC}^{k=2}(T_j)}{3.413\frac{Btu/h}{W}}$$

Note: Even though $T_o^{k=2}(T_j)$ T_{cc}, additional resistive heating may be required; evaluate $RH(T_j)/N$ for all bins.

4.2.5.4 Heat Pumps Having a Heat Comfort Controller: Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Variable-Speed Compressor [Reserved]

4.2.6 Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Triple-Capacity Compressor

The only triple-capacity heat pumps covered are triple-capacity, northern heat pumps. For such heat pumps, the calculation of the Eq. 4.2–1 quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

differ depending on whether the heat pump would cycle on and off at low capacity (section 4.2.6.1 of this appendix), cycle on and off at high capacity (section 4.2.6.2 of this appendix), cycle on and off at booster capacity (section 4.2.6.3 of this appendix), cycle between low and high capacity (section 4.2.6.4 of this appendix), cycle between high and booster capacity (section 4.2.6.5 of this appendix), operate continuously at low capacity (section 4.2.6.6 of this appendix), operate continuously at high capacity (section 4.2.6.7 of this appendix), operate continuously at booster capacity (section 4.2.6.8 of this appendix), or heat solely using resistive heating (also section 4.2.6.8 of this appendix) in responding to the building load. As applicable, the manufacturer must supply information regarding the outdoor temperature range at which each stage of compressor capacity is active. As an informative example, data may be submitted in this manner: At the low (k=1) compressor capacity, the outdoor temperature range of operation is 40 °F ≤ T ≤ 65 °F; At the high (k=2) compressor capacity, the outdoor temperature range of operation is 20 °F ≤ T ≤ 50 °F; At the booster (k=3) compressor capacity, the outdoor temperature range of operation is −20 °F ≤ T ≤ 30 °F.

a. Evaluate the space heating capacity and electrical power consumption of the heat pump when operating at low compressor capacity and outdoor temperature T_j using the equations given in section 4.2.3 of this appendix for $Q_h^{k=1}(T_j)$ and $\dot{E}_h^{k=1}$ (T_j)) In evaluating the section 4.2.3 equations, Determine $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test, and $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test. Calculate all four quantities as specified in section 3.7 of this appendix. If, in accordance with section 3.6.6 of this appendix, the $H3_1$ test is conducted, calculate $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ as specified in section 3.10 of this appendix and determine $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ as specified in section 3.6.6 of this appendix.

b. Evaluate the space heating capacity and electrical power consumption ($\dot{Q}_h^{k=2}(T_j)$ and $\dot{E}_h^{k=2}$ (T_j)) of the heat pump when operating at high compressor capacity and outdoor temperature Tj by solving Equations 4.2.2–3 and 4.2.2–4, respectively, for k=2. Determine $\dot{Q}_h^{k=1}(62)$ and $\dot{E}_h^{k=1}(62)$ from the $H0_1$ test, $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test, and $\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test, evaluated as specified in section 3.7 of this appendix. Determine the equation input for $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$ test evaluated as specified in section 3.9.1 of this appendix. Also, determine $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test, evaluated as specified in section 3.10 of this appendix.

c. Evaluate the space heating capacity and electrical power consumption of the heat pump when operating at booster compressor capacity and outdoor temperature T_j using

$$\dot{Q}_h^{k=3}(T_j) = \begin{cases} \dot{Q}_h^{k=3}(17) + \dfrac{\left[\dot{Q}_h^{k=3}(35) - \dot{Q}_h^{k=3}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\mathrm{F} < T_j \leq 45\ °\mathrm{F} \\ \dot{Q}_h^{k=3}(5) + \dfrac{\left[\dot{Q}_h^{k=3}(17) - \dot{Q}_h^{k=3}(5)\right] * (T_j - 5)}{17 - 5}, & if\ T_j \leq 17\ °\mathrm{F} \end{cases}$$

$$\dot{E}_h^{k=3}(T_j) = \begin{cases} \dot{E}_h^{k=3}(17) + \dfrac{\left[\dot{E}_h^{k=3}(35) - \dot{E}_h^{k=3}(17)\right] * (T_j - 17)}{35 - 17}, & if\ 17\ °\mathrm{F} < T_j \leq 45\ °\mathrm{F} \\ \dot{E}_h^{k=3}(5) + \dfrac{\left[\dot{E}_h^{k=3}(17) - \dot{E}_h^{k=3}(5)\right] * (T_j - 5)}{17 - 5}, & if\ T_j \leq 17\ °\mathrm{F} \end{cases}$$

Determine $\dot{Q}_h^{k=3}(17)$ and $\dot{E}_h^{k=3}(17)$ from the $H3_3$ test and determine $\dot{Q}_h^{k=2}(5)$ and $\dot{E}_h^{k=3}(5)$ from the $H4_3$ test. Calculate all four quantities as specified in section 3.10 of this appendix. Determine the equation input for $\dot{Q}_h^{k=3}(35)$ and $\dot{E}_h^{k=3}(35)$ as specified in section 3.6.6 of this appendix.

4.2.6.1 Steady-State Space Heating Capacity When Operating at Low Compressor Capacity Is Greater Than or Equal to the Building Heating Load at Temperature T_j, $\dot{Q}_h^{k=1}(T_j) \geq BL(T_j)$., and the Heat Pump Permits Low Compressor Capacity at T_j. Evaluate the Quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

using Eqs. 4.2.3–1 and 4.2.3–2, respectively. Determine the equation inputs $X^{k=1}(T_j)$, PLF_j, and $\delta'(T_j)$ as specified in section 4.2.3.1. In calculating the part load factor, PLF_j, use the low-capacity cyclic-degradation coefficient $C_D{}^h$, [or equivalently, $C_D{}^h(k=1)$] determined in accordance with section 3.6.6 of this appendix.

4.2.6.2 Heat Pump Only Operates at High (k=2) Compressor Capacity at Temperature T_j and Its Capacity Is Greater Than or Equal to the Building Heating Load, $BL(T_j) < \dot{Q}_h^{k=2}(T_j)$

Evaluate the quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.3 of this appendix. Determine the equation inputs $X^{k=2}(T_j)$, PLF_j, and $\delta'(T_j)$ as specified in section 4.2.3.3 of this appendix. In calculating the part load factor, PLF_j, use the high-capacity cyclic-degradation coefficient, $C_D{}^h(k=2)$ determined in accordance with section 3.6.6 of this appendix.

4.2.6.3 Heat Pump Only Operates at High (k=3) Compressor Capacity at Temperature T_j and its Capacity Is Greater Than or Equal to the Building Heating Load, $BL(T_j) \leq \dot{Q}_h^{k=3}(T_j)$

Calculate $\frac{RH(T_j)}{N}$ and using Eq. 4.2.3-2. Evaluate $\frac{e_h(T_j)}{N}$ using

$$\frac{e_h(T_j)}{N} = \frac{X^{k=3}(T_j) * \dot{E}_h^{k=3}(T_j) * \delta'(T_j)}{PLF_j} * \frac{n_j}{N}$$

where

$$X^{k=3}(T_j) = BL(T_j)/\dot{Q}_h^{k=3}(T_j) \text{ and } PLF_j = 1 - C_D^h(k=3) * [1 - X^{k=3}(T_j)$$

Determine the low temperature cut-out factor, $\delta'(T_j)$, using Eq. 4.2.3–3. Use the booster-capacity cyclic-degradation coefficient, $C_D{}^h(k=3)$ determined in accordance with section 3.6.6 of this appendix.

4.2.6.4 Heat Pump Alternates Between High (k=2) and Low (k=1) Compressor Capacity To Satisfy the Building Heating Load at a Temperature T_j, $\dot{Q}_h^{k=1}(T_j) < BL(T_j) < \dot{Q}_h^{k=2}(T_j)$

Evaluate the quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.2 of this appendix. Determine the equation inputs $X^{k=1}(T_j)$, $X^{k=2}(T_j)$, and $\delta'(T_j)$ as specified in section 4.2.3.2 of this appendix.

4.2.6.5 Heat Pump Alternates Between High (k=2) and Booster (k=3) Compressor Capacity To Satisfy the Building Heating Load at a Temperature T_j, $\dot{Q}_h^{k=2}(T_j) < BL(T_j) < \dot{Q}_h^{k=3}(T_j)$

Calculate $\frac{RH(T_j)}{N}$ and using Eq. 4.2.3-2. Evaluate $\frac{e_h(T_j)}{N}$ using

$$\frac{e_h(T_j)}{N} = [X^{k=2}(T_j) * \dot{E}_h^{k=2}(T_j) + X^{k=3}(T_j) * \dot{E}_h^{k=3}(T_j)] * \delta'(T_j) * \frac{n_j}{N}$$

where:

$$X^{k=2}(T_j) = \frac{\dot{Q}_h^{k=3}(T_j) - BL(T_j)}{\dot{Q}_h^{k=3}(T_j) - \dot{Q}_h^{k=2}(T_j)}$$

and $X^{k=3}(T_j) = X^{k=2}(T_j)$ = the heating mode, booster capacity load factor for temperature bin j, dimensionless. Determine the low temperature cut-out factor, $\delta'(T_j)$, using Eq. 4.2.3–3.

4.2.6.6 Heat Pump Only Operates at Low (k=1) Capacity at Temperature T_j and Its Capacity Is Less Than the Building Heating Load, $BL(T_j) > \dot{Q}_h^{k=1}(T_j)$

$$\frac{e_h(T_j)}{N} = \dot{E}_h^{k=1}(T_j) * \delta'(T_j) * \frac{n_j}{N} \quad \text{and} \frac{RH(T_j)}{N} = \frac{BL(T_j) - [\dot{Q}_h^{k=1}(T_j) * \delta\prime(T_j)]}{3.413\frac{Btu/h}{W}} * \frac{n_j}{N}$$

where the low temperature cut-out factor, $\delta'(T_j)$, is calculated using Eq. 4.2.3–3.

4.2.6.7 Heat Pump Only Operates at High (k=2) Capacity at Temperature T_j and Its Capacity Is Less Than the Building Heating Load, $BL(T_j) > \dot{Q}_h^{k=2}(T_j)$

Evaluate the quantities

$$\frac{RH(T_j)}{N} \quad \text{and} \quad \frac{e_h(T_j)}{N}$$

as specified in section 4.2.3.4 of this appendix. Calculate $\delta''(T_j)$ using the equation given in section 4.2.3.4 of this appendix.

4.2.6.8 Heat Pump Only Operates at Booster (k=3) Capacity at Temperature T_j and Its Capacity Is Less Than the Building Heating Load, $BL(T_j) > \dot{Q}_h^{k=3}(T_j)$ or the System Converts To Using Only Resistive Heating

$$\frac{e_h(T_j)}{N} = \dot{E}_h^{k=3}(T_j) * \delta'(T_j) * \frac{n_j}{N} \quad \text{and} \quad \frac{RH(T_j)}{N} = \frac{BL(T_j) - [\dot{Q}_h^{k=3}(T_j) * \delta\prime(T_j)]}{3.413\frac{Btu/h}{W}} * \frac{n_j}{N}$$

where $\delta''(T_j)$ is calculated as specified in section 4.2.3.4 of this appendix if the heat pump is operating at its booster compressor capacity. If the heat pump system converts to using only resistive heating at outdoor temperature T_j, set $\delta'(T_j)$ equal to zero.

4.2.7 Additional Steps for Calculating the HSPF2 of a Heat Pump Having a Single Indoor Unit With Multiple Indoor Blowers. The Calculation of the Eq. 4.2–1 Quantities $e_h(T_j)/N$ and $RH(T_j)/N$ Are Evaluated as Specified in the Applicable Subsection

4.2.7.1 For Multiple Indoor Blower Heat Pumps That Are Connected to a Singular, Single-Speed Outdoor Unit

a. Calculate the space heating capacity, $\dot{Q}_h^{k=1}$ (Tj), and electrical power consumption, $\dot{E}_h^{k=1}$ (Tj), of the heat pump when operating at the heating minimum air volume rate and outdoor temperature T_j using Eqs. 4.2.2–3 and 4.2.2–4, respectively. Use these same equations to calculate the space heating capacity, $\dot{Q}_h^{k=2}$ (Tj) and electrical power consumption, $\dot{E}_h^{k=2}$ (Tj), of the test unit when operating at the heating full-load air volume rate and outdoor temperature T_j. In evaluating Eqs. 4.2.2–3 and 4.2.2– 4, determine the quantities $\dot{Q}_h^{k=1}(47)$ and $\dot{E}_h^{k=1}(47)$ from the $H1_1$ test; determine

$\dot{Q}_h^{k=2}(47)$ and $\dot{E}_h^{k=2}(47)$ from the $H1_2$ test. Evaluate all four quantities according to section 3.7 of this appendix. Determine the quantities $\dot{Q}_h^{k=1}(35)$ and $\dot{E}_h^{k=1}(35)$ as specified in section 3.6.2 of this appendix. Determine $\dot{Q}_h^{k=2}(35)$ and $\dot{E}_h^{k=2}(35)$ from the $H2_2$ frost accumulation test as calculated according to section 3.9.1 of this appendix. Determine the quantities $\dot{Q}_h^{k=1}(17)$ and $\dot{E}_h^{k=1}(17)$ from the $H3_1$ test, and $\dot{Q}_h^{k=2}(17)$ and $\dot{E}_h^{k=2}(17)$ from the $H3_2$ test. Evaluate all four quantities according to section 3.10 of this appendix. Refer to section 3.6.2 and Table 12 of this appendix for additional information on the referenced laboratory tests.

b. Determine the heating mode cyclic degradation coefficient, C_D^h, as per sections 3.6.2 and 3.8 to 3.8.1 of this appendix. Assign this same value to $C_D^h(k = 2)$.

c. Except for using the above values of $\dot{Q}_h^{k=1}(Tj)$, $\dot{E}_h^{k=1}(Tj)$, $\dot{Q}_h^{k=2}(Tj)$, $\dot{E}_h^{k=2}(Tj)$, C_D^h, and $C_D^h(k = 2)$, calculate the quantities $e_h(T_j)/N$ as specified in section 4.2.3.1 of this appendix for cases where $\dot{Q}_h^{k=1}(Tj) \geq BL(T_j)$. For all other outdoor bin temperatures, T_j, calculate $e_h(Tj)/N$ and $RH_h(Tj)/N$ as specified in section 4.2.3.3 of this appendix if $\dot{Q}_h^{k=2}(Tj) > BL(Tj)$ or as specified in section 4.2.3.4 of this appendix if $\dot{Q}_h^{k=2}(Tj) \leq BL(T_j)$.

4.2.7.2 For Multiple Indoor Blower Heat Pumps Connected to Either a Single Outdoor Unit With a Two-Capacity Compressor or to Two Separate but Identical Model Single-Speed Outdoor Units. Calculate the Quantities $e_h(T_j)/N$ and $RH(T_j)/N$ as Specified in Section 4.2.3 of This Appendix

4.3 Calculations of Off-Mode Power Consumption

For central air conditioners and heat pumps with a cooling capacity of: Less than 36,000 Btu/h, determine the off mode represented value, $P_{W,OFF}$, with the following equation:

$$P_{W,OFF} = \frac{P1 + P2}{2};$$

greater than or equal to 36,000 Btu/h, calculate the capacity scaling factor according to:

$$F_{scale} = \frac{\dot{Q}_C(95)}{36{,}000},$$

where, $\dot{Q}_C(95)$ is the total cooling capacity at the A or A_2 test condition, and determine the off mode represented value, $P_{W,OFF}$, with the following equation:

$$P_{W,OFF} = \frac{P1 + P2}{2 \times F_{scale}};$$

4.4 Rounding of SEER2 and HSPF2 for Reporting Purposes

After calculating SEER2 according to section 4.1 of this appendix and HSPF2 according to section 4.2 of this appendix round the values off as specified per § 430.23(m) of title 10 of the Code of Federal Regulations.

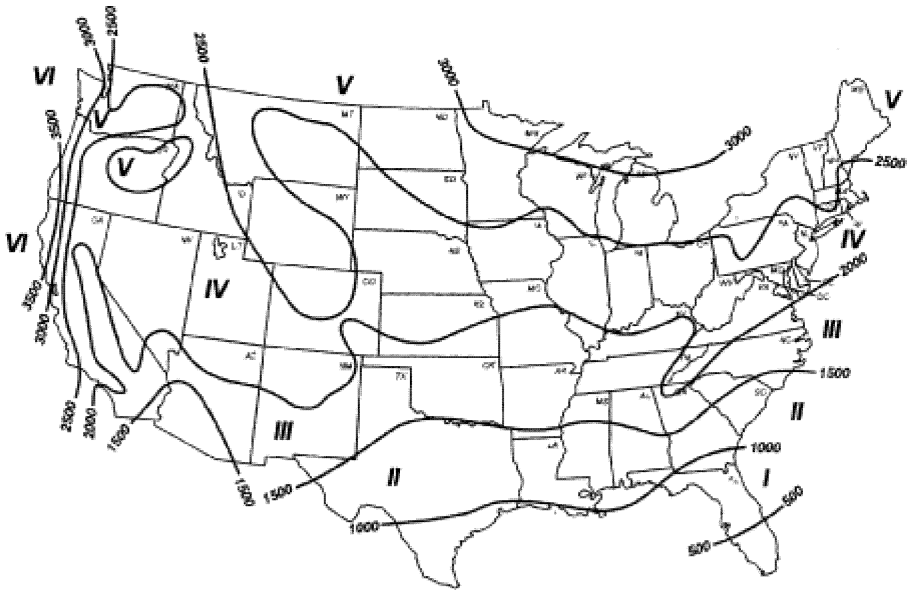

Figure 1—Climatic Regions I through VI for the United States

TABLE 21—REPRESENTATIVE COOLING AND HEATING LOAD HOURS FOR EACH GENERALIZED CLIMATIC REGION

Climatic region	Cooling load hours CLH_R	Heating load hours HLH_R
I	2,400	493
II	1,800	857
III	1,200	1,247
IV	800	1,701
Rating Values	1,000	1,572
V	400	2,202
VI	200	1,842

4.5 Calculations of the SHR, Which Should Be Computed for Different Equipment Configurations and Test Conditions Specified in Table 22.

TABLE 22—APPLICABLE TEST CONDITIONS FOR CALCULATION OF THE SENSIBLE HEAT RATIO

Equipment configuration	Reference table number of Appendix M	SHR computation with results from	Computed values
Units Having a Single-Speed Compressor and a Fixed-Speed Indoor Blower, a Constant Air Volume Rate Indoor Blower, or Single-Speed Coil-Only.	4	B Test	SHR(B).
Units Having a Single-Speed Compressor That Meet the section 3.2.2.1 Indoor Unit Requirements.	5	B2 and B1 Tests	SHR(B1), SHR(B2).
Units Having a Two-Capacity Compressor	6	B2 and B1 Tests	SHR(B1), SHR(B2).
Units Having a Variable-Speed Compressor	7	B2 and B1 Tests	SHR(B1), SHR(B2).

The SHR is defined and calculated as follows:

$$SHR = \frac{Sensible\ Cooling\ Capacity}{Total\ Cooling\ Capacity}$$

$$= \frac{\dot{Q}_{sc}^{k}(T)}{\dot{Q}_{c}^{k}(T)}$$

Where both the total and sensible cooling capacities are determined from the same cooling mode test and calculated from data collected over the same 30-minute data collection interval.

4.6 Calculations of the Energy Efficiency Ratio (EER)

Calculate the energy efficiency ratio using,

$$EER = \frac{Total\ Cooling\ Capacity}{Total\ Electrical\ Power\ Consumption}$$

$$= \frac{\dot{Q}_{c}^{k}(T)}{\dot{E}_{c}^{k}(T)}$$

where $\dot{Q}_c^k(T)$ and $\dot{E}_c^k(T)$ are the space cooling capacity and electrical power consumption determined from the 30-minute data collection interval of the same steady-state wet coil cooling mode test and calculated as specified in section 3.3 of this appendix. Add the letter identification for each steady-state test as a subscript (*e.g.*, EER_{A_2}) to differentiate among the resulting EER values. The represented value of EER is determined from the A or A_2 test, whichever is applicable. The represented value of EER determined in accordance with this appendix is called EER2.

[FR Doc. 2016–30004 Filed 1–4–17; 8:45 am]

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