DEPARTMENT OF ENERGY

10 CFR Part 431

[EERE–2020–BT–STD–0008]

RIN 1904–AF01

Energy Conservation Program: Energy Conservation Standards for Computer Room Air Conditioners

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Final rule.

SUMMARY: The Energy Policy and Conservation Act, as amended (EPCA), prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including small, large, and very large commercial package air conditioning and heating equipment, of which computer room air conditioners (CRACs) are a category. EPCA requires the U.S. Department of Energy (DOE or the Department) to consider the need for amended standards each time American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 90.1 is amended with respect to the standard levels or design requirements applicable to that equipment, or periodically under a six-year-lookback review provision. In this final rule, DOE is adopting amended energy conservation standards for CRACs that rely on a new efficiency metric and are equivalent to those levels specified in ASHRAE Standard 90.1–2019. DOE has determined that it lacks the clear and convincing evidence required by the statute to adopt standards more stringent than the levels specified in the industry standard.

DATES: The effective date of this rule is August 1, 2023. Compliance with the amended standards established for computer room air conditioners in this final rule is required on and after May 28, 2024.

ADDRESSES: The docket for this rulemaking, which includes **Federal Register** notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at *www.regulations.gov*. All documents in the docket are listed in the *www.regulations.gov* index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

The docket web page can be found at*: www.regulations.gov/docket/EERE-2020-BT-STD-0008*. The docket web page contains instructions on how to access all documents, including public comments, in the docket.

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SUPPLEMENTARY INFORMATION:

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I. Synopsis of the Final Rule

The Energy Policy and Conservation Act, Public Law 94–163 (42 U.S.C. 6291–6317, as codified), as amended (EPCA),[1] authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part C[2] of EPCA established the Energy Conservation Program for Certain Industrial Equipment. (42 U.S.C. 6311–6317) Such equipment includes CRACs, the subject of this rulemaking. (42 U.S.C. 6311(1)(B)–(D))

Pursuant to EPCA, DOE is triggered to consider amending the energy conservation standards for certain types of commercial and industrial equipment, including CRACs, whenever ASHRAE amends the standard levels or design requirements prescribed in ASHRAE Standard 90.1, ''*Energy Standard for Buildings Except Low-Rise Residential Buildings*'' (ASHRAE Standard 90.1). Under a separate provision of EPCA, DOE is required to review the existing energy conservation standards for those types of covered equipment subject to ASHRAE Standard 90.1 every six years to determine whether those standards need to be amended. (42 U.S.C. 6313(a)(6)(A)–(C)) For each type of equipment, EPCA

[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Public Law 116–260 (Dec. 27, 2020), which reflect the last statutory amendments that impact Parts A and A–1 of EPCA.

[2] For editorial reasons, upon codification in the U.S. Code, Part C was re-designated Part A–1.

directs that if ASHRAE Standard 90.1 is amended, DOE must adopt amended energy conservation standards at the new efficiency level in ASHRAE Standard 90.1, unless clear and convincing evidence supports a determination that adoption of a more-stringent efficiency level would produce significant additional energy savings and be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)) If DOE adopts as a uniform national standard the efficiency level specified in the amended ASHRAE Standard 90.1, DOE must establish such standard not later than 18 months after publication of the amended industry standard. (42 U.S.C. 6313(a)(6)(A)(ii)(I)) If DOE determines that a more-stringent standard is appropriate under the statutory criteria, DOE must establish such more-stringent standard not later than 30 months after publication of the revised ASHRAE Standard 90.1. (42 U.S.C. 6313(a)(6)(B)(i)) ASHRAE updated ASHRAE Standard 90.1 on October 24, 2019 (ASHRAE Standard 90.1–2019), thereby triggering DOE's previously referenced obligations pursuant to EPCA to determine for CRACs, whether: (1) the amended industry standard should be adopted; or (2) clear and convincing evidence exists to justify more-stringent standard levels. An update to ASHRAE Standard 90.1, ASHRAE Standard 90.1–2022, published in January 2023 and retained the same standards levels for CRACs as those in ASHRAE Standard 90.1–2019.

The current Federal energy conservation standards for CRACs are set forth at title 10 of the Code of Federal Regulations (CFR), 10 CFR 431.97 and, as specified in 10 CFR 431.96, those standards are denominated in terms of Sensible Coefficient of Performance (SCOP) and based on the rating conditions in American National Standards Institute (ANSI)/ASHRAE 127–2007, ''*Method of Testing for Rating Computer and Data Processing Room Unitary Air Conditioners*'' (ANSI/ASHRAE 127–2007). However, the efficiency levels for CRACs set forth in ASHRAE Standard 90.1–2019 are specified in terms of Net Sensible Coefficient of Performance (NSenCOP) and based on rating conditions in Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Standard 1360–2017, ''*Performance Rating of Computer and Data Processing Room Air Conditioners*'' (AHRI 1360–2017), which differ from the rating conditions specified in ANSI/ASHRAE 127–2007 for most configurations of CRACs. Therefore, while SCOP and NSenCOP are both ratios of the net sensible cooling capacity (NSCC) to the power consumed by the unit, they are measured at different rating conditions for most configurations of CRACs [3] and correspondingly provide different representations of efficiency. DOE has compared the stringency of standards in ASHRAE Standard 90.1–2019 (in terms of NSenCOP) to the corresponding current Federal energy conservation standards (in terms of SCOP) by conducting a crosswalk analysis. Based on the results of that analysis, DOE has concluded that the ASHRAE Standard 90.1–2019 levels are equivalent in stringency to the current Federal standards for six equipment classes and are more stringent than the current Federal standards for the remaining 46 equipment classes of CRACs.

For all CRAC equipment classes, DOE has determined that there is not clear and convincing evidence of significant additional energy savings to justify amended standards for CRACs that are more stringent than the ASHRAE Standard 90.1–2019 levels. Clear and convincing evidence would exist only where the specific facts and data made available to DOE regarding a particular ASHRAE amendment demonstrate that there is no substantial doubt that a standard more stringent than that contained in the ASHRAE Standard 90.1 amendment is permitted because it would result in a significant additional amount of energy savings, and it is technologically feasible and economically justified.

DOE normally performs multiple in-depth analyses to determine whether there is clear and convincing evidence to support more-stringent energy conservation standards (*i.e.,* whether more-stringent standards would produce significant additional conservation of energy and be technologically feasible and economically justified). However, as discussed in section V.A of this document, due to the lack of available market and performance data, DOE is unable to conduct the analysis necessary to evaluate the potential energy savings or evaluate whether more-stringent standards would be technologically feasible or economically justified, with sufficient certainty. Therefore, in accordance with the statutory provisions discussed in this section and elsewhere in this document, DOE is amending the energy conservation standards for CRACs so as to correspond to the efficiency levels specified for CRACs in ASHRAE Standard 90.1–2019. The amended standards, which are expressed in terms of NSenCOP, are presented in Table I–1 and Table I–2. These standards will apply to all CRACs listed in Table I–1 and Table I–2 manufactured in, or imported into, the United States starting on the compliance date 360 days after the publication date of this final rule. See section IV.D of this final rule for a discussion on the applicable lead times considered to determine this compliance date.

TABLE I–1—AMENDED ENERGY CONSERVATION STANDARDS FOR FLOOR-MOUNTED CRACS

Equipment type	Net sensible cooling capacity [1]	Minimum NSenCOP efficiency		Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Downflow	Upflow ducted		Upflow non-ducted	Horizontal flow
Air-Cooled	<80,000 Btu/h [2]	2.70	2.67	<65,000 Btu/h	2.16	2.65
	≥80,000 Btu/h and <295,000 Btu/h	2.58	[3] 2.55	≥65,000 Btu/h and <240,000 Btu/h	2.04	2.55
	≥295,000 Btu/h and <930,000 Btu/h	2.36	2.33	≥240,000 Btu/h and <760,000 Btu/h	1.89	2.47
Air-Cooled with Fluid Economizer.	<80,000 Btu/h	2.70	2.67	<65,000 Btu/h	[3] 2.09	2.65
	≥80,000 Btu/h and <295,000 Btu/h	2.58	[3] 2.55	≥65,000 Btu/h and <240,000 Btu/h	[3] 1.99	2.55
	≥295,000 Btu/h and <930,000 Btu/h	2.36	2.33	≥240,000 Btu/h and <760,000 Btu/h	1.81	2.47
Water-Cooled	<80,000 Btu/h	2.82	2.79	<65,000 Btu/h	2.43	2.79
	≥80,000 Btu/h and <295,000 Btu/h	2.73	[3] 2.70	≥65,000 Btu/h and <240,000 Btu/h	2.32	2.68
	≥295,000 Btu/h and <930,000 Btu/h	2.67	2.64	≥240,000 Btu/h and <760,000 Btu/h	2.20	2.60
Water-Cooled with Fluid Economizer.	<80,000 Btu/h	2.77	2.74	<65,000 Btu/h	2.35	2.71
	≥80,000 Btu/h and <295,000 Btu/h	2.68	[3] 2.65	≥65,000 Btu/h and <240,000 Btu/h	2.24	2.60

[3] Additionally, for water-cooled and glycol-cooled CRACs, NSenCOP includes power adders to account for power that would be consumed in field installations by pumps and heat rejection component (*e.g.,* cooling tower or dry cooler) fans. *See* section III.C of this final rule for further discussion of the evaluation of differences between SCOP and NSenCOP.

TABLE I–1—AMENDED ENERGY CONSERVATION STANDARDS FOR FLOOR-MOUNTED CRACs—Continued

Equipment type	Net sensible cooling capacity [1]	Minimum NSenCOP efficiency		Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Downflow	Upflow ducted		Upflow non-ducted	Horizontal flow
	≥295,000 Btu/h and <930,000 Btu/h	2.61	2.58	≥240,000 Btu/h and <760,000 Btu/h	2.12	2.54
Glycol-Cooled	<80,000 Btu/h	2.56	2.53	<65,000 Btu/h	2.08	2.48
	≥80,000 Btu/h and <295,000 Btu/h	2.24	2.21	≥65,000 Btu/h and <240,000 Btu/h	1.90	2.18
	≥295,000 Btu/h and <930,000 Btu/h	2.21	2.18	≥240,000 Btu/h and <760,000 Btu/h	1.81	2.18
Glycol-Cooled with Fluid Economizer.	<80,000 Btu/h	2.51	2.48	<65,000 Btu/h	2.00	2.44
	≥80,000 Btu/h and <295,000 Btu/h	2.19	2.16	≥65,000 Btu/h and <240,000 Btu/h	1.82	2.10
	≥295,000 Btu/h and <930,000 Btu/h	2.15	2.12	≥240,000 Btu/h and <760,000 Btu/h	1.73	2.10

[1] For downflow and upflow-ducted CRACs, the NSCC measured per AHRI 1360–2017 and the latest update to the standard, AHRI 1360–2022, is higher than the NSCC measured per the current Federal test procedure (which references ANSI/ASHRAE 127–2007). Therefore, to ensure equipment currently covered by Federal standards is not removed from coverage, DOE translated the currently applicable upper capacity limit for these classes (760,000 Btu/h) to NSCC as measured per AHRI 1360–2017 and AHRI 1360–2022, resulting in a crosswalked upper capacity boundary of 930,000 Btu/h. Consequently, DOE has used 930,000 Btu/h as the translated upper capacity limit for downflow and upflow-ducted CRACs in the analysis presented in this notice. For up-flow non-ducted CRACs, because there is no change in return air temperature conditions between ANSI/ASHRAE 127–2007 and AHRI 1360–2022, the capacity boundaries in ASHRAE Standard 90.1–2019 remain the same as those specified in the current Federal standards, and DOE correspondingly retains the current capacity boundaries. For horizontal-flow CRACs, DOE does not currently prescribe standards; therefore, a crosswalk of current capacity boundaries is not applicable. See section III.C.5 of this final rule for further discussion of DOE's crosswalk analysis of capacity boundaries for CRACs.

[2] Btu/h refers to "British thermal units per hour."

[3] The amended standard for this equipment class is of equivalent stringency to the currently applicable Federal standard—the adopted level is a translation from the current metric (SCOP) to the adopted metric (NSenCOP) and aligns with the corresponding level in ASHRAE Standard 90.1.

TABLE I–2—AMENDED ENERGY CONSERVATION STANDARDS FOR CEILING-MOUNTED CRACs

Equipment type	Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Ducted	Non-ducted
Air-Cooled with Free Air Discharge Condenser	<29,000 Btu/h	2.05	2.08
	≥29,000 Btu/h and <65,000 Btu/h	2.02	2.05
	≥65,000 Btu/h and <760,000 Btu/h	1.92	1.94
Air-Cooled with Free Air Discharge Condenser and Fluid Economizer.	<29,000 Btu/h	2.01	2.04
	≥29,000 Btu/h and <65,000 Btu/h	1.97	2.00
	≥65,000 Btu/h and <760,000 Btu/h	1.87	1.89
Air-Cooled with Ducted Condenser	<29,000 Btu/h	1.86	1.89
	≥29,000 Btu/h and <65,000 Btu/h	1.83	1.86
	≥65,000 Btu/h and <760,000 Btu/h	1.73	1.75
Air-Cooled with Ducted Condenser and Fluid Economizer.	<29,000 Btu/h	1.82	1.85
	≥29,000 Btu/h and <65,000 Btu/h	1.78	1.81
	≥65,000 Btu/h and <760,000 Btu/h	1.68	1.70
Water-Cooled	<29,000 Btu/h	2.38	2.41
	≥29,000 Btu/h and <65,000 Btu/h	2.28	2.31
	≥65,000 Btu/h and <760,000 Btu/h	2.18	2.20
Water-Cooled with Fluid Economizer	<29,000 Btu/h	2.33	2.36
	≥29,000 Btu/h and <65,000 Btu/h	2.23	2.26
	≥65,000 Btu/h and <760,000 Btu/h	2.13	2.16
Glycol-Cooled	<29,000 Btu/h	1.97	2.00
	≥29,000 Btu/h and <65,000 Btu/h	1.93	1.98
	≥65,000 Btu/h and <760,000 Btu/h	1.78	1.81
Glycol-Cooled with Fluid Economizer	<29,000 Btu/h	1.92	1.95
	≥29,000 Btu/h and <65,000 Btu/h	1.88	1.93
	≥65,000 Btu/h and <760,000 Btu/h	1.73	1.76

II. Introduction

The following section briefly discusses the statutory authority underlying this final rule, as well as some of the relevant historical background related to the establishment of standards for CRACs.

A. Authority

EPCA, Public Law 94–163 (42 U.S.C. 6291–6317, as codified), among other things, authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part C of EPCA, added by Public Law 95–619, Title IV, section 441(a), (42 U.S.C. 6311–6317, as codified), established the Energy Conservation Program for Certain Industrial Equipment, which sets forth a variety of provisions designed to improve energy efficiency. This equipment includes small, large, and very large commercial package air conditioning and heating equipment, which includes CRACs, the subject of this rulemaking. (42 U.S.C. 6311(1)(B)–(D)) Pursuant to EPCA, DOE is required to consider amending the energy conservation standards for certain types of commercial and industrial equipment, including the equipment at issue in this document, whenever ASHRAE amends the standard levels or design requirements prescribed in ASHRAE/IES Standard 90.1, and under a separate statutory provision, DOE must consider amendments to the standards for such equipment, at a minimum, every six years, regardless of ASHRAE action. (42 U.S.C. 6313(a)(6)(A)–(C))

Under EPCA, the energy conservation program consists essentially of four parts: (1) testing, (2) labeling, (3) the establishment of Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA specifically include definitions (42 U.S.C. 6311), energy conservation standards (42 U.S.C. 6313), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), and the authority to require information and reports from manufacturers (42 U.S.C. 6316).

Federal energy efficiency requirements for covered equipment established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6316(a) and 42 U.S.C. 6316(b); 42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption in limited circumstances for particular State laws or regulations, in accordance with the procedures and other provisions set forth under EPCA. (42 U.S.C. 6297(d); 42 U.S.C. 6316(a); 42 U.S.C. 6316(b)(2)(D))

Subject to certain criteria and conditions, DOE is required to develop test procedures to measure the energy efficiency, energy use, or estimated annual operating cost of each covered equipment during a representative average use cycle and that are not unduly burdensome to conduct. (42 U.S.C. 6314(a)(2)) Manufacturers of covered equipment must use the Federal test procedures as the basis for: (1) certifying to DOE that their equipment complies with the applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6316(b); 42 U.S.C. 6296), and (2) making representations about the energy use or efficiency of that equipment (42 U.S.C. 6314(d)). Similarly, DOE uses these test procedures to determine whether the equipment complies with relevant standards promulgated under EPCA. The DOE test procedures for CRACs appear at 10 CFR part 431, subpart F.

ASHRAE Standard 90.1 sets industry energy efficiency levels for small, large, and very large commercial package air-conditioning and heating equipment, packaged terminal air conditioners, packaged terminal heat pumps, warm air furnaces, packaged boilers, storage water heaters, instantaneous water heaters, and unfired hot water storage tanks (collectively referred to as ''ASHRAE equipment''). For each type of listed equipment, EPCA directs that if ASHRAE amends ASHRAE Standard 90.1 with respect to the standard levels or design requirements applicable under that standard, DOE must adopt amended standards at the new ASHRAE efficiency level, unless DOE determines, supported by clear and convincing evidence,[4] that adoption of a more-stringent level would produce significant additional conservation of energy and would be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)) If DOE makes such a determination, it must publish a final rule to establish the more-stringent standards. (42 U.S.C. 6313(a)(6)(B)(i))

Although EPCA does not explicitly define the term ''amended'' in the context of what type of revision to ASHRAE Standard 90.1 would trigger DOE's obligation, DOE's longstanding interpretation has been that the statutory trigger is an amendment to the standard applicable to that equipment under ASHRAE Standard 90.1 that increases the energy efficiency level for that equipment. *See* 72 FR 10038, 10042 (March 7, 2007). If the revised ASHRAE Standard 90.1 leaves the energy efficiency level unchanged (or lowers the energy efficiency level) as compared to the energy efficiency level specified by the uniform national standard adopted pursuant to EPCA, regardless of the other amendments made to the ASHRAE Standard 90.1 requirement (*e.g.,* the inclusion of an additional metric), DOE has stated that it does not have authority to conduct a rulemaking pursuant to 42 U.S.C. 6313(a)(6)(A) to consider a higher standard for that equipment, although this does not limit DOE's authority to consider higher standards as part of a six-year-lookback rulemaking analysis (pursuant to 42 U.S.C. 6313(a)(6)(C); see discussion in the following paragraphs). *See* 74 FR 36312, 36313 (July 22, 2009) and 77 FR 28928, 28937 (May 16, 2012). If an amendment to ASHRAE Standard 90.1 changes the metric for the standard on which the Federal requirement was based, DOE performs a crosswalk analysis to determine whether the amended metric under ASHRAE Standard 90.1 results in an energy efficiency level more stringent than the current DOE standard.

Under EPCA, DOE must also review its energy conservation standards for CRACs every six years and either: (1) issue a notice of determination that the standards do not need to be amended, as adoption of a more stringent level is not supported by clear and convincing evidence; or (2) issue a notice of proposed rulemaking including new proposed standards based on certain criteria and procedures in subparagraph (B).[5] (42 U.S.C. 6313(a)(6)(C))

In deciding whether a more-stringent standard is economically justified, under either the provisions of 42 U.S.C. 6313(a)(6)(A) or 42 U.S.C. 6313(a)(6)(C), DOE must determine whether the benefits of the standard exceed its burdens. DOE must make this determination after receiving comments on the proposed standard, and by considering, to the maximum extent practicable, the following seven factors:

(1) The economic impact of the standard on manufacturers and consumers of products subject to the standard;

(2) The savings in operating costs throughout the estimated average life of the covered equipment in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered equipment that are likely to result from the standard;

(3) The total projected amount of energy savings likely to result directly from the standard;

(4) Any lessening of the utility or the performance of the covered equipment likely to result from the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

(6) The need for national energy conservation; and

(7) Other factors the Secretary of Energy considers relevant.

(42 U.S.C. 6313(a)(6)(B)(ii)(I)–(VII))

Further, EPCA establishes a rebuttable presumption that an energy conservation standard is economically justified if the Secretary finds that the additional cost to the consumer of purchasing a product that complies with the standard will be less than three times the value of the energy (and, as applicable, water) savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure. (42

[4] The clear and convincing threshold is a heightened standard, and would only be met where the Secretary has an abiding conviction, based on available facts, data, and DOE's own analyses, that it is highly probable an amended standard would result in a significant additional amount of energy savings, and is technologically feasible and economically justified. *American Public Gas Association* v. *U.S. Dep't of Energy,* No. 20–1068, 2022 WL 151923, at *4 (D.C. Cir. January 18, 2022) (citing *Colorado* v. *New Mexico,* 467 U.S. 310, 316, 104 S.Ct. 2433, 81 L.Ed.2d 247 (1984)).

[5] In relevant part, subparagraph (B) specifies that: (1) in making a determination of economic justification, DOE must consider, to the maximum extent practicable, the benefits and burdens of an amended standard based on the seven criteria described in EPCA; (2) DOE may not prescribe any standard that increases the energy use or decreases the energy efficiency of covered equipment; and (3) DOE may not prescribe any standard that interested persons have established by a preponderance of evidence is likely to result in the unavailability in the United States of any product type (or class) of performance characteristics (including reliability, features, sizes, capacities, and volumes) that are substantially the same as those generally available in the United States. (42 U.S.C. 6313(a)(6)(B)(ii)–(iii))

U.S.C. 6295(o)(2)(B)(iii)) However, while this rebuttable presumption analysis applies to most commercial and industrial equipment (42 U.S.C. 6316(a)), it is not a required analysis for ASHRAE equipment (42 U.S.C. 6316(b)(1)).

EPCA, as codified, also contains what is known as an ''anti-backsliding'' provision, which prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6313(a)(6)(B)(iii)(I)) Also, the Secretary may not prescribe an amended or new standard if interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any covered equipment type (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the United States. (42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa))

B. Background

1. Current Standards

EPCA defines ''commercial package air conditioning and heating equipment'' as air-cooled, water-cooled, evaporatively-cooled, or water-source (not including ground-water-source) electrically operated, unitary central air conditioners and central air conditioning heat pumps for commercial application. (42 U.S.C. 6311(8)(A); 10 CFR 431.92) EPCA further classifies ''commercial package air conditioning and heating equipment'' into categories based on cooling capacity (*i.e.,* small, large, and very large categories). (42 U.S.C. 6311(8)(B)–(D); 10 CFR 431.92) ''Small commercial package air conditioning and heating equipment'' means equipment rated below 135,000 Btu/h (cooling capacity). (42 U.S.C. 6311(8)(B); 10 CFR 431.92) ''Large commercial package air conditioning and heating equipment'' means equipment rated: (i) At or above 135,000 Btu/h; and (ii) below 240,000 Btu/h (cooling capacity). (42 U.S.C. 6311(8)(C); 10 CFR 431.92) ''Very large commercial package air conditioning and heating equipment'' means equipment rated: (i) At or above 240,000 Btu/h; and (ii) below 760,000 Btu/h (cooling capacity). (42 U.S.C. 6311(8)(D); 10 CFR 431.92)

Pursuant to its authority under EPCA (42 U.S.C. 6313(a)(6)(A)) and in response to updates to ASHRAE Standard 90.1, DOE has established the category of CRAC, which meets the EPCA definition of ''commercial package air conditioning and heating equipment,'' but which EPCA did not expressly identify. *See* 10 CFR 431.92 and 10 CFR 431.97. Within this equipment category, further distinctions are made at the equipment class level based on capacity and other equipment attributes.

DOE has recently amended the definition of CRAC in a test procedure final rule issued in March 2023 (March 2023 TP final rule). *See* EERE–2021–BT–TP–0017. Specifically, DOE has revised the definition to include how the manufacturer markets a model for use, consistent with the definition in the industry standard, AHRI 1360–2022, which also defines CRACs based on marketing. *Id.* The amended definition notes that CRACs include, but are not limited to, the following configurations as defined in 10 CFR 431.92: down-flow, horizontal-flow, up-flow ducted, up-flow non-ducted, ceiling-mounted ducted, ceiling mounted non-ducted, roof-mounted, and wall-mounted. *Id.*

In a final rule published in the **Federal Register** on May 16, 2012 (May 2012 final rule), DOE established energy conservation standards for CRACs. Compliance with standards was required for units manufactured: (1) on and after October 29, 2012, for equipment classes with NSCC less than 65,000 Btu/h and (2) on or after October 29, 2013, for equipment classes with NSCC greater than or equal to 65,000 Btu/h and less than 760,000 Btu/h. 77 FR 28929, 28995. These standards are set forth in DOE's regulations at 10 CFR 431.97 and are repeated in Table II–1.

TABLE II–1—CURRENT FEDERAL ENERGY CONSERVATION STANDARDS

Equipment type	Net sensible cooling capacity	Minimum SCOP efficiency	
		Downflow	Upflow
Air-Cooled	<65,000 Btu/h	2.20	2.09
	≥65,000 Btu/h and <240,000 Btu/h	2.10	1.99
	≥240,000 Btu/h and <760,000 Btu/h	1.90	1.79
Water-Cooled	<65,000 Btu/h	2.60	2.49
	≥65,000 Btu/h and <240,000 Btu/h	2.50	2.39
	≥240,000 Btu/h and <760,000 Btu/h	2.40	2.29
Water-Cooled with a Fluid Economizer	<65,000 Btu/h	2.55	2.44
	≥65,000 Btu/h and <240,000 Btu/h	2.45	2.34
	≥240,000 Btu/h and <760,000 Btu/h	2.35	2.24
Glycol-Cooled	<65,000 Btu/h	2.50	2.39
	≥65,000 Btu/h and <240,000 Btu/h	2.15	2.04
	≥240,000 Btu/h and <760,000 Btu/h	2.10	1.99
Glycol-Cooled with a Fluid Economizer	<65,000 Btu/h	2.45	2.34
	≥65,000 Btu/h and <240,000 Btu/h	2.10	1.99
	≥240,000 Btu/h and <760,000 Btu/h	2.05	1.94

DOE's current equipment classes for CRACs are differentiated by condenser heat rejection medium (air-cooled, water-cooled, water-cooled with fluid economizer, glycol-cooled, or glycol-cooled with fluid economizer), NSCC (less than 65,000 Btu/h, greater than or equal to 65,000 Btu/h and less than 240,000 Btu/h, or greater than or equal to 240,000 Btu/h and less than 760,000 Btu/h), and direction of conditioned air over the cooling coil (upflow or downflow). 10 CFR 431.97.

As noted previously, DOE's test procedure for CRACs was last amended in the March 2023 TP final rule, and is set forth at appendix E1 to Subpart F of 10 CFR part 431. *See* EERE–2021–BT–TP–0017. The amended test procedure incorporates by reference AHRI Standard 1360–2022, ''Performance Rating of Computer and Data Processing Room Air Conditioners'' (AHRI 1360–2022) and uses the energy efficiency metric, NSenCOP, for all CRAC equipment classes. *Id.* Testing in accordance with the amended test procedure is not required until such time as compliance is required with amended energy conservation standards for CRACs that rely on NSenCOP. *Id.* In parallel, DOE also established appendix E, which continues to reference ANSI/ASHRAE 127–2007 and provide instructions for determining SCOP. *Id.* CRACs are required to be tested according to appendix E until such time as compliance is required with amended energy conservation standards that rely on the NSenCOP metric. *Id.*

2. History of Standards Rulemaking for CRACs

As discussed, the energy conservation standards for CRACs were most recently amended in the May 2012 final rule. 77 FR 28928 (May 16, 2012). The May 2012 final rule established equipment classes for CRACs and adopted energy conservation standards that correspond to the levels in the 2010 revision of ASHRAE Standard 90.1 (ASHRAE Standard 90.1–2010).

ASHRAE released the 2016 version of ASHRAE Standard 90.1 (ASHRAE Standard 90.1–2016) on October 26, 2016, which updated its test procedure reference for CRACs from ANSI/ASHRAE 127–2007 to AHRI Standard 1360–2016, ''*Performance Rating of Computer and Data Processing Room Air Conditioners*'' (AHRI 1360–2016), which in turn references ANSI/ASHRAE 127–2012, ''*Method of Testing for Rating Computer and Data Processing Room Unitary Air Conditioners*'' (ANSI/ASHRAE 127–2012). The energy efficiency metric for CRACs in AHRI 1360–2016 is NSenCOP. ASHRAE Standard 90.1–2016 established new equipment classes and added efficiency levels for horizontal-flow CRACs, disaggregated the upflow CRAC equipment classes into upflow ducted and upflow non-ducted equipment classes, and established different sets of efficiency levels for upflow ducted and upflow non-ducted equipment classes based on the corresponding rating conditions specified in AHRI 1360–2016.

DOE published a notice of data availability and request for information (NODA/RFI) in response to the amendments to the industry consensus standard contained in ASHRAE Standard 90.1–2016 in the **Federal Register** on September 11, 2019 (September 2019 NODA/RFI). 84 FR 48006. In the September 2019 NODA/RFI, DOE explained its methodology and assumptions to compare the current Federal standards for CRACs (in terms of SCOP as measured per ANSI/ASHRAE 127–2007) to the levels in ASHRAE Standard 90.1–2016 (in terms of NSenCOP and measured per AHRI 1360–2016) and requested comment on its methodology and results. 84 FR 48006, 48014–48019 (Sept. 11, 2019).

On October 24, 2019, ASHRAE officially released for distribution and made public ASHRAE Standard 90.1–2019. ASHRAE Standard 90.1–2019 updated its test procedure reference for CRACs from AHRI 1360–2016 to AHRI 1360–2017, which also references ANSI/ASHRAE 127–2012. ASHRAE Standard 90.1–2019 maintained the equipment class structure for floor-mounted CRACs as established in ASHRAE Standard 90.1–2016 and updated the efficiency levels in ASHRAE Standard 90.1–2016 for all but three of those equipment classes. ASHRAE Standard 90.1–2019 also added classes for air-cooled CRACs with fluid economizers and a new table with new efficiency levels for ceiling-mounted CRAC equipment classes. The equipment in the horizontal-flow and ceiling-mounted classes is currently not subject to Federal standards set forth in 10 CFR 431.97.[6] In contrast, upflow and downflow air-cooled CRACs with fluid economizers are currently subject to the Federal standards in 10 CFR 431.97 for air-cooled equipment classes.

DOE also published a NODA/RFI in response to the amendments in ASHRAE Standard 90.1–2019 and the comments received in response to the September 2019 NODA/RFI, in the **Federal Register** on September 25, 2020 (September 2020 NODA/RFI). 85 FR 60642. In the September 2020 NODA/RFI, DOE conducted a crosswalk analysis (similar to the September 2019 NODA/RFI) to compare the current Federal standards for CRACs (in terms of SCOP as measured per ANSI/ASHRAE 127–2007) to the levels in ASHRAE Standard 90.1–2019 (in terms of NSenCOP as measured per AHRI 1360–2017) and requested comment on its methodology and results. 85 FR 60642, 60653–60660 (Sept. 25, 2020).

Subsequently, on March 7, 2022, DOE published in the **Federal Register** a NOPR proposing amended CRAC standards in alignment with ASHRAE Standard 90.1–2019 (March 2022 ECS NOPR). 87 FR 12802. In the March 2022 ECS NOPR, DOE outlined the plan to crosswalk the existing CRAC energy conservation standards (denominated in terms of SCOP) to the standards in ASHRAE Standard 90.1–2019 (denominated in terms of NSenCOP) and requested comment. DOE received comments in response to the March 2022 ECS NOPR from the interested parties listed in Table II–2.

TABLE II–2—MARCH 2022 ECS NOPR WRITTEN COMMENTS

Commenter(s)	Abbreviation	Comment number in the docket	Commenter type
Air-Conditioning, Heating & Refrigeration Institute	AHRI	0012	Industry Trade Association.
New York State Energy Research and Development Authority	NYSERDA[7]	0014	State Agency.
Pacific Gas and Electric Company, San Diego Gas & Electric, Southern California Edison (collectively referred to as the California Investor-owned Utilities or CA IOUs).	CA IOUs	0013	Utilities.

A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public record.[8] To the extent that interested parties have provided written comments that are substantively consistent with any oral comments provided during the April 13, 2022, public meeting webinar for the CRACs ECS NOPR, DOE cites the written comments throughout this final rule. In this case, there were no relevant

[6] DOE issued a draft guidance document on October 7, 2015, to clarify that horizontal-flow and ceiling-mounted CRACs are covered equipment and are required to be tested under the current DOE test procedure for purposes of making representations of energy consumption. (Docket No. EERE–2014–BT–GUID–0022, No. 3, pp. 1–2)

[7] NYSERDA's comment was received three days after the comment deadline.

[8] The parenthetical reference provides a reference for information located in the docket of DOE's rulemaking to develop energy conservation standards for CRACs. (Docket No. EERE–2020–BT–STD–0008, which is maintained at *www.regulations.gov*). The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

webinar comments that were not reflected in written comments.

Additionally, on February 7, 2022, DOE published in the **Federal Register** a test procedure NOPR (February 2022 TP NOPR), in which DOE proposed an amended test procedure for CRACs that would incorporate by reference the substance of a draft version of AHRI 1360 standard, AHRI Standard 1360–202X, *Performance Rating of Computer and Data Processing Room Air Conditioners* (AHRI 1360–202X Draft) and adopts NSenCOP as the test metric for CRACs. 87 FR 6948. At the time of the publication of the February 2022 TP NOPR, AHRI Standard 1360–202X Draft was in draft form, and its text was provided to the Department for the purposes of review. As stated in the February 2022 TP NOPR, DOE intended to update the reference to the final published version of AHRI 1360–202X Draft. 87 FR 6948, 6951 (Feb. 7, 2022). In November 2022, AHRI finalized AHRI 1360–202X Draft by publishing AHRI 1360–2022. AHRI 1360–2022 did not include any substantial changes from the AHRI–1360–202X Draft that was referenced in the February 2022 TP NOPR.

Subsequently, in March 2023, DOE issued the March 2023 TP final rule updating the reference to AHRI 1360–2022. *See* EERE–2021–BT–TP–0017.

III. General Discussion

DOE developed this final rule after considering oral and written comments, data, and information from interested parties that represent a variety of interests. The following discussion addresses issues raised by these commenters.

This final rule covers commercial equipment that meet the definition of CRACs, as codified at 10 CFR 431.92.

A. Background

As mentioned, DOE presented an efficiency crosswalk analysis in the September 2020 NODA/RFI to compare the stringency of the current Federal standards (represented in terms of SCOP based on the current DOE test procedure) for CRACs to the stringency of the efficiency levels for this equipment in ASHRAE Standard 90.1–2019 (represented in terms of NSenCOP and based on AHRI 1360–2017). 85 FR 60642, 60648 (Sept. 25, 2020). In the February 2022 TP NOPR, DOE proposed to incorporate by reference the then latest draft version of AHRI Standard 1360, AHRI 1360–202X Draft, and to adopt NSenCOP as the test metric in the DOE test procedure for CRACs. 87 FR 6948 (Feb. 7, 2022). In the March 2022 ECS NOPR, DOE noted that because the rating conditions specified in AHRI 1360–2017 and AHRI 1360–202X Draft are the same for the classes covered by DOE's crosswalk analysis (upflow ducted, upflow non-ducted, and downflow), the same crosswalk as described in the September 2020 NODA/RFI can be used to compare DOE's current SCOP-based CRAC standards to relevant NSenCOP values determined according to AHRI 1360–202X Draft. 87 FR 12802, 12808 (March 7, 2022).

In November 2022, AHRI finalized AHRI 1360–202X Draft and published AHRI 1360–2022. Subsequently, in the March 2023 TP final rule, DOE adopted AHRI 1360–2022. *See* EERE–2021–BT–TP–0017. The rating conditions specified in AHRI 1360–2022 and AHRI 1360–202X Draft are unchanged for the classes covered by DOE's crosswalk analysis, so accordingly, DOE has concluded that the crosswalk as described in the September 2020 NODA/RFI can be used to compare DOE's current SCOP-based CRAC standards to relevant NSenCOP values determined according to AHRI 1360–2022.

In the September 2020 NODA/RFI, DOE's analysis focused on whether DOE had been triggered by ASHRAE Standard 90.1–2019 updates to minimum efficiency levels for CRACs and whether more-stringent standards were warranted. As discussed in detail in section III.C of this final rule, DOE conducted a crosswalk analysis of the ASHRAE Standard 90.1–2019 standard levels (in terms of NSenCOP) and the corresponding current Federal energy conservation standards (in terms of SCOP) to compare the stringencies. DOE has determined that the updates in ASHRAE Standard 90.1–2019 increased the stringency of efficiency levels for 48 equipment classes and maintained equivalent levels for 6 equipment classes of CRACs relative to the current Federal standard. In addition, ASHRAE Standard 90.1–2019 includes efficiency levels for 18 classes of horizontal-flow CRACs and 48 classes of ceiling-mounted CRACs which are not currently subject to Federal standards and, therefore, require no crosswalk. As discussed in section V of this document, DOE is adopting standards for horizontal-flow CRACs and ceiling-mounted CRACs.

Table III–1 shows the equipment classes and efficiency levels for CRACs provided in ASHRAE Standard 90.1–2019 alongside the current Federal energy conservation standards. Table III–1 also displays the corresponding existing Federal equipment classes for clarity and indicates whether the updated levels in ASHRAE Standard 90.1–2019 trigger DOE's evaluation pursuant to 42 U.S.C. 6313(a)(6)(A) (*i.e.,* whether the update results in a standard level more stringent than the current Federal level).

TABLE III–1—ENERGY EFFICIENCY LEVELS FOR CRACS IN ASHRAE STANDARD 90.1–2019 AND THE CORRESPONDING FEDERAL ENERGY CONSERVATION STANDARDS

ASHRAE standard 90.1–2019 equipment class [1]	Current federal equipment class [1]	Energy efficiency levels in ASHRAE standard 90.1–2019 [2]	Federal energy conservation standards [2]	DOE triggered by ASHRAE standard 90.1–2019 amendment?
Air-Cooled, <80,000 Btu/h, Downflow	Air-Cooled, <65,000 Btu/h, Downflow	2.70 NSenCOP	2.20 SCOP	Yes
Air-Cooled, <65,000 Btu/h, Horizontal-flow.	N/A	2.65 NSenCOP	N/A	Yes [3]
Air-Cooled, <80,000 Btu/h, Upflow Ducted.	Air-Cooled, <65,000 Btu/h, Upflow	2.67 NSenCOP	2.09 SCOP	Yes
Air-Cooled, <65,000 Btu/h, Upflow Non-Ducted.	Air-Cooled, <65,000 Btu/h, Upflow	2.16 NSenCOP	2.09 SCOP	Yes
Air-Cooled, ≥80,000 and <295,000 Btu/h, Downflow.	Air-Cooled, ≥65,000 and <240,000 Btu/h, Downflow.	2.58 NSenCOP	2.10 SCOP	Yes
Air-Cooled, ≥65,000 and <240,000 Btu/h, Horizontal-flow.	N/A	2.55 NSenCOP	N/A	Yes [3]
Air-Cooled, ≥80,000 and <295,000 Btu/h, Upflow Ducted.	Air-Cooled, ≥65,000 and <240,000 Btu/h, Upflow.	2.55 NSenCOP	1.99 SCOP	No [4]

TABLE III–1—ENERGY EFFICIENCY LEVELS FOR CRACS IN ASHRAE STANDARD 90.1–2019 AND THE CORRESPONDING FEDERAL ENERGY CONSERVATION STANDARDS—Continued

ASHRAE standard 90.1–2019 equipment class [1]	Current federal equipment class [1]	Energy efficiency levels in ASHRAE standard 90.1–2019 [2]	Federal energy conservation standards [2]	DOE triggered by ASHRAE standard 90.1–2019 amendment?
Air-Cooled, ≥65,000 and <240,000 Btu/h, Upflow Non-Ducted.	Air-Cooled, ≥65,000 and <240,000 Btu/h, Upflow.	2.04 NSenCOP	1.99 SCOP	Yes
Air-Cooled, ≥295,000 Btu/h, Downflow	Air-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Downflow.	2.36 NSenCOP	1.90 SCOP	Yes
Air-Cooled, ≥240,000 Btu/h, Horizontal-flow.	N/A	2.47 NSenCOP	N/A	Yes [3]
Air-Cooled, ≥295,000 Btu/h, Upflow Ducted.	Air-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Upflow.	2.33 NSenCOP	1.79 SCOP	Yes
Air-Cooled, ≥240,000 Btu/h, Upflow Non-ducted.	Air-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Upflow.	1.89 NSenCOP	1.79 SCOP	Yes
Air-Cooled with fluid economizer, <80,000 Btu/h, Downflow.	Air-Cooled, <65,000 Btu/h, Downflow	2.70 NSenCOP	2.20 SCOP	Yes [5]
Air-Cooled with fluid economizer, <65,000 Btu/h, Horizontal-flow.	N/A	2.65 NSenCOP	N/A	Yes [3]
Air-Cooled with fluid economizer, <80,000 Btu/h, Upflow Ducted.	Air-Cooled, <65,000 Btu/h, Upflow	2.67 NSenCOP	2.09 SCOP	Yes [5]
Air-Cooled with fluid economizer, <65,000 Btu/h, Upflow Non-Ducted.	Air-Cooled, <65,000 Btu/h, Upflow	2.09 NSenCOP	2.09 SCOP	No [4]
Air-Cooled with fluid economizer, ≥80,000 and <295,000 Btu/h, Downflow.	Air-Cooled, ≥65,000 and <240,000 Btu/h, Downflow.	2.58 NSenCOP	2.10 SCOP	Yes [5]
Air-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Horizontal-flow.	N/A	2.55 NSenCOP	N/A	Yes [3]
Air-Cooled with fluid economizer, ≥80,000 and <295,000 Btu/h, Upflow Ducted.	Air-Cooled, ≥65,000 and <240,000 Btu/h, Upflow.	2.55 NSenCOP	1.99 SCOP	No [4]
Air-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Upflow Non-Ducted.	Air-Cooled, ≥65,000 and <240,000 Btu/h, Upflow.	1.99 NSenCOP	1.99 SCOP	No [4]
Air-Cooled with fluid economizer, ≥295,000 Btu/h, Downflow.	Air-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Downflow.	2.36 NSenCOP	1.90 SCOP	Yes [5]
Air-Cooled with fluid economizer, ≥240,000 Btu/h, Horizontal-flow.	N/A	2.47 NSenCOP	N/A	Yes [3]
Air-Cooled with fluid economizer, ≥295,000 Btu/h, Upflow Ducted.	Air-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Upflow.	2.33 NSenCOP	1.79 SCOP	Yes [5]
Air-Cooled with fluid economizer, ≥240,000 Btu/h, Upflow Non-ducted.	Air-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Upflow.	1.81 NSenCOP	1.79 SCOP	Yes [5]
Water-Cooled, <80,000 Btu/h, Downflow.	Water-Cooled, <65,000 Btu/h, Downflow.	2.82 NSenCOP	2.60 SCOP	Yes
Water-Cooled, <65,000 Btu/h, Horizontal-flow.	N/A	2.79 NSenCOP	N/A	Yes [3]
Water-Cooled, <80,000 Btu/h, Upflow Ducted.	Water-Cooled, <65,000 Btu/h, Upflow	2.79 NSenCOP	2.49 SCOP	Yes
Water-Cooled, <65,000 Btu/h, Upflow Non-ducted.	Water-Cooled, <65,000 Btu/h, Upflow	2.43 NSenCOP	2.49 SCOP	Yes
Water-Cooled, ≥80,000 and <295,000 Btu/h, Downflow.	Water-Cooled, ≥65,000 and <240,000 Btu/h, Downflow.	2.73 NSenCOP	2.50 SCOP	Yes
Water-Cooled, ≥65,000 and <240,000 Btu/h, Horizontal-flow.	N/A	2.68 NSenCOP	N/A	Yes [3]
Water-Cooled, ≥80,000 and <295,000 Btu/h, Upflow Ducted.	Water-Cooled, ≥65,000 and <240,000 Btu/h, Upflow.	2.70 NSenCOP	2.39 SCOP	No [4]
Water-Cooled, ≥65,000 and <240,000 Btu/h, Upflow Non-ducted.	Water-Cooled, ≥65,000 and <240,000 Btu/h, Upflow.	2.32 NSenCOP	2.39 SCOP	Yes
Water-Cooled, ≥295,000 Btu/h, Downflow.	Water-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Downflow.	2.67 NSenCOP	2.40 SCOP	Yes
Water-Cooled, ≥240,000 Btu/h, Horizontal-flow.	N/A	2.60 NSenCOP	N/A	Yes [3]
Water-Cooled, ≥295,000 Btu/h, Upflow Ducted.	Water-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Upflow.	2.64 NSenCOP	2.29 SCOP	Yes
Water-Cooled, ≥240,000 Btu/h, Upflow Non-ducted.	Water-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Upflow.	2.20 NSenCOP	2.29 SCOP	Yes
Water-Cooled with fluid economizer, <80,000 Btu/h, Downflow.	Water-Cooled with fluid economizer, <65,000 Btu/h, Downflow.	2.77 NSenCOP	2.55 SCOP	Yes
Water-Cooled with fluid economizer, <65,000 Btu/h, Horizontal-flow.	N/A	2.71 NSenCOP	N/A	Yes [3]
Water-Cooled with fluid economizer, <80,000 Btu/h, Upflow Ducted.	Water-Cooled with fluid economizer, <65,000 Btu/h, Upflow.	2.74 NSenCOP	2.44 SCOP	Yes

TABLE III–1—ENERGY EFFICIENCY LEVELS FOR CRACS IN ASHRAE STANDARD 90.1–2019 AND THE CORRESPONDING FEDERAL ENERGY CONSERVATION STANDARDS—Continued

ASHRAE standard 90.1–2019 equipment class [1]	Current federal equipment class [1]	Energy efficiency levels in ASHRAE standard 90.1–2019 [2]	Federal energy conservation standards [2]	DOE triggered by ASHRAE standard 90.1–2019 amendment?
Water-Cooled with fluid economizer, <65,000 Btu/h, Upflow Non-ducted.	Water-Cooled with fluid economizer, <65,000 Btu/h, Upflow.	2.35 NSenCOP	2.44 SCOP	Yes
Water-Cooled with fluid economizer, ≥80,000 and <295,000 Btu/h, Downflow.	Water-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Downflow.	2.68 NSenCOP	2.45 SCOP	Yes
Water-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Horizontal-flow.	N/A	2.60 NSenCOP	N/A	Yes [3]
Water-Cooled with fluid economizer, ≥80,000 and <295,000 Btu/h, Upflow Ducted.	Water-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Upflow.	2.65 NSenCOP	2.34 SCOP	No [4]
Water-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Upflow Non-ducted.	Water-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Upflow.	2.24 NSenCOP	2.34 SCOP	Yes
Water-Cooled with fluid economizer, ≥295,000 Btu/h, Downflow.	Water-Cooled with fluid economizer, ≥240,000 Btu/h and <760,000 Btu/h, Downflow.	2.61 NSenCOP	2.35 SCOP	Yes
Water-Cooled with fluid economizer, ≥240,000 Btu/h, Horizontal-flow.	N/A	2.54 NSenCOP	N/A	Yes [3]
Water-Cooled with fluid economizer, ≥295,000 Btu/h, Upflow Ducted.	Water-Cooled with fluid economizer, ≥240,000 Btu/h and <760,000 Btu/h, Upflow.	2.58 NSenCOP	2.24 SCOP	Yes
Water-Cooled with fluid economizer, ≥240,000 Btu/h, Upflow Non-ducted.	Water-Cooled with fluid economizer, ≥240,000 Btu/h and <760,000 Btu/h, Upflow.	2.12 NSenCOP	2.24 SCOP	Yes
Glycol-Cooled, <80,000 Btu/h, Downflow.	Glycol-Cooled, <65,000 Btu/h, Downflow.	2.56 NSenCOP	2.50 SCOP	Yes
Glycol-Cooled, <65,000 Btu/h, Horizontal-flow.	N/A	2.48 NSenCOP	N/A	Yes [3]
Glycol-Cooled, <80,000 Btu/h, Upflow Ducted.	Glycol-Cooled, <65,000 Btu/h, Upflow Ducted.	2.53 NSenCOP	2.39 SCOP	Yes
Glycol-Cooled, <65,000 Btu/h, Upflow Non-ducted.	Glycol-Cooled, <65,000 Btu/h, Upflow Non-ducted.	2.08 NSenCOP	2.39 SCOP	Yes
Glycol-Cooled, ≥80,000 and <295,000 Btu/h, Downflow.	Glycol-Cooled, ≥65,000 and <240,000 Btu/h, Downflow.	2.24 NSenCOP	2.15 SCOP	Yes
Glycol-Cooled, ≥65,000 and <240,000 Btu/h, Horizontal-flow.	N/A	2.18 NSenCOP	N/A	Yes [3]
Glycol-Cooled, ≥80,000 and <295,000 Btu/h, Upflow Ducted.	Glycol-Cooled, ≥65,000 and <240,000 Btu/h, Upflow.	2.21 NSenCOP	2.04 SCOP	Yes
Glycol-Cooled, ≥65,000 and <240,000 Btu/h, Upflow Non-ducted.	Glycol-Cooled, ≥65,000 and <240,000 Btu/h, Upflow.	1.90 NSenCOP	2.04 SCOP	Yes
Glycol-Cooled, ≥295,000 Btu/h, Downflow.	Glycol-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Downflow.	2.21 NSenCOP	2.10 SCOP	Yes
Glycol-Cooled, ≥240,000 Btu/h, Horizontal-flow.	N/A	2.18 NSenCOP	N/A	Yes [3]
Glycol-Cooled, ≥295,000 Btu/h, Upflow Ducted.	Glycol-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Upflow Ducted.	2.18 NSenCOP	1.99 SCOP	Yes
Glycol-Cooled, ≥240,000 Btu/h, Upflow Non-ducted.	Glycol-Cooled, ≥240,000 Btu/h and <760,000 Btu/h, Upflow Non-ducted.	1.81 NSenCOP	1.99 SCOP	Yes
Glycol-Cooled with fluid economizer, <80,000 Btu/h, Downflow.	Glycol-Cooled with fluid economizer, <65,000 Btu/h, Downflow.	2.51 NSenCOP	2.45 SCOP	Yes
Glycol-Cooled with fluid economizer, <65,000 Btu/h, Horizontal-flow.	N/A	2.44 NSenCOP	N/A	Yes [3]
Glycol-Cooled with fluid economizer, <80,000 Btu/h, Upflow Ducted.	Glycol-Cooled with fluid economizer, <65,000 Btu/h, Upflow Ducted.	2.48 NSenCOP	2.34 SCOP	Yes
Glycol-Cooled with fluid economizer, <65,000 Btu/h, Upflow Non-ducted.	Glycol-Cooled with fluid economizer, <65,000 Btu/h, Upflow Non-ducted.	2.00 NSenCOP	2.34 SCOP	Yes
Glycol-Cooled with fluid economizer, ≥80,000 and <295,000 Btu/h, Downflow.	Glycol-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Downflow.	2.19 NSenCOP	2.10 SCOP	Yes
Glycol-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Horizontal-flow.	N/A	2.10 NSenCOP	N/A	Yes [3]
Glycol-Cooled with fluid economizer, ≥80,000 and <295,000 Btu/h, Upflow Ducted.	Glycol-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Upflow.	2.16 NSenCOP	1.99 SCOP	Yes

TABLE III–1—ENERGY EFFICIENCY LEVELS FOR CRACs IN ASHRAE STANDARD 90.1–2019 AND THE CORRESPONDING FEDERAL ENERGY CONSERVATION STANDARDS—Continued

ASHRAE standard 90.1–2019 equipment class [1]	Current federal equipment class [1]	Energy efficiency levels in ASHRAE standard 90.1–2019 [2]	Federal energy conservation standards [2]	DOE triggered by ASHRAE standard 90.1–2019 amendment?
Glycol-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Upflow Non-ducted.	Glycol-Cooled with fluid economizer, ≥65,000 and <240,000 Btu/h, Upflow.	1.82 NSenCOP	1.99 SCOP	Yes
Glycol-Cooled with fluid economizer, ≥295,000 Btu/h, Downflow.	Glycol-Cooled with fluid economizer, ≥240,000 Btu/h and <760,000 Btu/h, Downflow.	2.15 NSenCOP	2.05 SCOP	Yes
Glycol-Cooled with fluid economizer, ≥240,000 Btu/h, Horizontal-flow.	N/A	2.10 NSenCOP	N/A	Yes [3]
Glycol-Cooled with fluid economizer, ≥295,000 Btu/h, Upflow Ducted.	Glycol-Cooled with fluid economizer, ≥240,000 Btu/h and <760,000 Btu/h, Upflow Ducted.	2.12 NSenCOP	1.94 SCOP	Yes
Glycol-Cooled with fluid economizer, ≥240,000 Btu/h, Upflow Non-ducted.	Glycol-Cooled with fluid economizer, ≥240,000 Btu/h and <760,000 Btu/h, Upflow Non-ducted.	1.73 NSenCOP	1.94 SCOP	Yes
Ceiling-mounted, Air-cooled with free air discharge condenser, Ducted, <29,000 Btu/h.	N/A	2.05 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser, Ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	2.02 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser, Ducted, ≥65,000 Btu/h.	N/A	1.92 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser, Non-ducted, <29,000 Btu/h.	N/A	2.08 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser, Non-ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	2.05 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser, Non-ducted, ≥65,000 Btu/h.	N/A	1.94 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser with fluid economizer, Ducted, <29,000 Btu/h.	N/A	2.01 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser with fluid economizer, Ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.97 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser with fluid economizer, Ducted, ≥65,000 Btu/h.	N/A	1.87 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser with fluid economizer, Non-ducted, <29,000 Btu/h.	N/A	2.04 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser with fluid economizer, Non-ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	2.00 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with free air discharge condenser with fluid economizer, Non-ducted, ≥65,000 Btu/h.	N/A	1.89 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser, Ducted, <29,000 Btu/h.	N/A	1.86 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser, Ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.83 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser, Ducted, ≥65,000 Btu/h.	N/A	1.73 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser, Non-ducted, <29,000 Btu/h.	N/A	1.89 NSenCOP	N/A	Yes [6]

TABLE III–1—ENERGY EFFICIENCY LEVELS FOR CRACS IN ASHRAE STANDARD 90.1–2019 AND THE CORRESPONDING FEDERAL ENERGY CONSERVATION STANDARDS—Continued

ASHRAE standard 90.1–2019 equipment class [1]	Current federal equipment class [1]	Energy efficiency levels in ASHRAE standard 90.1–2019 [2]	Federal energy conservation standards [2]	DOE triggered by ASHRAE standard 90.1–2019 amendment?
Ceiling-mounted, Air-cooled with ducted condenser, Non-ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.86 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser, Non-ducted, ≥65,000 Btu/h.	N/A	1.75 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser with fluid economizer, Ducted, <29,000 Btu/h.	N/A	1.82 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser with fluid economizer, Ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.78 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser with fluid economizer, Ducted, ≥65,000 Btu/h.	N/A	1.68 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser with fluid economizer, Non-ducted, <29,000 Btu/h.	N/A	1.85 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser with fluid economizer, Non-ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.81 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Air-cooled with ducted condenser with fluid economizer, Non-ducted, ≥65,000 Btu/h.	N/A	1.70 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled, Ducted, <29,000 Btu/h.	N/A	2.38 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled, Ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	2.28 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled, Ducted, ≥65,000 Btu/h.	N/A	2.18 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled, Non-ducted, <29,000 Btu/h.	N/A	2.41 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled, Non-ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	2.31 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled, Non-ducted, ≥65,000 Btu/h.	N/A	2.20 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled with fluid economizer, Ducted, <29,000 Btu/h.	N/A	2.33 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled with fluid economizer, Ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	2.23 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled with fluid economizer, Ducted, ≥65,000 Btu/h.	N/A	2.13 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled with fluid economizer, Non-ducted, <29,000 Btu/h.	N/A	2.36 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled with fluid economizer, Non-ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	2.26 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Water-cooled with fluid economizer, Non-ducted, ≥65,000 Btu/h.	N/A	2.16 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled, Ducted, <29,000 Btu/h.	N/A	1.97 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled, Ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.93 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled, Ducted, ≥65,000 Btu/h.	N/A	1.78 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled, Non-ducted, <29,000 Btu/h.	N/A	2.00 NSenCOP	N/A	Yes [6]

TABLE III–1—ENERGY EFFICIENCY LEVELS FOR CRACS IN ASHRAE STANDARD 90.1–2019 AND THE CORRESPONDING FEDERAL ENERGY CONSERVATION STANDARDS—Continued

ASHRAE standard 90.1–2019 equipment class [1]	Current federal equipment class [1]	Energy efficiency levels in ASHRAE standard 90.1–2019 [2]	Federal energy conservation standards [2]	DOE triggered by ASHRAE standard 90.1–2019 amendment?
Ceiling-mounted, Glycol-cooled, Non-ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.98 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled, Non-ducted, ≥65,000 Btu/h.	N/A	1.81 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled with fluid economizer, Ducted, <29,000 Btu/h.	N/A	1.92 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled with fluid economizer, Ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.88 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled with fluid economizer, Ducted, ≥65,000 Btu/h.	N/A	1.73 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled with fluid economizer, Non-ducted, <29,000 Btu/h.	N/A	1.95 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled with fluid economizer, Non-ducted, ≥29,000 Btu/h and <65,000 Btu/h.	N/A	1.93 NSenCOP	N/A	Yes [6]
Ceiling-mounted, Glycol-cooled with fluid economizer, Non-ducted, ≥65,000 Btu/h.	N/A	1.76 NSenCOP	N/A	Yes [6]

[1] Note that equipment classes specified in ASHRAE Standard 90.1–2019 do not necessarily correspond to the equipment classes defined in DOE's regulations. Capacity ranges in ASHRAE Standard 90.1–2019 are specified in terms of NSCC, as measured according to AHRI 1360–2017 (which, as discussed, would produce the same results for the crosswalked classes as AHRI 1360–2022). Capacity ranges in current Federal equipment classes are specified in terms of NSCC, as measured according to ANSI/ASHRAE 127–2007. As discussed in section III.C of this document, for certain equipment classes AHRI 1360–2017 (and AHRI 1360–2022) results in increased NSCC measurements as compared to the NSCC measured in accordance with ANSI/ASHRAE 127–2007. Therefore, some CRACs would switch classes (*i.e.,* move into a higher capacity equipment class) if the equipment class boundaries are not changed accordingly. Consequently, DOE performed a ''capacity crosswalk'' analysis to translate the capacity boundaries for certain equipment classes.

[2] For CRACs, ASHRAE Standard 90.1–2019 adopted efficiency levels in terms of NSenCOP based on test procedures in AHRI 1360–2017, while DOE's current standards are in terms of SCOP based on the test procedures in ANSI/ASHRAE 127–2007. DOE performed a crosswalk analysis to compare the stringency of the ASHRAE Standard 90.1–2019 efficiency levels with the current Federal standards. See section III.C of this final rule for further discussion on the crosswalk analysis performed for CRACs.

[3] Horizontal-flow CRACs are new equipment classes included in ASHRAE Standard 90.1–2016 and ASHRAE Standard 90.1–2019 (and not subject to current Federal standards), but DOE does not have any data to indicate the market share of horizontal-flow units. In the absence of data regarding market share and efficiency distribution, DOE is unable to estimate potential savings for horizontal-flow equipment classes.

[4] The crosswalk analysis indicates that there is no difference in stringency of efficiency levels for this class between ASHRAE Standard 90.1–2019 and the current Federal standard.

[5] Air-cooled CRACs with fluid economizers are new equipment classes included in ASHRAE Standard 90.1–2019 and are currently subject to the Federal standard for air-cooled CRACs. DOE does not have data regarding market share for air-cooled CRACs with fluid economizers. Although DOE is unable to disaggregate the estimated potential savings for these equipment classes, energy savings for these equipment classes are included in the savings presented for air-cooled CRACs.

[6] Ceiling-mounted CRACs are new equipment classes in ASHRAE Standard 90.1–2019 (and not subject to current Federal standards), and DOE does not have any data to indicate the market share of ceiling-mounted units. In the absence of data regarding market share and efficiency distribution, DOE is unable to estimate potential savings for ceiling-mounted equipment classes.

The remainder of this section explains DOE's methodology for evaluating the updated levels in ASHRAE Standard 90.1–2019 and addresses comments received regarding CRAC efficiency levels and associated analyses discussed in the March 2022 ECS NOPR.

B. Test Procedure

As noted in section III.A of this document, ASHRAE adopted efficiency levels for all CRAC equipment classes denominated in terms of NSenCOP in ASHRAE Standard 90.1–2019 (measured per AHRI 1360–2017), whereas DOE's current standards are denominated in terms of SCOP (measured per ANSI/ASHRAE 127–2007). ASHRAE Standard 90.1–2019 incorporates by references AHRI 1360–2017. In the February 2022 TP NOPR, DOE proposed to adopt an amended test procedure for CRACs that incorporates by reference the substance of the updated draft version of the AHRI 1360 Standard, AHRI 1360–202X Draft. 87 FR 6948 (Feb. 7, 2022). DOE has since adopted the finalized version of that standard, AHRI 1360–2022, in the March 2023 TP final rule. *See* EERE–2021–BT–TP–0017. Because the rating conditions specified in AHRI 1360–2022 and AHRI 1360–2017 are the same for the classes for which DOE requires a crosswalk (upflow ducted, upflow non-ducted, and downflow), DOE has concluded that the NSenCOP levels specified for equipment classes in ASHRAE Standard 90.1–2019 as measured per AHRI 1360–2017 would remain unchanged if measured per AHRI 1360–2022. Therefore, in the crosswalk analysis presented in the following sections, DOE considers that the ASHRAE Standard 90.1–2019 NSenCOP levels are measured per AHRI 1360–2022.

On this topic, AHRI expressed concern with DOE proposing to adopt a test procedure, still in draft form, that is not yet cited by ASHRAE Standard 90.1, and the commenter urged DOE to follow its understanding of the statutorily-mandated process and to only adopt a revised industry test method after it has been published by AHRI and adopted into ASHRAE Standard 90.1 by the consensus standards writing body. (AHRI, No. 12 at pp. 1–2) In particular, AHRI commented that manufacturers, particularly of upflow CRACs, will experience significant impact if the proposed draft test procedure is adopted by DOE, rather than AHRI 1360–2017. More specifically, AHRI stated that as the draft procedure includes an external static pressure (ESP) adjustment for upflow CRACs tested in limited height chambers, which could result in up-flow ducted products not achieving ASHRAE Standard 90.1–2019 efficiency values during test, thereby substantially impacting all upflow unit CRAC manufacturers. *Id.* AHRI commented that there is only one modification to AHRI 1360–2017 required to support the minimum energy levels included in ASHRAE Standard 90.1–2019, and that DOE should immediately adopt that test procedure. (AHRI, No. 12 at p. 3)

As discussed in the March 2023 TP final rule, AHRI's concern regarding the draft status of AHRI 1360–202X Draft no longer applies, given the subsequent finalization of the draft and publication of AHRI 1360–2022. *See* EERE–2021–BT–TP–0017. DOE notes that AHRI 1360–2022 represents an industry consensus update to AHRI 1360–2017.

Regarding AHRI's challenge to DOE's authority, the Department disagrees with AHRI's argument that it lacks statutory authority for the adoption of AHRI 1360–2022, rather than AHRI 1360–2017. Although DOE's rationale was explained in the March 2023 TP final rule (*see* EERE–2021–BT–TP–0017), because issues related to the test procedure and energy conservation standards for CRACs are somewhat linked, the Department will explain again here its understanding of the relevant statutory requirements, as presented in the paragraphs that follow.

With respect to small, large, and very large commercial package air conditioning and heating equipment (of which CRACs are a category), EPCA directs that when the generally accepted industry testing procedure or rating procedure developed or recognized by AHRI or by ASHRAE, as referenced in ASHRAE Standard 90.1, is amended, the Secretary shall amend the DOE test procedure consistent with the amended industry test procedure or rating procedure unless the Secretary determines, by clear and convincing evidence, that to do so would not meet the requirements for test procedures to produce results representative of an average use cycle and is not unduly burdensome to conduct. (42 U.S.C. 6314(a)(4)(B))

As noted, DOE has a duty under the statute to adopt a test procedure that produces results representative of the covered equipment's average use cycle. In this case, DOE has concluded, supported by clear and convincing evidence, that AHRI 1360–2022 would better meet that criterion of EPCA than AHRI 1360–2017. First, AHRI 1360–2022 includes test provisions for measuring performance of roof-mounted and wall-mounted CRACs, configurations which are not considered in AHRI 1360–2017. Were DOE to adopt AHRI 1360–2017 instead of AHRI 1360–2022, the DOE test procedure would not address representations for these configurations in terms of NSenCOP. Second, AHRI 1360–2022 provides clarifications and additional test requirements on several test procedure elements, including test tolerances, enclosure for CRACs with compressors in indoor units, secondary verification of capacity, ducted condensers, and refrigerant charging instructions. These elements were discussed in detail in the February 2022 NOPR (*see* 87 FR 6948, 6960–6963 (Feb. 7, 2022)). These additional test requirements improve the representativeness of the CRACs test procedure. For these reasons, DOE considers AHRI 1360–2022 to be more representative of CRAC operation than AHRI 1360–2017. With this finding made, DOE does not read EPCA as requiring the Department to dissect the industry standard and surgically transplant individual provisions of the new industry standard into the prior industry standard. DOE views the industry test standard as a functioning whole, so the approach AHRI suggests could insert errors and inconsistencies into the industry standard, as would prevent its proper functioning in practice as part of the DOE test procedure. Further, even if AHRI's approach were possible, it would be largely unnecessary; adoption of all the major provisions of the latest industry test standard would arguably result in the remaining provisions being uncontroversial. Again, DOE would point out that the test procedure in question is the most current version of the industry's own approved test procedure, even if ASHRAE Standard 90.1 has not yet caught up with such change. DOE considered AHRI 1360–2017, as EPCA requires, but it ultimately determined that it would not produce results that reflect an average use cycle, in light of the availability of AHRI 1360–2022, which would be expected to do so. DOE has concluded that EPCA does not allow the Department to turn a blind eye to such real world developments, as would be the implication of following AHRI's suggested approach.

Furthermore, DOE believes that Congress foresaw the practical benefits of a statutory reading consistent with DOE's interpretation. To wit, although DOE recognizes that adopting AHRI 1360–2022 as the Federal test procedure for CRACs may create some disharmony between the Federal test procedure and the test procedure currently specified in ASHRAE Standard 90.1 for a period of time, such situation is arguably preferable to the alternative in which DOE and stakeholders would need to waste significant resources to reinitiate another rulemaking in short order to once again amend the Federal test procedure for CRACs to update the reference therein from AHRI 1360–2017 to AHRI 1360–2022—the very same testing standard already available for consideration.

Therefore, for the reasons previously stated, the Department decided in the March 2023TP final rule to incorporate by reference AHRI 1360–2022 into the CRACs test procedure (*see* EERE–2021–BT–TP–0017).

Regarding AHRI's substantive test concerns, DOE notes that the current Federal test procedure, which references ANSI/ASHRAE 127–2007, does not have any provisions that allow for testing up-flow CRAC units in a limited-height set-up. As such, the crosswalk analysis conducted to translate standards from SCOP to NSenCOP (as presented in the March 2022 ECS NOPR; *See* 87 FR 12802, 12817–12822 (March 7, 2022)) compared SCOP as measured per ANSI/ASHRAE 127–2007 to NSenCOP as measured per AHRI 1360–202X Draft (which is the test procedure DOE proposed to adopt in the February 2022 TP NOPR). DOE's original crosswalk, conducted in the September 2020 NODA/RFI, also did not consider the limited height approach included in AHRI 1360–2017. Therefore, the limited height test approaches in any intermediate CRAC industry test procedures released between ANSI/ASHRAE 127–2007 and AHRI 1360–202X Draft (*e.g.,* AHRI 1360–2017 as mentioned by AHRI) are not relevant for DOE's crosswalk analysis, as such intermediate industry test procedures were never proposed or adopted as part of the Federal test procedure. DOE's crosswalk analysis in this final rule would only consider test procedures in AHRI 1360–2017 if DOE's amended CRAC test procedure adopted test provisions from AHRI 1360–2017. However, as stated previously, since the time of AHRI's comment, DOE has finalized its test procedure for CRACs, adopting AHRI 1360–2022 in the March 2023 TP final rule. *See* EERE–2021–BT–TP–0017. The amended test procedure adopted in the March 2023 TP final rule does not impose any additional test ducting provisions beyond those included in the amended industry consensus test procedure, AHRI 1360–2022. Additionally, DOE notes that the test provision for up-flow CRACs highlighted by AHRI is an alternate ducting methodology to be used when there is limited chamber height to meet the ducting requirements of ANSI/ASHRAE Standard 37, which are referenced in both ANSI/ASHRAE 127–2007 and AHRI 1360–2022. For most up-flow CRAC units (*i.e.,* all CRACs except for tall units with large discharge duct dimensions), manufacturers can still choose to test their units in taller test chambers using the ducting requirements of ANSI/ASHRAE Standard 37, which comply with both the current CRAC test procedure and the amended test procedure adopted in this final rule. Further, DOE notes that the AEDM provision in 10 CFR 429.70 allow the use of AEDMs to develop ratings for CRACs, and, thus, manufacturers would not be required to test their very tall up-flow CRACs.

AHRI provided extensive additional comments regarding industry-wide regulatory burdens that support the adoption of the test procedure and minimum efficiencies in ASHRAE Standard 90.1. (AHRI, No. 12 at pp. 3–5) These comments are identical to those AHRI provided on the February 2022 TP NOPR, and DOE responded to the test procedure-related comments in detail in the March 2023 TP final rule. *See* EERE–2021–BT–TP–0017. Furthermore, as discussed in section V.D. of this document, DOE is adopting the minimum efficiencies in ASHRAE Standard 90.1.

C. Efficiency and Capacity Crosswalk Analyses

In the March 2022 ECS NOPR, DOE explained the efficiency and capacity crosswalk it had performed to translate SCOP levels as measured per ANSI/ASHRAE 127–2007 to NSenCOP levels as measured per AHRI 1360–202X Draft. 87 FR 12802, 12808–12826 (March 7, 2022). As previously mentioned, AHRI 1360–202X Draft has now been finalized as AHRI 1360–2022 but retains the same rating conditions as AHRI 1360–202X Draft (and AHRI 1360–2017), such that the crosswalk initially presented in the September 2020 NODA/RFI can be extended without change. The following paragraphs present a brief summary of the crosswalk methodology.

For the efficiency crosswalk, DOE analyzed the CRAC equipment classes in ASHRAE Standard 90.1–2019 that are currently subject to Federal standards (*i.e.,* all upflow and downflow classes).[9] As discussed in the subsequent paragraphs, for certain CRAC classes, ASHRAE Standard 90.1–2019 specifies classes that disaggregate the current Federal equipment classes into additional classes.

For upflow CRACs, ASHRAE Standard 90.1–2019 and AHRI 1360–2022 include separate efficiency levels and rating conditions, respectively, for ducted and non-ducted units. However, the current Federal test procedure and standards do not specify different rating conditions for upflow non-ducted and upflow ducted units; thus, in this crosswalk, DOE converted the single set of SCOP standards for upflow units to two ''crosswalked'' NSenCOP levels for ducted and non-ducted unit classes.

Similarly, for air-cooled CRACs, ASHRAE Standard 90.1–2019 includes separate sets of efficiency levels for equipment with and without fluid economizers, while the current DOE standards set forth do not distinguish air-cooled CRACs based on the presence of fluid economizers. Thus, in this crosswalk, DOE converted the single set of current Federal standards for air-cooled classes (in terms of SCOP) to two sets of standards in terms of NSenCOP for air-cooled classes distinguishing CRACs with and without fluid economizers. The crosswalk analysis also found no difference between air-cooled CRACs with and without fluid economizers, so the NSenCOP standards are identical for the two classes.

The efficiency levels for CRACs in ASHRAE Standard 90.1–2019 rely on a different metric (NSenCOP) and test procedure (AHRI 1360–2017, and now by extension AHRI 1360–2022) than the metric and test procedure required under the current Federal standards (relying on SCOP and ANSI/ASHRAE 127–2007, respectively). AHRI 1360–2022 and ANSI/ASHRAE 127–2007 notably also specify different rating conditions. These differences are listed in Table III–2, and are discussed in detail in sections III.C.1 through III.C.4 of this document.

TABLE III–2—DIFFERENCES IN RATING CONDITIONS BETWEEN DOE'S CURRENT TEST PROCEDURE AND AHRI STANDARD 1360–2022

Test parameter	Affected equipment categories	Current DOE test procedure (referencing ANSI/ASHRAE 127–2007)		AHRI 1360–2022	
Return air dry-bulb temperature (RAT).	Upflow ducted and downflow.	75 °F dry-bulb temperature		85 °F dry-bulb temperature.	
Entering water temperature (EWT).	Water-cooled	86 °F		83 °F	
ESP (varies with NSCC)	Upflow ducted	<20 kW	0.8 in H_2O	<80 kBtu/h	0.3 in H_2O.
		≥20 kW	1.0 in H_2O	≥80 kBtu/h and <295 kBtu/h.	0.4 in H_2O.
				≥295 kBtu/h and <760 kBtu/h.	0.5 in H_2O.
Adder for heat rejection fan and pump power (add to total power consumption).	Water-cooled and glycol-cooled.	No added power consumption for heat rejection fan and pump		5 percent of NSCC for water-cooled CRACs.	

[9] ASHRAE Standard 90.1–2019 includes efficiency levels for horizontal-flow and ceiling-mounted classes of CRACs. DOE does not currently prescribe standards for horizontal-flow or ceiling-mounted classes, so these classes were not included in the crosswalk analysis.

TABLE III–2—DIFFERENCES IN RATING CONDITIONS BETWEEN DOE'S CURRENT TEST PROCEDURE AND AHRI STANDARD 1360–2022

Test parameter	Affected equipment categories	Current DOE test procedure (referencing ANSI/ASHRAE 127–2007)	AHRI 1360–2022
			7.5 percent of NSCC for glycol-cooled CRACs.

The differences between these specified rating conditions impact the capacity boundaries for CRAC equipment classes. The capacity values that bound the CRAC equipment classes are in terms of NSCC. For certain equipment classes, NSCC values determined according to AHRI 1360–2022's different rating conditions are higher than the NSCC values determined according to ANSI/ASHRAE 127–2007. Therefore, the test conditions in AHRI 1360–2022 result in an increased NSCC value for certain equipment classes, as compared to the NSCC measured in accordance with the current Federal test procedure requirement. This means that some CRACs would switch classes (*i.e.,* move into a higher capacity equipment class) if the test conditions in AHRI 1360–2022 are used without shifting current equipment class boundaries to match the impact of the changes in rating conditions.

Class switching would subject some CRAC models to an efficiency level under ASHRAE Standard 90.1–2019 that is less stringent than the standard level that is applicable to that model under the current Federal requirements. Lowering the stringency of the efficiency level in the Federal requirements is impermissible under EPCA's anti-backsliding provision at 42 U.S.C. 6313(a)(6)(B)(iii)(I).

Therefore, a capacity crosswalk was conducted to translate the NSCC boundaries that separate equipment classes in the Federal efficiency standards to account for the expected increase in measured NSCC values for affected equipment classes (*i.e.,* equipment classes with test procedure changes that increase NSCC). DOE's capacity crosswalk calculated the increases in the capacity boundaries of affected equipment classes from the Federal efficiency standards if ASHRAE Standard 90.1–2019 were adopted, to evaluate this equipment class switching issue and to avoid backsliding that would occur from class switching. Updated SCOP levels and NSCC equipment class boundaries were calculated for each class (as applicable) by combining the percentage changes for every test procedure change applicable to that class.

Both efficiency and capacity crosswalk analyses have similar structure, and the data for both were gathered across numerous sources including DOE testing, manufacturer performance data gathered through non-disclosure agreements (NDAs), and public manufacturer literature, among others. DOE conducted analysis across each test procedure change independently and determined an aggregated percentage by which that change impacted efficiency and/or NSCC.

The following sub-sections describe the approaches used to analyze the impacts on the measured efficiency and capacity of each difference in rating conditions between DOE's current test procedure and AHRI 1360–2022. As discussed, the crosswalk analysis methodology described in the following sub-sections is the same as presented in the March 2022 ECS NOPR. 87 FR 12802, 12817–12822 (March 7, 2022). No additional data sources were added to the analysis for this final rule.

1. Increase in Return Air Dry-Bulb Temperature From 75 °F to 85 °F

ANSI/ASHRAE 127–2007, which is referenced by DOE's current test procedure, specifies a return air dry-bulb temperature (RAT) of 75 °F for testing all CRACs. AHRI 1360–2022 specifies a RAT of 85 °F for upflow ducted and downflow CRACs, but specifies a RAT for upflow non-ducted units of 75 °F.

SCOP and NSCC both increase with increasing RAT for two reasons. First, a higher RAT increases the cooling that must be done for the air to approach its dew point temperature (*i.e.,* the temperature at which water vapor will condense if there is any additional cooling). Second, a higher RAT will tend to raise the evaporating temperature of the refrigerant, which in turn raises the temperature of fin and tube surfaces in contact with the air—the resulting reduction in the portion of the heat exchanger surface that is below the air's dew point temperature reduces the potential for water vapor to condense on these surfaces. This is seen in product specifications which show that the sensible heat ratio [10] is consistently higher at a RAT of 85 °F than at 75 °F. Because increasing RAT increases the fraction of total cooling capacity that is sensible cooling (rather than latent cooling), the NSCC increases. Further, because SCOP is calculated with NSCC in the numerator of the calculation, an increase in NSCC also inherently increases SCOP.

To analyze the magnitude of the impacts of increasing RAT for upflow ducted and downflow CRACs on SCOP and NSCC, DOE gathered data from three separate sources and aggregated the results for each crosswalk analysis. First, DOE used product specifications for several CRAC models that provide SCOP and NSCC ratings for RATs ranging from 75 °F to 95 °F. Second, DOE analyzed manufacturer performance data obtained under NDAs that showed the performance impact of individual test condition changes, including the increase in RAT. Third, DOE used results from testing two CRAC units: one air-cooled upflow ducted and one air-cooled downflow unit. DOE combined the results of these sources to find the aggregated increases in SCOP and NSCC due to the increase in RAT. The increase in SCOP due to the change in RAT was found to be approximately 19 percent, and the increase in NSCC was found to be approximately 22 percent.

2. Decrease in Entering Water Temperature for Water-Cooled CRACs

ANSI/ASHRAE 127–2007, which is referenced by DOE's current test procedure, specifies an entering water temperature (EWT) of 86 °F for water-cooled CRACs, while AHRI 1360–2022 specifies an entering water temperature of 83 °F. A decrease in the EWT for water-cooled CRACs increases the temperature difference between the water and hot refrigerant in the condenser coil, thus increasing cooling capacity and decreasing compressor power. To analyze the impact of this decrease in EWT on SCOP and NSCC,

[10] ''Sensible heat ratio'' is the ratio of sensible cooling capacity to the total cooling capacity. The total cooling capacity includes both sensible cooling capacity (cooling associated with reduction in temperature) and latent cooling capacity (cooling associated with dehumidification).

DOE analyzed manufacturer data obtained through NDAs and a publicly-available presentation from a major CRAC manufacturer and calculated a SCOP increase of approximately 2 percent and an NSCC increase of approximately 1 percent.

3. Changes in External Static Pressure Requirements for Upflow Ducted CRACs

For upflow ducted CRACs, AHRI 1360–2022 specifies lower ESP requirements than ANSI/ASHRAE 127–2007, which is referenced in DOE's current test procedure. The ESP requirements in all CRAC industry test standards vary with NSCC; however, the capacity bins (*i.e.,* capacity ranges over which each ESP requirement applies) in ANSI/ASHRAE 127–2007 are different from those in AHRI 1360–2022. Testing with a lower ESP decreases the indoor fan power input without a corresponding decrease in NSCC, thus increasing the measured SCOP. Additionally, the reduction in fan heat entering the indoor air stream that results from lower fan power also slightly increases NSCC, further increasing SCOP.

To analyze the impacts on measured SCOP and NSCC of the changes in ESP requirements between DOE's current test procedure and AHRI 1360–2022, DOE aggregated data from its analysis of fan power consumption changes, manufacturer data obtained through NDAs, and results from DOE testing. Notably, the impact of changes in ESP requirements on SCOP and NSCC was calculated separately in DOE's analysis for each capacity range specified in AHRI 1360–2022 (*i.e.,* <80 kBtu/h, ≥80 and <295 kBtu/h, and ≥295 kBtu/h). As discussed in section III.C of this document, NSCC values determined according to ANSI/ASHRAE 127–2007 are lower than NSCC values determined according to AHRI 1360–2022 for certain CRAC classes, including upflow-ducted classes. The increase in NSCC in AHRI 1360–2022 also impacts the ESP requirements in AHRI 1360–2022 for upflow-ducted units, because the ESP requirements are specified based on NSCC. Different ESP requirements impact the stringency of the test—as discussed, testing with a lower ESP increases the measured SCOP. AHRI 1360–2022 addresses this issue by updating the NSCC capacity bin boundaries associated with the applicable ESP. For the purposes of the efficiency and capacity crosswalk analyses in this final rule, DOE used the adjusted capacity boundaries in AHRI 1360–2022 for upflow ducted classes presented in Table III–4 (as discussed in section III.C.5 of this document) to specify the applicable ESP requirement.

DOE conducted an analysis to estimate the change in fan power consumption due to the changes in ESP requirements using performance data and product specifications for 77 upflow CRAC models with certified SCOP ratings at or near the current applicable SCOP standard level in DOE's Compliance Certification Database.[11] Using the certified SCOP and NSCC values, DOE determined each model's total power consumption for operation at the rating conditions specified in DOE's current test procedure. DOE then used fan performance data for each model to estimate the change in indoor fan power that would result from the lower ESP requirements in AHRI 1360–2022 and modified the total power consumption for each model by the calculated value. For several models, detailed fan performance data were not available, so DOE used fan performance data for comparable air conditioning units with similar cooling capacity, fan drive, and fan motor horsepower.

DOE also received manufacturer data (obtained through NDAs) showing the impact on efficiency and NSCC of the change in ESP requirements. Additionally, DOE conducted tests on an upflow-ducted CRAC at ESPs of 1 in. H_2O and 0.4 in. H_2O (the applicable ESP requirements specified in ANSI/ASHRAE 127–2007 and AHRI 1360–2022, respectively), and included the results of those tests in this analysis.

For each of the three capacity ranges for which ESP requirements are specified in AHRI 1360–2022, Table III–3 shows the approximate aggregated percentage increases in SCOP and NSCC associated with the decreased ESP requirements specified in AHRI 1360–2022 for upflow ducted units.

TABLE III–3—PERCENTAGE INCREASE IN SCOP AND NSCC FROM DECREASES IN EXTERNAL STATIC PRESSURE REQUIREMENTS FOR UPFLOW DUCTED UNITS BETWEEN DOE'S CURRENT TEST PROCEDURE AND AHRI 1360–2022

Net sensible cooling capacity range (kBtu/h) *		ESP requirements in DOE's current test procedure (referencing ANSI/ASHRAE 127–2007) (in H_2O)	ESP requirements in AHRI 1360–2022 (in H_2O)	Approx. average percentage increase in SCOP	Approx. average percentage increase in NSCC
<65		0.8	0.3	7	2
≥65 to <240	≥65 to <68.2 **	0.8	0.4	*** 8	*** 2
	≥68.2 to <240 **	1			
≥240 to <760		1	0.5	6	2

* These boundaries are consistent with the boundaries in ANSI/ASHRAE 127–2007 and differ from the boundaries in AHRI 1360–2022, which reflect the expected capacity increases for upflow-ducted and downflow equipment classes at the AHRI 1360–2022 return air temperature test conditions.

** 68.2 kBtu/h is equivalent to 20 kW, which is the capacity value that separates ESP requirements in ANSI/ASHRAE 127–2007, which is referenced in DOE's current test procedure.

*** This average percentage increase is an average across upflow ducted CRACs with net sensible cooling capacity ≥65 and <240 kBtu/h, including models with capacity <20 kW and ≥20 kW. DOE's Compliance Certification Database shows that most of the upflow CRACs with a net sensible cooling capacity ≥65 kBtu/h and <240 kBtu/h have a net sensible cooling capacity ≥20 kW.

[11] DOE's Compliance Certification Database can be accessed at: *www.regulations.doe.gov/ccms* (Last accessed Jan. 3, 2023).

4. Power Adder To Account for Pump and Heat Rejection Fan Power in NSenCOP Calculation for Water-Cooled and Glycol-Cooled CRACs

Energy consumption for heat rejection components for air-cooled CRACs (*i.e.,* condenser fan motor(s)) is measured in the current DOE test procedure for CRACs; however, for water-cooled and glycol-cooled CRACs, energy consumption for heat rejection components is not measured because these components (*i.e.,* water/glycol pump, dry cooler/cooling tower fan(s)) are not considered to be part of the CRAC unit. ANSI/ASHRAE 127–2007, which is referenced in DOE's current test procedure, does not include any factor in the calculation of SCOP to account for the power consumption of heat rejection components for water-cooled and glycol-cooled CRACs.

In contrast, AHRI 1360–2022 specifies to increase the measured total power input for CRACs to account for the power consumption of fluid pumps and heat rejection fans. Specifically, sections 6.3.3 and 6.3.4 of AHRI 1360–2022 specify to add a percentage of the measured NSCC (5 percent for water-cooled CRACs and 7.5 percent for glycol-cooled CRACs) in kW to the total power input used to calculate NSenCOP. DOE calculated the impact of these additions on SCOP using Equation 1:

$$SCOP_1 = \frac{SCOP}{1 + (x * SCOP)}$$

Equation 1

Where, χ is equal to 5 percent for water-cooled CRACs and 7.5 percent for glycol-cooled CRACs, and $SCOP_1$ is the SCOP value adjusted for the energy consumption of heat rejection pumps and fans.

5. Calculating Overall Changes in Measured Efficiency and Capacity From Test Procedure Changes

Different CRAC equipment classes are subject to different combinations of the test procedure changes between DOE's current test procedure and AHRI 1360–2022 analyzed in the crosswalk analyses. To combine the impact of the changes in rating conditions, DOE calculated the crosswalked NSenCOP levels and translated NSCC boundaries as detailed in the following sections.

a. Calculation of Crosswalked NSenCOP Levels

To combine the impact on SCOP of the changes to rating conditions (*i.e.,* increase in RAT, decrease in condenser EWT for water-cooled units, and decrease of the ESP requirements for upflow ducted units), DOE multiplied together the calculated adjustment factors representing the measurement changes corresponding to each individual rating condition change, as applicable, as shown in Equation 2. These adjustment factors are equal to 100 percent (which represents SCOP measured per the current Federal test procedure) plus the calculated percentage change in measured efficiency.

To account for the impact of the adder for heat rejection pump and fan power for water-cooled and glycol-cooled units, DOE used Equation 3. Hence, DOE determined crosswalked NSenCOP levels corresponding to the current Federal SCOP standards for each CRAC equipment class using the following two equations.

$$NSenCOP_1 = SCOP * (1 + x_1) * (1 + x_2) * (1 + x_3)$$

Equation 2

$$NSenCOP = \frac{NSenCOP_1}{1 + (x_4 * NSenCOP_1)}$$

Equation 3

In these equations, $NSenCOP_1$ refers to a partially-crosswalked NSenCOP level that incorporates the impacts of changes in RAT, condenser EWT, and indoor fan ESP (as applicable), but not the impact of adding the heat rejection pump and fan power; x_1, x_2, x_3, and represent the percentage change in SCOP due to changes in RAT, condenser EWT, and indoor fan ESP requirements, respectively; and is equal to 5 percent for water-cooled equipment classes and 7.5 percent for glycol-cooled equipment classes. For air-cooled classes, x_4 is equal to 0 percent; therefore, for these classes, NSenCOP is equal to $NSenCOP_1$.

b. Calculation of Translated NSCC Boundaries

To combine the impact on NSCC of the changes to rating conditions, DOE used a methodology similar to that used for determining the impact on SCOP. To determine adjusted NSCC equipment class boundaries, DOE multiplied together the calculated adjustment factors representing the measurement changes corresponding to each individual rating condition change, as applicable, as shown in Equation 4. These adjustment factors are equal to 100 percent (which represents NSCC measured per the current Federal test procedure) plus the calculated percentage change in measured NSCC. In this equation, *Boundary* refers to the original NSCC boundaries (*i.e.,* 65,000 Btu/h, 240,000 Btu/h, or 760,000 Btu/h as determined according to ANSI/ASHRAE 127–2007), $Boundary_1$ refers to the updated NSCC boundaries as determined according to AHRI 1360–2022, and y_1, y_2, and y_3 represent the percentage changes in NSCC due to changes in RAT, condenser EWT, and indoor fan ESP requirements, respectively.

$$Boundary_1 = Boundary * (1 + y_1) * (1 + y_2) * (1 + y_3)$$

Equation 4

As mentioned, ASHRAE Standard 90.1–2019 and AHRI 1360–2022 include updated equipment class capacity boundaries for only upflow-ducted and downflow equipment classes. The updated class ranges for these categories are <80,000 Btu/h, ≥80,000 Btu/h and <295,000 Btu/h, and ≥295,000 Btu/h. In previous versions of ASHRAE Standard 90.1, these ranges are <65,000 Btu/h, ≥65,000 Btu/h and <240,000 Btu/h, and ≥240,000 Btu/h. The capacity range boundaries for upflow non-ducted classes were left unchanged at 65,000 Btu/h and 240,000 Btu/h in ASHRAE Standard 90.1–2019.

DOE's capacity crosswalk analysis indicates that the primary driver for increasing NSCC is increasing RAT. The increases in RAT in AHRI 1360–2022, as compared to ANSI/ASHRAE 127–2007, only apply to upflow ducted and downflow equipment classes. Based on the analysis performed for this document, DOE found that all the equipment class boundaries in ASHRAE Standard 90.1–2019, which are in increments of 5,000 Btu/h, vary by no more than 1.4 percent of the boundary translations calculated from DOE's capacity crosswalk. DOE considers this 1.4 percent variance to be *de minimis* because the only difference appears to be rounding. When rounded to increments of 5,000 Btu/h, DOE's crosswalk boundary translations are equivalent to the equipment class boundaries in ASHRAE Standard 90.1–2019. As such, to align DOE's analysis more closely with ASHRAE Standard 90.1–2019, DOE has used the equipment class boundaries in ASHRAE Standard 90.1–2019 as the translated boundaries for the crosswalk analysis. Use of the equipment class boundaries from ASHRAE Standard 90.1–2019 allows for an appropriate comparison between the energy efficiency levels and equipment classes specified in ASHRAE Standard 90.1 and those in the current DOE standards, while addressing the backsliding potential from class switching discussed previously.

ASHRAE Standard 90.1–2019 does not include an upper capacity limit for coverage of CRACs. DOE's current standards are applicable only to CRACs with an NSCC less than 760,000 Btu/h, which is the upper boundary for very large commercial package air conditioning and heating equipment, the statutory limits on DOE's authority.[12] 10 CFR 431.97(e). However, the change in the ratings conditions in AHRI 1360–2022 means this boundary (calculated according to the current Federal test procedure, which references ANSI/ASHRAE 127–2007) must be expressed in its calculated equivalent for AHRI 1360–20222 under the crosswalk analysis. Otherwise, equipment currently covered and subject to the Federal standards may be removed from coverage, thereby violating EPCA's anti-backsliding provision.

In order to account for all equipment currently subject to the Federal standards, DOE calculated the AHRI 1360–2022 equivalent of the 760,000 Btu/h equipment class boundary for certain equipment classes as part of its capacity crosswalk analysis. This translation of the upper boundary of the equipment classes applies only for downflow and upflow-ducted classes (the classes for which the RAT increase applies). Consistent with the adjustments made in ASHRAE Standard 90.1–2019, DOE averaged the crosswalked capacity results across the affected equipment classes, and rounded to the nearest 5,000 Btu/h. Following this approach, DOE has derived 930,000 Btu/h as the translated upper capacity limit for downflow and upflow-ducted CRACs in the analysis presented in this document. The 930,000 Btu/h upper capacity limit (as measured per AHRI 1360–2022) used in the crosswalk analysis is equivalent to the 760,000 Btu/h upper capacity limit (as measured per ANSI/ASHRAE 127–2007) established in the current DOE standards.

As discussed, in the March 2023 TP final rule, DOE amended its test procedures for CRACs to: (1) relocate the current test procedure for measuring SCOP to appendix E to subpart F of 10 CFR part 431; and (2) adopt an amended test procedure for measuring NSenCOP in appendix E1 to subpart F of 10 CFR part 431. *See* EERE–2021–BT–TP–0017. As amended, the scope of the CRAC test procedures at appendices E and E1 are limited to CRACs with cooling capacity below 760,000 Btu/h. However, to reflect the translation of 760,000 Btu/h to 930,000 Btu/h as the upper capacity limit for downflow and upflow-ducted CRACs (as measured per AHRI 1360–2022 and discussed previously in this subsection), DOE is correspondingly amending the upper capacity limit for the scope of Appendix E1. Specifically, DOE is amending Table 1 to paragraph (b) at 10 CFR 431.96 to specify the following: for upflow ducted and downflow floor-mounted computer room air conditioners, the test procedure in appendix E1 of this subpart applies to equipment with net sensible cooling capacity less than 930,000 Btu/h. For all other configurations of computer room air conditioners, the test procedure in appendix E1 applies to equipment with net sensible cooling capacity less than 760,000 Btu/h.

6. Crosswalk Results

The ''crosswalked'' DOE efficiency levels (expressed in terms of NSenCOP) and equipment class capacity boundaries (adjusted to account for changes in rating conditions) were compared with the NSenCOP efficiency levels and capacity boundaries specified in ASHRAE Standard 90.1–2019 to determine the stringency of ASHRAE Standard 90.1–2019 requirements relative to current Federal standards.

Table III–4 presents the results for the crosswalk analyses. The last column in the table, labeled ''Crosswalk Comparison,'' indicates whether the ASHRAE Standard 90.1–2019 levels are less stringent, equivalent to, or more stringent than the current Federal standards, based on DOE's analysis.

[12] At the time EPCA was amended to include the definition for ''very large commercial package air conditioning and heating equipment,'' equipment covered by ASHRAE that met the statutory definition of ''commercial package air conditioning and heating equipment'' was generally comfort cooling equipment, which was rated according to the corresponding test procedures at 80 °F/67 °F indoor air. The upper boundary of 760,000 Btu/h specified by EPCA (42 U.S.C. 6311(8)(D)) reflects a capacity rating at 80 °F/67 °F indoor air. As discussed, DOE has translated the 760,000 Btu/h limit to an equivalent rating that is based on testing according to the conditions specified in the updated industry test procedure for CRACs. Consequently, DOE does not have authority to set standards for models with a capacity beyond the 760,000 Btu/h limit specified by EPCA, as translated to a rating measured per AHRI 1360–2022.

TABLE III–4—CROSSWALK RESULTS

Condenser system type	Airflow configuration	Current NSCC range (kBtu/h)	Current federal standard (SCOP)	Test procedure changes affecting efficiency*	Cross-walked NSCC range (kBtu/h)	Cross-walked current federal standard (NSenCOP)	ASHRAE standard 90.1–2019 NSenCOP level	Crosswalk comparison
Air-cooled	Downflow	<65	2.20	Return air dry-bulb temperature.	<80	2.62	2.70	More Stringent
Air-cooled	Downflow	≥65 and <240	2.10		≥80 and <295	2.50	2.58	More Stringent
Air-cooled	Downflow	≥240 and <760	1.90		≥295 and <930	2.26	2.36	More Stringent
Air-cooled with fluid economizer.	Downflow	<65	2.20		<80	2.62	2.70	More Stringent
Air-cooled with fluid economizer.	Downflow	≥65 and <240	2.10		≥80 and <295	2.50	2.58	More Stringent
Air-cooled with fluid economizer.	Downflow	≥240 and <760	1.90		≥295 and <930	2.26	2.36	More Stringent
Water-cooled	Downflow	<65	2.60	Return air dry-bulb temperature.	<80	2.73	2.82	More Stringent
Water-cooled	Downflow	≥65 and <240	2.50		≥80 and <295	2.63	2.73	More Stringent
Water-cooled	Downflow	≥240 and <760	2.40		≥295 and <930	2.54	2.67	More Stringent
Water-cooled with fluid economizer.	Downflow	<65	2.55	Condenser entering water temperature.	<80	2.68	2.77	More Stringent
Water-cooled with fluid economizer.	Downflow	≥65 and <240	2.45	Add allowance for heat rejection components to total power input.	≥80 and <295	2.59	2.68	More Stringent
Water-cooled with fluid economizer.	Downflow	≥240 and <760	2.35		≥295 and <930	2.50	2.61	More Stringent
Glycol-cooled	Downflow	<65	2.50	Add allowance for heat rejection components to total power input.	<80	2.43	2.56	More Stringent
Glycol-cooled	Downflow	≥65 and <240	2.15		≥80 and <295	2.15	2.24	More Stringent
Glycol-cooled	Downflow	≥240 and <760	2.10		≥295 and <930	2.11	2.21	More Stringent
Glycol-cooled with fluid economizer.	Downflow	<65	2.45		<80	2.39	2.51	More Stringent
Glycol-cooled with fluid economizer.	Downflow	≥65 and <240	2.10		≥80 and <295	2.11	2.19	More Stringent
Glycol-cooled with fluid economizer.	Downflow	≥240 and <760	2.05		≥295 and <930	2.06	2.15	More Stringent
Air-cooled	Upflow Ducted	<65	2.09	Return air dry-bulb temperature.	<80	2.65	2.67	More Stringent
Air-cooled	Upflow Ducted	≥65 and <240	1.99		≥80 and <295	2.55	2.55	Equivalent
Air-cooled	Upflow Ducted	≥240 and <760	1.79		≥295 and <930	2.26	2.33	More Stringent
Air-cooled with fluid economizer.	Upflow Ducted	<65	2.09	ESP requirements	<80	2.65	2.67	More Stringent
Air-cooled with fluid economizer.	Upflow Ducted	≥65 and <240	1.99		≥80 and <295	2.55	2.55	Equivalent
Air-cooled with fluid economizer.	Upflow Ducted	≥240 and <760	1.79		≥295 and <930	2.26	2.33	More Stringent
Water-cooled	Upflow Ducted	<65	2.49	Return air dry-bulb temperature.	<80	2.77	2.79	More Stringent
Water-cooled	Upflow Ducted	≥65 and <240	2.39		≥80 and <295	2.70	2.70	Equivalent
Water-cooled	Upflow Ducted	≥240 and <760	2.29	Condenser entering water temperature.	≥295 and <930	2.56	2.64	More Stringent
Water-cooled with fluid economizer.	Upflow Ducted	<65	2.44	ESP requirements	<80	2.72	2.74	More Stringent
Water-cooled with fluid economizer.	Upflow Ducted	≥65 and <240	2.34	Add allowance for heat rejection components to total power input.	≥80 and <295	2.65	2.65	Equivalent
Water-cooled with fluid economizer.	Upflow Ducted	≥240 and <760	2.24		≥295 and <930	2.51	2.58	More Stringent
Glycol-cooled	Upflow Ducted	<65	2.39	Return air dry-bulb temperature.	<80	2.47	2.53	More Stringent
Glycol-cooled	Upflow Ducted	≥65 and <240	2.04		≥80 and <295	2.19	2.21	More Stringent

Glycol-cooled	Upflow Ducted	≥240 and <760	1.99	ESP requirements	≥295 and <930	2.11	2.18	More Stringent
Glycol-cooled with fluid economizer.	Upflow Ducted	<65	2.34	Add allowance for heat rejection components to total power input.	<80	2.43	2.48	More Stringent
Glycol-cooled with fluid economizer.	Upflow Ducted	≥65 and <240	1.99		≥80 and <295	2.14	2.16	More Stringent
Glycol-cooled with fluid economizer.	Upflow Ducted	≥240 and <760	1.94		≥295 and <930	2.07	2.12	More Stringent
Air-cooled	Upflow Non-Ducted	<65	2.09	No changes	<65	2.09	2.16	More Stringent
Air-cooled	Upflow Non-Ducted	≥65 and <240	1.99		≥65 and <240	1.99	2.04	More Stringent
Air-cooled	Upflow Non-Ducted	≥240 and <760	1.79		≥240 and <760	1.79	1.89	More Stringent
Air-cooled with fluid economizer.	Upflow Non-Ducted	<65	2.09		<65	2.09	2.09	Equivalent
Air-cooled with fluid economizer.	Upflow Non-Ducted	≥65 and <240	1.99		≥65 and <240	1.99	1.99	Equivalent
Air-cooled with fluid economizer.	Upflow Non-Ducted	≥240 and <760	1.79		≥240 and <760	1.79	1.81	More Stringent
Water-cooled	Upflow Non-Ducted	<65	2.49	Condenser entering water temperature.	<65	2.25	2.43	More Stringent
Water-cooled	Upflow Non-Ducted	≥65 and <240	2.39		≥65 and <240	2.17	2.32	More Stringent
Water-cooled	Upflow Non-Ducted	≥240 and <760	2.29		≥240 and <760	2.09	2.20	More Stringent
Water-cooled with fluid economizer.	Upflow Non-Ducted	<65	2.44	Add allowance for heat rejection components to total power input.	<65	2.21	2.35	More Stringent
Water-cooled with fluid economizer.	Upflow Non-Ducted	≥65 and <240	2.34		≥65 and <240	2.13	2.24	More Stringent
Water-cooled with fluid economizer.	Upflow Non-Ducted	≥240 and <760	2.24		≥240 and <760	2.05	2.12	More Stringent
Glycol-cooled	Upflow Non-Ducted	<65	2.39		<65	2.03	2.08	More Stringent
Glycol-cooled	Upflow Non-Ducted	≥65 and <240	2.04		≥65 and <240	1.77	1.90	More Stringent
Glycol-cooled	Upflow Non-Ducted	≥240 and <760	1.99	Add allowance for heat rejection components to total power input.	≥240 and <760	1.73	1.81	More Stringent
Glycol-cooled with fluid economizer.	Upflow Non-Ducted	<65	2.34		<65	1.99	2.00	More Stringent
Glycol-cooled with fluid economizer.	Upflow Non-Ducted	≥65 and <240	1.99		≥65 and <240	1.73	1.82	More Stringent
Glycol-cooled with fluid economizer.	Upflow Non-Ducted	≥240 and <760	1.94		≥240 and <760	1.69	1.73	More Stringent

As indicated by the crosswalk, the standard levels established for CRACs in ASHRAE Standard 90.1–2019 are equivalent to the current Federal standards for six equipment classes and are more stringent than the current Federal standards for 48 equipment classes of CRACs. ASHRAE Standard 90.1–2019 also added 66 equipment classes of ceiling-mounted and horizontal-flow CRACs that did not require a crosswalk because there are currently no Federal standards for those classes. As discussed in section III.A of this final rule, DOE is adopting standards for horizontal-flow CRACs and ceiling-mounted CRACs. ASHRAE Standard 90.1–2019 also incorporates shifted capacity bin boundaries for upflow ducted and downflow CRAC equipment classes. DOE's crosswalk analysis indicates that these updated boundaries appropriately reflect the increase in NSCC that results from the changes in test procedure adopted under ASHRAE Standard 90.1–2019 and are equivalent to the capacity boundaries in the current Federal standards once those changes are accounted for (as discussed in previous sections of this document).

7. Comments Received Regarding DOE's Crosswalk

AHRI agreed with DOE's crosswalk methodology and noted that AHRI members, DOE staff, and consultants met extensively in 2018 to develop the crosswalk analysis in order to ensure that new NSenCOP values developed for ASHRAE Standard 90.1–2019 addressed all of the shortcomings from the previous edition's efficiency levels. (AHRI, No. 12 at p. 1) AHRI expressed support for the direct adoption of all NSenCOP values, and associated capacities in ASHRAE Standard 90.1 and agreed that the efficiencies proposed in the NOPR will save energy. *Id.*

DOE did not receive any other comments regarding its crosswalk methodology. Therefore, for this final rule, DOE relies on the crosswalk analysis and results as originally presented in the September 2020 NODA/RFI, in which DOE identifies 48 equipment classes for which the ASHRAE Standard 90.1–2019 efficiency levels are more stringent than current DOE efficiency levels (expressed in NSenCOP), six equipment classes for which the ASHRAE Standard 90.1–2019 efficiency levels are equal to the current DOE efficiency levels, and 66 classes of CRACs that are not currently subject to DOE's standards but for which standards are specified in ASHRAE Standard 90.1–2019 (*i.e.,* horizontal-flow and ceiling-mounted classes).

IV. Methodology for Estimates of Potential Energy Savings From ASHRAE Standard 90.1–2019 Levels

In the September 2020 NODA/RFI, DOE performed an analysis to determine the energy-savings potential of amending Federal standards to the amended ASHRAE levels for CRACs for which ASHRAE Standard 90.1–2019 specifies amended energy efficiency levels more stringent than the corresponding Federal energy conservation standards, as required under 42 U.S.C. 6313(a)(6)(A). 85 FR 60642, 60663 (Sept. 25, 2020). DOE's energy savings analysis was limited to equipment classes for which a market exists and for which sufficient data were available.

For the equipment classes where ASHRAE Standard 90.1–2019 specifies more-stringent levels than the corresponding Federal energy conservation standard, DOE calculated the potential energy savings to the Nation associated with adopting ASHRAE Standard 90.1–2019 as the difference between a no-new-standards case projection (*i.e.,* without amended standards) and the ASHRAE Standard 90.1–2019 standards-case projection (*i.e.,* with adoption of ASHRAE Standard 90.1–2019 levels).

The national energy savings (NES) refers to cumulative lifetime energy savings for equipment purchased in a 30-year period that differs by equipment (*i.e.,* the compliance date differs by equipment class (*i.e.,* capacity) depending upon whether DOE is acting under the ASHRAE trigger or the 6-year-lookback (*see* 42 U.S.C. 6313(a)(6)(D)). In the standards case, equipment that is more efficient gradually replaces less-efficient equipment over time. This affects the calculation of the potential energy savings, which are a function of the total number of units in use and their efficiencies. Savings depend on annual shipments and equipment lifetime. Inputs to the energy savings analysis are presented in the following sections.

A. Annual Energy Use

The purpose of the energy use analysis is to assess the energy savings potential of different equipment efficiencies in the building types that utilize the equipment. The Federal standard and ASHRAE Standard 90.1–2019 levels are expressed in terms of an efficiency metric. For each equipment class, the description of how DOE developed estimates of annual energy consumption at the Federal baseline efficiency level and the ASHRAE Standard 90.1–2019 level can be found in section III.A.1 of the September 2020 NODA/RFI. 85 FR 60642, 60664–60666 (Sept. 25, 2020). In the March 2022 ECS NOPR, DOE briefly summarized that analysis and responded to stakeholder comments. 87 FR 12802, 12827–12830 (March 7, 2022). However, DOE did not change its analysis in response to those comments. DOE did not receive any comments specific to this analysis in response to the March 2022 ECS NOPR, and continues to rely on the analysis from the September 2020 NODA/RFI in this final rule. The annual unit energy consumption (UEC) estimates are displayed in Table IV–1 and form the basis of the national energy savings estimates discussed in section IV.E of this document.

1. Equipment Classes and Analytical Scope

In the September 2020 NODA/RFI, DOE conducted an energy savings analysis for the 42 CRAC classes that currently have both DOE standards and more-stringent standards under ASHRAE Standard 90.1–2019. 85 FR 60642, 60664 (Sept. 25, 2020). DOE was unable to identify market data that would allow for disaggregating results for the six equipment classes of air-cooled CRACs with fluid economizers that have ASHRAE Standard 90.1–2019 levels more stringent than current Federal standards. Furthermore, although ASHRAE Standard 90.1–2019 included levels for the 66 horizontal flow and ceiling-mounted equipment classes which currently are not subject to Federal standards, DOE was unable to identify market data that could be used to establish a market baseline for these classes in order to estimate energy savings at the time the September 2020 NODA/RFI was published. 85 FR 60642, 60663–60664 (Sept. 25, 2020). DOE did not receive any efficiency data in response to the March 2022 ECS NOPR and is unaware of any publicly available data. Therefore, DOE was unable to develop a market baseline and estimate energy savings for the horizontal-flow and ceiling-mounted equipment classes for this final rule. The UEC estimates (provided in Table IV–1 of this document) were only developed for equipment classes for which DOE could develop a market baseline; therefore, they do not include the horizontal-flow and ceiling-mounted classes.

2. Efficiency Levels

DOE analyzed the energy savings potential of adopting ASHRAE Standard 90.1–2019 levels for CRAC equipment classes that currently have a Federal standard and have an ASHRAE Standard 90.1–2019 efficiency level more stringent than the current Federal standard. For each equipment class, energy savings are measured relative to the baseline (*i.e.,* the current Federal standard for that class). 85 FR 60642, 60664 (Sept. 25, 2020).

3. Analysis Method and Annual Energy Use Results

In the September 2020 NODA/RFI, to derive UECs for the equipment classes analyzed in this document, DOE started with the UECs based on the current DOE standards for downflow equipment classes as analyzed in the May 2012 final rule. DOE assumed that these UECs correspond to the NSenCOP that was derived through the crosswalk analysis (*i.e.,* ''Cross-walked Current Federal Standard'' column in Table III–4). DOE determined the UEC for the ASHRAE Standard 90.1–2019 level by dividing the baseline NSenCOP level by the NSenCOP for the ASHRAE Standard 90.1–2019 level and multiplied the resulting percentage by the baseline UEC. 85 FR 60642, 60664 (Sept. 25, 2020).

In the May 2012 final rule, DOE assumed that energy savings estimates derived for downflow equipment classes would be representative of upflow equipment classes, which differed by a fixed 0.11 SCOP. 77 FR 28928, 28954 (May 16, 2012). Because of the fixed 0.11 SCOP difference between upflow and downflow CRAC units in ASHRAE Standard 90.1–2013, DOE determined that the per-unit energy savings benefits for corresponding CRACs at higher efficiency levels could be represented using the 15 downflow equipment classes. *Id.* However, in this analysis, the efficiency levels for the upflow non-ducted equipment classes do not differ from the downflow equipment class by a fixed amount. For the September 2020 NODA/RFI, DOE assumed that the fractional increase/decrease in NSenCOP between upflow and downflow units corresponds to a proportional decrease/increase in the baseline UEC within a given equipment class grouping of condenser system and capacity. 85 FR 60642, 60665 (Sept. 25, 2020).

Table IV–1 shows UEC estimates for the equipment classes triggered by ASHRAE Standard 90.1–2019 (*i.e.,* equipment classes for which the ASHRAE Standard 90.1–2019 energy efficiency level is more stringent than the currently applicable Federal standard).

TABLE IV–1—NATIONAL UEC ESTIMATES (kWh/YEAR) FOR CRAC SYSTEMS [1]

Condenser system type	Airflow configuration	Current net sensible cooling capacity	Current federal standard		ASHRAE standard 90.1–2019	
			NSenCOP	UEC (kwh)	NSenCOP	UEC (kwh)
Air-cooled	Downflow	<65,000 Btu/h	2.62	27,411	2.70	26,599
		≥65,000 Btu/h and <240,000 Btu/h	2.50	102,762	2.58	99,575
		≥240,000 Btu/h and <760,000 Btu/h	2.26	246,011	2.36	235,587
	Upflow, ducted	<65,000 Btu/h	2.65	27,100	2.67	26,897
		≥240,000 Btu/h and <760,000 Btu/h	2.26	247,104	2.33	238,620
	Upflow, non-ducted	<65,000 Btu/h	2.09	34,362	2.16	33,248
		≥65,000 Btu/h and <240,000 Btu/h	1.99	129,097	2.04	125,933
		≥240,000 Btu/h and <760,000 Btu/h	1.79	310,606	1.89	294,172
Water-cooled	Downflow	<65,000 Btu/h	2.73	24,726	2.82	23,850
		≥65,000 Btu/h and <240,000 Btu/h	2.63	92,123	2.73	88,749
		≥240,000 Btu/h and <760,000 Btu/h	2.54	208,727	2.67	198,564
	Upflow, ducted	<65,000 Btu/h	2.77	24,280	2.79	24,106
		≥240,000 Btu/h and <760,000 Btu/h	2.56	207,096	2.64	200,821
	Upflow, non-ducted	<65,000 Btu/h	2.25	29,891	2.43	27,677
		≥65,000 Btu/h and <240,000 Btu/h	2.17	112,169	2.32	104,433
		≥240,000 Btu/h and <760,000 Btu/h	2.09	254,888	2.20	240,985
Water-cooled with fluid economizer.	Downflow	<65,000 Btu/h	2.68	15,443	2.77	14,885
		≥65,000 Btu/h and <240,000 Btu/h	2.59	57,537	2.68	55,390
		≥240,000 Btu/h and <760,000 Btu/h	2.50	129,787	2.61	123,819
	Upflow, ducted	<65,000 Btu/h	2.72	15,159	2.74	15,048
		≥240,000 Btu/h and <760,000 Btu/h	2.51	128,753	2.58	125,259
	Upflow, non-ducted	<65,000 Btu/h	2.21	18,657	2.35	17,546
		≥65,000 Btu/h and <240,000 Btu/h	2.13	70,022	2.24	66,271
		≥240,000 Btu/h and <760,000 Btu/h	2.05	158,416	2.12	152,438
Glycol-cooled	Downflow	<65,000 Btu/h	2.43	24,671	2.56	23,419
		≥65,000 Btu/h and <240,000 Btu/h	2.15	101,844	2.24	97,297
		≥240,000 Btu/h and <760,000 Btu/h	2.11	227,098	2.21	215,794
	Upflow, ducted	<65,000 Btu/h	2.47	24,272	2.53	23,696
		≥65,000 Btu/h and <240,000 Btu/h	2.19	99,975	2.21	98,618
		≥240,000 Btu/h and <760,000 Btu/h	2.11	226,021	2.18	218,764
	Upflow, non-ducted	<65,000 Btu/h	2.03	29,679	2.08	28,823
		≥65,000 Btu/h and <240,000 Btu/h	1.77	123,833	1.90	114,708
		≥240,000 Btu/h and <760,000 Btu/h	1.73	275,668	1.81	263,483
Glycol-cooled with fluid economizer.	Downflow	<65,000 Btu/h	2.39	19,813	2.51	18,866
		≥65,000 Btu/h and <240,000 Btu/h	2.11	81,668	2.19	78,312
		≥240,000 Btu/h and <760,000 Btu/h	2.06	182,034	2.15	174,414
	Upflow, ducted	<65,000 Btu/h	2.43	19,567	2.48	19,094
		≥65,000 Btu/h and <240,000 Btu/h	2.14	80,142	2.16	79,400
		≥240,000 Btu/h and <760,000 Btu/h	2.07	182,034	2.12	176,882
	Upflow, non-ducted	<65,000 Btu/h	1.99	23,796	2.00	23,677
		≥65,000 Btu/h and <240,000 Btu/h	1.73	99,135	1.82	94,232
		≥240,000 Btu/h and <760,000 Btu/h	1.69	221,888	1.73	216,757

[1] The air-cooled, upflow ducted, >65,000 Btu/h and <240,000 Btu/h; water-cooled, upflow ducted, >65,000 Btu/h and <240,000 Btu/h; and water-cooled with fluid economizer, upflow ducted, >65,000 Btu/h and <240,000 Btu/h equipment classes are not included in the table, as the ASHRAE Standard 90.1–2019 levels for these classes are equivalent to the current Federal standard.

B. Shipments Analysis

DOE uses shipment projections by equipment class to calculate the national impacts of standards on energy consumption, as well as net present value and future manufacturer cash flows. DOE shipments projections typically are based on available historical data broken out by equipment classes. Current sales estimates allow for a more accurate model that captures recent trends in the market.

In the analysis conducted in the September 2020 NODA/RFI, DOE used confidential shipments data provided by AHRI to calibrate its shipment model to produce a breakdown by equipment class. DOE then used a stock turnover model to project shipments over the 30-year shipments analysis period. The stock turnover model was broken into three cooling capacities (<65,000 Btu/h, ≥65,000 Btu/h and <240,000 Btu/h, and ≥240,000 Btu/h and <760,000 Btu/h), and stock projections for each cooling capacity grew at a constant rate through the 30-year analysis period. 85 FR 60642, 60668–60669 (Sept. 25, 2020). Total shipments are projected to grow slightly over the analysis period, as shown in Table IV–2 of this document. The analysis in the September 2020 NODA/RFI relied in part on the 2012 Commercial Buildings Energy Consumption Survey (CBECS 2012).[13] In response to the September 2020 NODA/RFI, AHRI stated that DOE should rely on CBECS 2018 when it was published. (AHRI No. 2 at p. 3)[14] In the March 2022 ECS NOPR, DOE stated that the full dataset from CBECS 2018 was not available at the time of the NOPR. 87 FR 12802, 12830–12831 (March 7, 2022). DOE added that CBECS 2012 was used to develop a stock of CRACs that would match the shipments provided by AHRI in 2012, so the main driver of shipments analysis was the shipments time series and not CBECS 2012. *Id.* However, DOE stated that to the extent that updated CBECS data become available, DOE will consider such data in the evaluation of a final rule. *Id.* CBECS 2018 data is now available;[15] however as stated previously, using CBECS 2018 would not be expected to significantly change the shipments analysis, as it would be calibrated to confidential shipments data provided by AHRI, just as is done with the CBECS 2012 data. For this reason, and because DOE is not making other analytical updates in this final rule, DOE continues to rely on the shipments data and methodology from the September 2020 NODA/RFI and March 2022 ECS NOPR.

TABLE IV–2—PROJECTED SHIPMENTS

	<65,000 Btu/h	≥65,000 Btu/h and <240,000 Btu/h	≥240,000 Btu/h and <760,000 Btu/h	Total shipments
2020 Shipments	3,208	2,132	3,190	8,530
2052 Shipments	2,634	3,650	3,178	9,462

C. No-New-Standards-Case Efficiency Distribution

The no-new-standards case efficiency distribution is used to establish the market share of each efficiency level in the case where there is no new or amended standard. DOE is unaware of available market data that reports CRAC efficiency in terms of NSenCOP that can be used to determine the no-new-standards case efficiency distribution. DOE estimated the no-new-standards case efficiency distribution for each CRAC equipment class using model counts from DOE's Compliance Certification Database. DOE calculated the fraction of models that are above the current Federal baseline and below the ASHRAE Standard 90.1–2019 level and assigned this to the Federal baseline. All models that are at or above that ASHRAE Standard 90.1–2019 level are assigned to the ASHRAE level. The no-new-standard case distribution for CRACs are presented in Table IV–3.

TABLE IV–3—NO-NEW-STANDARDS CASE EFFICIENCY DISTRIBUTION FOR CRACs[1]

Condenser system type	Airflow configuration	Current net sensible cooling capacity	Federal baseline market share (%)	ASHRAE standard 90.1–2019 level market share (%)
Air-cooled	Downflow	<65,000 Btu/h	2	98
		≥65,000 Btu/h and <240,000 Btu/h	22	78
		≥240,000 Btu/h and <760,000 Btu/h	20	80
	Upflow, ducted	<65,000 Btu/h	0	100
		≥240,000 Btu/h and <760,000 Btu/h	4	96
	Upflow, non-ducted	<65,000 Btu/h	4	96
		≥65,000 Btu/h and <240,000 Btu/h	11	89
		≥240,000 Btu/h and <760,000 Btu/h	23	77
Water-cooled	Downflow	<65,000 Btu/h	11	89
		≥65,000 Btu/h and <240,000 Btu/h	15	85
		≥240,000 Btu/h and <760,000 Btu/h	24	76
	Upflow, ducted	<65,000 Btu/h	0	100
		≥240,000 Btu/h and <760,000 Btu/h	13	87
	Upflow, non-ducted	<65,000 Btu/h	11	89
		≥65,000 Btu/h and <240,000 Btu/h	21	79
		≥240,000 Btu/h and <760,000 Btu/h	27	73

[13] U.S. Department of Energy—Energy Information Administration, 2012 CBECS Survey Data (Available at: *www.eia.gov/consumption/commercial/data/2012/*) (Last accessed March 9, 2020).

[14] Comment received in response to September 2020 NODA/RFI (Available at: *https://www.regulations.gov/document/EERE-2020-BT-STD-0008-0001*).

[15] Available at: *www.eia.gov/consumption/commercial/data/2018/*.

TABLE IV–3—NO-NEW-STANDARDS CASE EFFICIENCY DISTRIBUTION FOR CRACs[1]—Continued

Condenser system type	Airflow configuration	Current net sensible cooling capacity	Federal baseline market share (%)	ASHRAE standard 90.1–2019 level market share (%)
Water-cooled with fluid economizer.	Downflow	<65,000 Btu/h	2	98
		≥65,000 Btu/h and <240,000 Btu/h	13	87
		≥240,000 Btu/h and <760,000 Btu/h	38	62
	Upflow, ducted	<65,000 Btu/h	2	98
		≥240,000 Btu/h and <760,000 Btu/h	13	87
	Upflow, non-ducted	<65,000 Btu/h	8	92
		≥65,000 Btu/h and <240,000 Btu/h	16	84
		≥240,000 Btu/h and <760,000 Btu/h	20	80
Glycol-cooled	Downflow	<65,000 Btu/h	57	43
		≥65,000 Btu/h and <240,000 Btu/h	31	69
		≥240,000 Btu/h and <760,000 Btu/h	36	64
	Upflow, ducted	<65,000 Btu/h	20	80
		≥65,000 Btu/h and <240,000 Btu/h	6	94
		≥240,000 Btu/h and <760,000 Btu/h	30	70
	Upflow, non-ducted	<65,000 Btu/h	20	80
		≥65,000 Btu/h and <240,000 Btu/h	38	62
		≥240,000 Btu/h and <760,000 Btu/h	30	70
Glycol-cooled with fluid economizer.	Downflow	<65,000 Btu/h	57	43
		≥65,000 Btu/h and <240,000 Btu/h	31	69
		≥240,000 Btu/h and <760,000 Btu/h	31	69
	Upflow, ducted	<65,000 Btu/h	10	90
		≥65,000 Btu/h and <240,000 Btu/h	8	92
		≥240,000 Btu/h and <760,000 Btu/h	33	67
	Upflow, non-ducted	<65,000 Btu/h	2	98
		≥65,000 Btu/h and <240,000 Btu/h	30	70
		≥240,000 Btu/h and <760,000 Btu/h	27	73

[1] The air-cooled, upflow ducted, >65,000 Btu/h and <240,000 Btu/h; water-cooled, upflow ducted, >65,000 Btu/h and <240,000 Btu/h; and water-cooled with fluid economizer, upflow ducted, >65,000 Btu/h and <240,000 Btu/h equipment classes are not included in the table, as the ASHRAE Standard 90.1–2019 levels for these equipment classes are equivalent to the current Federal standards.

D. Compliance Dates and Analysis Period

If DOE were to prescribe energy conservation standards at the efficiency levels contained in ASHRAE Standard 90.1–2019, EPCA provides that the compliance date shall be on or after a date that is two or three years (depending on the equipment type or size) after the effective date of the applicable minimum energy efficiency requirement in the amended ASHRAE standard. (42 U.S.C. 6313(a)(6)(D)). If ASHRAE Standard 90.1 does not specify an effective date, then the compliance date specified by statute would be dependent upon the publication date of ASHRAE Standard 90.1–2019.

In this case, ASHRAE Standard 90.1–2019 does not specify an effective date for CRAC levels, so, therefore, the publication date of October 23, 2019, was used to determine the compliance dates for estimating the energy savings potential of adopting ASHRAE Standard 90.1-levels.

For equipment classes for which the ASHRAE Standard 90.1 levels are more stringent than the current Federal standards (*i.e.,* classes for which DOE is triggered), if DOE were to prescribe standards more stringent than the efficiency levels contained in ASHRAE Standard 90.1–2019, EPCA dictates that the compliance date must be on or after a date which is four years after the date of publication of a final rule in the **Federal Register**. (42 U.S.C. 6313(a)(6)(D)) For equipment classes for which DOE is acting under its 6-year lookback authority, if DOE were to adopt more-stringent standards, EPCA states that the compliance date for any such standard shall be after a date that is the later of the date three years after publication of the final rule establishing a new standard or the date six years after the effective date for the current standard. (42 U.S.C. 6313(a)(6)(C)(iv)) As discussed in Section V of this document, DOE is not establishing standards for CRACs that are more stringent than the levels contained in ASHRAE Standard 90.1–2019. For purposes of calculating the NES for the equipment in this evaluation, DOE used a 30-year analysis period starting with the assumed year of compliance listed in Table IV–4 for equipment analyzed in the September 2020 NODA/RFI. This is the standard analysis period of 30 years that DOE typically uses in its NES analysis. For equipment classes with a compliance date in the last six months of the year, DOE starts its analysis period in the first full year after compliance. For example, if CRACs less than 65,000 Btu/h were to have a compliance date of October 23, 2021, the analysis period for calculating NES would begin in 2022 and extend to 2051.

TABLE IV–4—ANALYZED COMPLIANCE DATES OF AMENDED ENERGY CONSERVATION STANDARDS FOR TRIGGERED EQUIPMENT CLASSES

Equipment class	Analyzed compliance dates for efficiency levels in ASHRAE standard 90.1–2019
Computer Room Air Conditioners	
Equipment with current NSCC <65,000 Btu/h.	10/23/2021
Equipment with current NSCC ≥65,000 and <240,000 Btu/h.	10/23/2022
Equipment with current NSCC ≥240,000 Btu/h and <760,000 Btu/h.	10/23/2022

The analysis presented in this final rule relies on the minimum compliance dates provided under EPCA for the energy conservation standards. In the March 2022 ECS NOPR and in this final rule, DOE considered the various applicable lead times required by EPCA and has determined that the compliance date for amended standards for all CRAC equipment classes will be 360 days after the publication date of the final rule adopting amended energy conservation standards. 87 FR 12802, 12834 (March 7, 2022). Comments received on the compliance date are discussed in section V.D of this document.

E. Estimates of Potential Energy Savings

DOE estimated the potential site, primary, and FFC energy savings in quads (*i.e.,* 10^{15} Btu) for adopting ASHRAE Standard 90.1–2019 efficiency levels for CRACs within each equipment class analyzed. The potential energy savings of adopting ASHRAE Standard 90.1–2019 levels are measured relative to the current Federal standards. Table IV–5 shows the potential energy savings resulting from the analyses conducted for CRACs. The reported energy savings are cumulative over the period in which equipment shipped in the 30-year analysis continues to operate. The national energy savings estimates are identical to those provided in the September 2020 NODA/RFI. *See* 85 FR 60642, 60672 (Sep. 25, 2020).

TABLE IV–5—POTENTIAL ENERGY SAVINGS OF ADOPTING ASHRAE STANDARD 90.1–2019 FOR CRACS [1]

Condenser system type	Airflow configuration	Current net sensible cooling capacity	ASHRAE efficiency level	Site savings	Primary savings	FFC savings
			NSenCOP	Quads	Quads	Quads
Air-cooled	Downflow	<65,000 Btu/h	2.70	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	2.58	0.0011	0.0029	0.0030
		≥240,000 Btu/h and <760,000 Btu/h.	2.36	0.0071	0.0185	0.0193
	Upflow, ducted	<65,000 Btu/h	2.67	0.0000	0.0000	0.0000
		≥240,000 Btu/h and <760,000 Btu/h.	2.33	0.0001	0.0003	0.0003
	Upflow, non-ducted	<65,000 Btu/h	2.16	0.0000	0.0001	0.0001
		≥65,000 Btu/h and <240,000 Btu/h.	2.04	0.0003	0.0007	0.0008
		≥240,000 Btu/h and <760,000 Btu/h.	1.89	0.0014	0.0037	0.0039
Water-cooled	Downflow	<65,000 Btu/h	2.82	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	2.73	0.0001	0.0003	0.0003
		≥240,000 Btu/h and <760,000 Btu/h.	2.67	0.0003	0.0007	0.0008
	Upflow, ducted	<65,000 Btu/h	2.79	0.0000	0.0000	0.0000
		≥240,000 Btu/h and <760,000 Btu/h.	2.64	0.0000	0.0001	0.0001
	Upflow, non-ducted	<65,000 Btu/h	2.43	0.0001	0.0004	0.0004
		≥65,000 Btu/h and <240,000 Btu/h.	2.32	0.0002	0.0005	0.0006
		≥240,000 Btu/h and <760,000 Btu/h.	2.20	0.0001	0.0003	0.0003
Water-cooled with fluid economizer.	Downflow	<65,000 Btu/h	2.77	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	2.68	0.0000	0.0000	0.0000
		≥240,000 Btu/h and <760,000 Btu/h.	2.61	0.0001	0.0002	0.0002
	Upflow, ducted	<65,000 Btu/h	2.74	0.0000	0.0000	0.0000
		≥240,000 Btu/h and <760,000 Btu/h.	2.58	0.0000	0.0000	0.0000
	Upflow, non-ducted	<65,000 Btu/h	2.35	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	2.24	0.0000	0.0000	0.0000
		≥240,000 Btu/h and <760,000 Btu/h.	2.12	0.0000	0.0000	0.0000
Glycol-cooled	Downflow	<65,000 Btu/h	2.56	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	2.24	0.0001	0.0002	0.0002
		≥240,000 Btu/h and <760,000 Btu/h.	2.21	0.0001	0.0003	0.0003
	Upflow, ducted	<65,000 Btu/h	2.53	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	2.21	0.0000	0.0000	0.0000
		≥240,000 Btu/h and <760,000 Btu/h.	2.18	0.0000	0.0000	0.0000
	Upflow, non-ducted	<65,000 Btu/h	2.08	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	1.90	0.0001	0.0003	0.0003
		≥240,000 Btu/h and <760,000 Btu/h.	1.81	0.0000	0.0001	0.0001

TABLE IV–5—POTENTIAL ENERGY SAVINGS OF ADOPTING ASHRAE STANDARD 90.1–2019 FOR CRACs [1]—Continued

Condenser system type	Airflow configuration	Current net sensible cooling capacity	ASHRAE efficiency level	Site savings	Primary savings	FFC savings
			NSenCOP	Quads	Quads	Quads
Glycol-cooled with fluid economizer.	Downflow	<65,000 Btu/h	2.51	0.0000	0.0001	0.0001
		≥65,000 Btu/h and <240,000 Btu/h.	2.19	0.0003	0.0007	0.0007
		≥240,000 Btu/h and <760,000 Btu/h.	2.15	0.0009	0.0022	0.0023
	Upflow, ducted	<65,000 Btu/h	2.48	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	2.16	0.0000	0.0000	0.0000
		≥240,000 Btu/h and <760,000 Btu/h.	2.12	0.0002	0.0004	0.0004
	Upflow, non-ducted	<65,000 Btu/h	2.00	0.0000	0.0000	0.0000
		≥65,000 Btu/h and <240,000 Btu/h.	1.82	0.0003	0.0007	0.0008
		≥240,000 Btu/h and <760,000 Btu/h.	1.73	0.0001	0.0003	0.0003

[1] The air-cooled, upflow ducted, >65,000 Btu/h and <240,000 Btu/h; water-cooled, upflow ducted, >65,000 Btu/h and <240,000 Btu/h; and water-cooled with fluid economizer, upflow ducted, >65,000 Btu/h and <240,000 Btu/h equipment classes are not included in the table, as the ASHRAE Standard 90.1–2019 levels for these equipment classes are equivalent to the current Federal standard.

V. Conclusions

A. Consideration of More-Stringent Efficiency Levels

EPCA requires DOE to establish an amended uniform national standard for equipment classes at the minimum level specified in the amended ASHRAE Standard 90.1 unless DOE determines, by rule published in the **Federal Register**, and supported by clear and convincing evidence, that adoption of a uniform national standard more stringent than the amended ASHRAE Standard 90.1 for the equipment class would result in significant additional conservation of energy and is technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)(I)–(II))

In the March 2022 ECS NOPR, DOE tentatively determined that due to the lack of market data in terms of the NSenCOP metric and the test metric change, DOE was unable to determine via clear and convincing evidence that a more-stringent CRAC standard level than that contained in ASHRAE Standard 90.1–2019 would result in significant additional conservation of energy and is technologically feasible and economically justified. 87 FR 12802, 12837–12838 (March 7, 2022). DOE noted that to obtain NSenCOP market data for purposes of analysis of standard levels more stringent than ASHRAE Standard 90.1–2019, DOE would be required to translate the individual SCOP ratings to NSenCOP ratings for all CRAC models certified in DOE's CCMS Database. As the range of model efficiencies increases, so does the number of different technologies used to achieve such efficiencies. With this increase in variation, there is an increase in the potential for variation in the crosswalk results from the actual performance under the new metric of the analyzed models. DOE decided not to conduct further analysis for this particular rulemaking because DOE lacked the data to assess potential energy conservation. *Id.*

AHRI stated that it supports the direct adoption of all NSenCOP values and associated capacities in ASHRAE Standard 90.1, and the commenter agreed that the efficiencies proposed in the NOPR will save energy. (AHRI, No.12 at p. 1)

NYSERDA recognized that the new NSenCOP metric presented difficulty in obtaining accurate market data but commented that changing ASHRAE metrics does not preclude DOE from its obligations to conduct a thorough analysis of the market to determine if there is clear and convincing evidence to set standards above the ASHRAE levels. (NYSERDA, No. 14 at p. 2) NYSERDA urged DOE to conduct further analysis and reassess this determination as more manufacturers adhere to the NSenCOP standards and demonstrate their equipment performance. *Id.* NYSERDA further asserted that, based on their observations of CRAC equipment on the DOE CCMS database, some equipment already have efficiency levels higher than required in ASHRAE Standard 90.1–2019 indicating a potential for more-stringent energy conservation standards, and recommended that DOE re-evaluate CRAC standards sooner than mandated by the six-year-lookback requirement. *Id.*

The CA IOUs encouraged DOE to adopt higher minimum efficiencies than ASHRAE Standard 90.1–2019 for three CRAC classes: (1) Air-cooled Downflow ≥295 kBtu/h and <930 kBtu/h; (2) Air-cooled Upflow Ducted ≥295 kBtu/h and <930 kBtu/h, and (3) Air-cooled Upflow Non-Ducted ≥295 kBtu/h and <930 kBtu/h. (CA IOUs, No. 13 at p. 2) The CA IOUs asserted that based on their analysis, all CRACs sold in the U.S. in these classes are already more efficient than the efficiency levels in ASHRAE 90.1–2019. *Id.* The CA IOUs stated that there are also several CRAC classes where most of the CRACs exceed ASHRAE Standard 90.1–2019 minimum efficiency levels, and the commenter suggested that those classes should be considered for higher levels. *Id.* The CA IOUs added that based on their findings, they would suggest more-stringent standards for this equipment to the governing body of ASHRAE Standard 90.1, and they encouraged DOE participation in the ASHRAE Standard 90.1 process. *Id.*

In response to NYSERDA, DOE notes that it makes determinations pursuant to the ASHRAE trigger (and the six-year look back review) by evaluating the information and data available specific to the equipment under review that is present at that time. DOE is not making a general determination that the clear and convincing evidence threshold cannot be met in all instances in which there is a metric change. Nonetheless, as acknowledged by NYSERDA, the lack of market data in terms of the new metric prevents DOE from comprehensively assessing the potential for energy conservation at the current time. However, in a future rulemaking when more market data are available in terms of the NSenCOP metric, DOE may be in a better position to conduct a full economic analysis.

In response to NYSERDA's and the CA IOU's comment regarding equipment classes with rated equipment efficiencies that are already higher than the minimum efficiency levels in ASHRAE Standard 90.1–2019, DOE notes that it cannot make such a determination without a significant number of manufacturers certifying with the NSenCOP metric. DOE identified NSenCOP market data for less than three percent of the CRAC models certified in DOE's Certification Compliance Database. Even if the analysis presented by the CA IOUs is deemed accurate, DOE does not have enough information to evaluate what an appropriate more-stringent standard would be for the equipment classes which the CA IOUs have identified. In response to the CA IOUs' request that DOE participate in the ASHRAE Standard 90.1 process, the Department notes that as of the time of this final rule, it is an active participant in the ASHRAE Standard 90.1 process.

After considering these stakeholder comments, and the lack of sufficient NSenCOP market data available following the March 2022 ECS NOPR, DOE maintains its preliminary decision not to conduct additional analysis of more-stringent CRAC standards as part of this rulemaking. The lack of market and performance data in terms of the new metric limits the analysis of energy savings that would result from efficiency levels more stringent than the amended ASHRAE Standard 90.1–2019 levels for this equipment. Accordingly, given the limits of any energy use analysis resulting from the lack of data, DOE has concluded that it lacks clear and convincing evidence that more-stringent standards for CRACs would result in a significant additional amount of energy savings as required for DOE to establish such more-stringent standards.

B. Review Under Six-Year Lookback Provision

As discussed, DOE is required to conduct an evaluation of each class of covered equipment in ASHRAE Standard 90.1 every six years. (42 U.S.C. 6313(a)(6)(C)(i)) DOE may only adopt more-stringent standards pursuant to the six-year-lookback review if the Secretary determines, supported by clear and convincing evidence, that the adoption of more-stringent standards would result in significant additional conservation of energy and is technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(C)(i); 42 U.S.C. 6313(a)(6)(A)(ii)(II)) The analysis under the six-year-lookback provision incorporates the same standards and factors as the analysis for whether DOE should adopt a standard more stringent than an amended ASHRAE Standard 90.1 standard. *Id.* Accordingly, DOE is evaluating the six CRAC equipment classes for which ASHRAE Standard 90.1–2019 did not increase the stringency of the standards.

Similar to the triggered classes discussed in section V.A of this document, there are limited NSenCOP data for CRACs within each of these six classes, and there is not a comparable industry analysis (*i.e.,* translating ratings to the updated metric for all models on the market) for comparison. While the crosswalk analysis required only that DOE translate the efficiency levels at the baseline levels, the analysis needed to evaluate whether amended standards more stringent than ASHRAE Standard 90.1–2019 would result in significant energy savings and be technologically feasible and economically justified under the clear and convincing threshold would require more than baseline data—it would require NSenCOP data across all efficiency levels on the market.

Therefore, in line with the same initial reasoning presented in DOE's evaluation of more-stringent standards for those classes of CRAC for which ASHRAE updated the industry standards, DOE determines that the clear and convincing evidence threshold is not met for these six classes. As such, DOE did not conduct an energy savings analysis of standard levels more stringent than the current Federal standard levels for the classes of CRACs not triggered by ASHRAE Standard 90.1–2019 (*i.e.,* the six classes of CRAC for which ASHRAE Standard 90.1–2019 does not specify more-stringent minimum efficiency levels).

C. Definition for Ducted Condenser

As indicated, ASHRAE Standard 90.1–2019 includes separate equipment classes for ceiling-mounted CRACs with ducted condensers. The current definitions at 10 CFR 431.92 do not include a definition of ''ducted condenser.'' In the March 2022 ECS NOPR, DOE proposed the following definition of ''ducted condenser'' at 10 CFR 431.92, consistent with the definition specified in section 3.2.11.1 of AHRI 1360–2022. 87 FR 12802, 12839 (March 7, 2022).

Ducted Condenser means a configuration of computer room air conditioner for which the condenser or condensing unit that manufacturer's installation instructions indicate is intended to exhaust condenser air through a duct(s).

DOE did not receive any comments on this definition, and for the reasons previously explained, the Department is finalizing it as proposed.

D. Amended Energy Conservation Standards

DOE is amending the energy conservation standards for CRACs by adopting the efficiency levels specified for CRACs in ASHRAE Standard 90.1–2019. The standards, which are expressed in terms of NSenCOP, are shown in Table V–1 and Table V–2 of this document. These standards apply to all CRACs listed in Table V–1 and Table V–2 of this document manufactured in, or imported into, the United States starting on the compliance date as discussed in the following paragraphs.

TABLE V–1—AMENDED STANDARDS FOR FLOOR-MOUNTED CRACS

Equipment type	Net sensible cooling capacity [16]	Minimum NSenCOP efficiency		Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Downflow	Upflow ducted		Upflow non-ducted	Horizontal flow
Air-Cooled	<80,000 Btu/h	2.70	2.67	<65,000 Btu/h	2.16	2.65
	≥80,000 Btu/h and <295,000 Btu/h.	2.58	2.55	≥65,000 Btu/h and <240,000 Btu/h.	2.04	2.55
	≥295,000 Btu/h and <930,000 Btu/h.	2.36	2.33	≥240,000 Btu/h and <760,000 Btu/h.	1.89	2.47
Air-Cooled with Fluid Economizer.	<80,000 Btu/h	2.70	2.67	<65,000 Btu/h	2.09	2.65

TABLE V–1—AMENDED STANDARDS FOR FLOOR-MOUNTED CRACs—Continued

Equipment type	Net sensible cooling capacity [16]	Minimum NSenCOP efficiency		Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Downflow	Upflow ducted		Upflow non-ducted	Horizontal flow
	≥80,000 Btu/h and <295,000 Btu/h.	2.58	2.55	≥65,000 Btu/h and <240,000 Btu/h.	1.99	2.55
	≥295,000 Btu/h and <930,000 Btu/h.	2.36	2.33	≥240,000 Btu/h and <760,000 Btu/h.	1.81	2.47
Water-Cooled	<80,000 Btu/h	2.82	2.79	<65,000 Btu/h	2.43	2.79
	≥80,000 Btu/h and <295,000 Btu/h.	2.73	2.70	≥65,000 Btu/h and <240,000 Btu/h.	2.32	2.68
	≥295,000 Btu/h and <930,000 Btu/h.	2.67	2.64	≥240,000 Btu/h and <760,000 Btu/h.	2.20	2.60
Water-Cooled with Fluid Economizer.	<80,000 Btu/h	2.77	2.74	<65,000 Btu/h	2.35	2.71
	≥80,000 Btu/h and <295,000 Btu/h.	2.68	2.65	≥65,000 Btu/h and <240,000 Btu/h.	2.24	2.60
	≥295,000 Btu/h and <930,000 Btu/h.	2.61	2.58	≥240,000 Btu/h and <760,000 Btu/h.	2.12	2.54
Glycol-Cooled	<80,000 Btu/h	2.56	2.53	<65,000 Btu/h	2.08	2.48
	≥80,000 Btu/h and <295,000 Btu/h.	2.24	2.21	≥65,000 Btu/h and <240,000 Btu/h.	1.90	2.18
	≥295,000 Btu/h and <930,000 Btu/h.	2.21	2.18	≥240,000 Btu/h and <760,000 Btu/h.	1.81	2.18
Glycol-Cooled with Fluid Economizer.	<80,000 Btu/h	2.51	2.48	<65,000 Btu/h	2.00	2.44
	≥80,000 Btu/h and <295,000 Btu/h.	2.19	2.16	≥65,000 Btu/h and <240,000 Btu/h.	1.82	2.10
	≥295,000 Btu/h and <930,000 Btu/h.	2.15	2.12	≥240,000 Btu/h and <760,000 Btu/h.	1.73	2.10

TABLE V–2—AMENDED STANDARDS FOR CEILING-MOUNTED CRACs

Equipment type	Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Ducted	Non-ducted
Air-Cooled with Free Air Discharge Condenser	<29,000 Btu/h	2.05	2.08
	≥29,000 Btu/h and <65,000 Btu/h	2.02	2.05
	≥65,000 Btu/h and <760,000 Btu/h	1.92	1.94
Air-Cooled with Free Air Discharge Condenser and Fluid Economizer.	<29,000 Btu/h	2.01	2.04
	≥29,000 Btu/h and <65,000 Btu/h	1.97	2.00
	≥65,000 Btu/h and <760,000 Btu/h	1.87	1.89
Air-Cooled with Ducted Condenser	<29,000 Btu/h	1.86	1.89
	≥29,000 Btu/h and <65,000 Btu/h	1.83	1.86
	≥65,000 Btu/h and <760,000 Btu/h	1.73	1.75
Air-Cooled with Fluid Economizer and Ducted Condenser.	<29,000 Btu/h	1.82	1.85
	≥29,000 Btu/h and <65,000 Btu/h	1.78	1.81
	≥65,000 Btu/h and <760,000 Btu/h	1.68	1.70
Water-Cooled	<29,000 Btu/h	2.38	2.41
	≥29,000 Btu/h and <65,000 Btu/h	2.28	2.31
	≥65,000 Btu/h and <760,000 Btu/h	2.18	2.20
Water-Cooled with Fluid Economizer	<29,000 Btu/h	2.33	2.36
	≥29,000 Btu/h and <65,000 Btu/h	2.23	2.26
	≥65,000 Btu/h and <760,000 Btu/h	2.13	2.16
Glycol-Cooled	<29,000 Btu/h	1.97	2.00
	≥29,000 Btu/h and <65,000 Btu/h	1.93	1.98
	≥65,000 Btu/h and <760,000 Btu/h	1.78	1.81
Glycol-Cooled with Fluid Economizer	<29,000 Btu/h	1.92	1.95
	≥29,000 Btu/h and <65,000 Btu/h	1.88	1.93
	≥65,000 Btu/h and <760,000 Btu/h	1.73	1.76

[16] DOE has used 930,000 Btu/h as the adjusted upper capacity limit for downflow and upflow ducted CRACs in its analysis (see section III.C of this document). The 930,000 Btu/h upper capacity limit (as measured per AHRI 1360–2022) used in the crosswalk analysis is equivalent to the 760,000 Btu/h upper capacity limit (as measured per ANSI/ASHRAE 127–2007) established in the current DOE standards.

As noted, in instances in which DOE is amending an energy conservation standard for CRACs in response to updates to ASHRAE Standard 90.1, EPCA specifies certain compliance lead times based on equipment capacity. If DOE were to prescribe energy conservation standards at the efficiency levels contained in the updated ASHRAE Standard 90.1, EPCA states that any such standard shall become effective on or after a date that is two or three years (depending on the equipment type or size) after the effective date of the applicable minimum energy efficiency requirement in the amended ASHRAE standard. (42 U.S.C. 6313(a)(6)(D)) In the present case, were DOE to adopt amended standards for ''small'' CRACs (*i.e.,* CRACs with a capacity of less than 65,000 Btu/h) at the levels specified in ASHRAE Standard 90.1, EPCA provides that the compliance date must be on or after a date which is two years after the effective date of the level specified in the updated ASHRAE Standard 90.1 (*i.e.,* October 23, 2021). Were DOE to adopt amended standards for ''large'' and ''very large'' CRACs (*i.e.,* CRACs with a capacity equal to or greater than 65,000 Btu/h) at the levels specified in ASHRAE Standard 90.1, EPCA provides that the compliance date must be on or after a date which is three years after the effective date of the level specified in the updated ASHRAE Standard 90.1 (*i.e.,* October 23, 2022).

If DOE were to prescribe standards more stringent than the efficiency levels contained in ASHRAE Standard 90.1–2019, EPCA dictates that any such standard will become effective for equipment manufactured on or after a date which is four years after the date of publication of a final rule in the **Federal Register**. (42 U.S.C. 6313(a)(6)(D)) For equipment classes for which DOE is acting under its 6-year-lookback authority, if DOE were to adopt more-stringent standards, EPCA states that any such standard shall apply to equipment manufactured after a date that is the latter of the date three years after publication of the final rule establishing such standard or six years after the effective date for the current standard. (42 U.S.C. 6313(a)(6)(C)(iv))

Moreover, the amended energy conservation standards are based on a new metric (*i.e.,* NSenCOP), and DOE has amended the test procedure to rely on NSenCOP in the March 2023 TP final rule. *See* EERE–2021–BT–TP–0017. As adopted in the March 2023TP final rule, the compliance date of the amended test procedure for CRACs using the NSenCOP metric will be the compliance date of amended standards in terms of NSenCOP.

In the March 2022 ECS NOPR, DOE considered these various applicable lead times relevant under EPCA to standards (*i.e.,* October 23, 2021, for ''small'' CRACs and October 23, 2022, for ''large'' and ''very large'' CRACs) and the 360-day lead time relevant to a test procedure update addressing NSenCOP. 87 FR 12802, 12843 (March 7, 2022). In order to align the compliance dates across equipment classes and account for an updated test procedure, should one be finalized, DOE proposed that the compliance date for amended standards for all CRAC equipment classes would be 360 days after the publication date of the final rule adopting amended energy conservation standards. *Id.*

The CA IOUs supported DOE's proposal to align compliance dates across equipment classes and noted that this approach will reduce the compliance burden for manufacturers and streamline future rulemakings for this equipment for all stakeholders. (CA IOUs, No. 13 at p. 2)

AHRI agreed with DOE's assessment that proposed standards, if adopted, would apply to all CRACs listed in Table I–1 and Table I–2 manufactured in, or imported into, the United States on the same date. (AHRI, No. 12 at p. 3) However, AHRI commented that given the proposed expansion of the covered equipment, and the change in Federal metric being considered, DOE should cover all equipment classes included in ASHRAE Standard 90.1–2019 on one of the two compliance dates options presented by EPCA rather than the ''arbitrary'' 360-day compliance period proposed. *Id.*

In response, DOE notes that both the compliance date options presented by EPCA (and suggested by AHRI) are dates certain tied to the effective date of the amended ASHRAE Standard 90.1 which have already passed (*i.e.,* October 23, 2021 and October 23, 2022). Following the statutory scheme, an argument could be made for requiring immediate compliance with the amended standards, since the adopted ASHRAE Standard 90.1 levels were promulgated and known in late 2019. However, DOE nevertheless concludes that some reasonable lead time would be needed for all CRAC manufacturers to come into compliance with the amended Federal standards. Therefore, given that EPCA's specified timelines are no longer feasible, and that DOE has now finalized a test procedure adopting NSenCOP as the metric, DOE has decided to adopt a compliance date for the amended standards for all CRAC equipment classes that is 360 days after the publication date in the **Federal Register** of this final rule adopting amended energy conservation standards. DOE has determined that lead time of 360 days would be adequate for manufacturers to come into compliance with the amended CRAC standards.

1. Impact of Any Lessening of Competition

EPCA directs DOE to consider the impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from a standard. (*See* 42 U.S.C. 6313(a)(6)(B)(ii)(V)) To assist the Department of Justice (DOJ) in making such a determination, DOE transmitted copies of its proposed rule to the Attorney General for review, with a request that the DOJ provide its determination on this issue. In its assessment letter responding to DOE, DOJ concluded that the proposed energy conservation standards for CRACs are unlikely to have a significant adverse impact on competition. DOE is publishing the Attorney General's assessment at the end of this final rule. DOE did not receive any public comments on this issue.

VI. Procedural Issues and Regulatory Review

A. Review Under Executive Orders 12866 and 13563

Executive Order (E.O.) 12866, ''Regulatory Planning and Review,'' 58 FR 51735 (Oct. 4, 1993), as supplemented and reaffirmed by E.O. 13563, ''Improving Regulation and Regulatory Review,'' 76 FR 3821 (Jan. 21, 2011), requires agencies, to the extent permitted by law, to: (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public. DOE emphasizes as well that E.O. 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB) has emphasized that such techniques may include identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes. For the reasons stated in the preamble, this regulatory action is consistent with these principles.

Section 6(a) of E.O. 12866 also requires agencies to submit ''significant regulatory actions'' to OIRA for review. OIRA has determined that this final rule does not constitute a ''significant regulatory action'' under section 3(f) of E.O. 12866. Accordingly, this action was not submitted to OIRA for review under E.O. 12866.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of an initial regulatory flexibility analysis (IRFA) and a final regulatory flexibility analysis (FRFA) for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by E.O. 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 rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's website (*www.energy.gov/gc/office-general-counsel*). DOE reviewed this final rule under the provisions of the Regulatory Flexibility Act and the policies and procedures published on February 19, 2003.

DOE has prepared the following FRFA for the equipment that is the subject of this energy conservation standards rulemaking.

1. Description of Reasons Why Action Is Being Considered

DOE is amending the existing DOE minimum efficiency standards for CRACs as is required under EPCA's ASHRAE trigger requirement and the six-year-lookback provision. DOE must update the Federal minimum efficiency standards to be consistent with levels published in ASHRAE Standard 90.1, unless DOE determines, supported by clear and convincing evidence, that adoption of a more-stringent level would produce significant additional conservation of energy and would be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)) DOE must also review and determine whether to amend standards of each class of covered equipment in ASHRAE Standard 90.1 every six years. (42 U.S.C. 6313(a)(6)(C)(i))

2. Objectives of, and Legal Basis for, Rule

EPCA directs that if ASHRAE amends ASHRAE Standard 90.1, DOE must adopt amended standards at the new ASHRAE efficiency level, unless DOE determines, supported by clear and convincing evidence, that adoption of a more-stringent level would produce significant additional conservation of energy and would be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)) Under a separate provision of EPCA, DOE must also review energy efficiency standards for CRACs every six years and either: (1) issue a notice of determination that the standards do not need to be amended as adoption of a more-stringent level is not supported by clear and convincing evidence; or (2) issue a notice of proposed rulemaking including new proposed standards based on certain criteria and procedures in subparagraph (B). (42 U.S.C. 6313(a)(6)(C))

3. Description on Estimated Number of Small Entities Regulated

For manufacturers of CRACs, the Small Business Administration (SBA) has set a size threshold, which defines those entities classified as ''small businesses'' for the purposes of the statute. DOE used the SBA's small business size standards to determine whether any small entities would be subject to the requirements of the rule. (*See* 13 CFR part 121.) The size standards are listed by North American Industry Classification System (NAICS) code and industry description and are available at: *www.sba.gov/document/support--table-size-standards.* Manufacturing of CRACs is classified under NAICS 333415, ''Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing.'' In 13 CFR 121.201, the SBA sets a threshold of 1,250 employees or fewer for an entity to be considered as a small business for this category.

DOE used publicly-available information to identify potential small businesses that manufacture equipment covered this this final rule. DOE identified ten manufacturers of equipment covered by this final rule. Of the ten, nine manufacturers are original equipment manufacturers (OEM). DOE screened out companies that do not meet the definition of a ''small business'' or are foreign-owned and operated. DOE used subscription-based business information tools to determine head count and revenue of the small businesses. Of these nine OEMs, DOE identified three companies that are small, domestic OEMs.

In the March 2022 ECS NOPR, DOE requested comment on the number of small manufacturers producing covered CRACs, DOE's understanding of the current market, and DOE's assessment of the efficiency of the equipment offered by the identified small manufacturers. 87 FR 12802, 12844 (March 7, 2022).

AHRI commented that it represents the following single package vertical units (SPVU) companies that likely meet the criteria of small businesses that could be disproportionally impacted by amended energy conservation standards: Bard Manufacturing Company, Marvair, Systemair, Temspec, and United CoolAir. (AHRI, No. 12 at p. 5) AHRI commented that it was not aware of any traditional CRAC manufacturers that would be considered by DOE as a small business, but that if DOE adopts AHRI 1360–202X Draft, SPVU and RTU [17] manufacturers would be impacted. *Id.*

In response, DOE notes that the manufacturers highlighted by AHRI do not manufacture floor-mounted or ceiling-mounted CRACs, which are the equipment for which DOE is adopting amended standards in this rulemaking. While these manufacturers primarily manufacture SPVUs, which are not the subject of this rulemaking, DOE's review found that two of these manufacturers also offer products that meet the definition of wall-mounted CRAC. One of the two manufacturers qualifies as a small business under the applicable NAICS code (NAICS code 333415). However, DOE notes that there are currently no energy conservation standards for wall-mounted CRACs, and DOE is not adopting standards for wall-mounted or roof-mounted CRACs in this final rule. Therefore, there is no associated impact to these

[17] DOE understand RTU to mean ''roof-top units'' and a reference to roof-mounted CRACs.

manufacturers from this rulemaking. Consequently, DOE has retained its count of small manufacturers from the March 2022 ECS NOPR.

4. Description and Estimate of Compliance Requirements Including Differences in Cost, if Any, for Different Groups of Small Entities

As noted in the section 2 of the Review under the Regulatory Flexibility Act, DOE must adopt amended standards at the new ASHRAE efficiency level unless DOE determines, supported by clear and convincing evidence, that adoption of a more-stringent standard would produce significant additional conservation of energy and would be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)) Because DOE had made no such determination, this final rule adopts amended standards at the new ASHRAE efficiency level rather than impose more-stringent standards. This is required by EPCA, but is also less burdensome for small manufacturers than a more-stringent standard.

In reviewing all commercially-available models in DOE's Compliance Certification Database, the three small manufacturers account for 13 percent of industry model offerings. For each of the three small manufacturers, approximately 90 percent of current models would meet the adopted levels. The small manufacturers will need to either discontinue or redesign non-compliant models. DOE recognizes that small manufacturers may need to spread redesign costs over lower shipment volumes than the industry-at-large. However, adoption of standards at least as stringent as the ASHRAE levels is required under EPCA; furthermore, adopting standards above ASHRAE levels (DOE's only other option under 42 U.S.C. 6313(a)(6)(A)(ii)) would lead to an even greater portion of models requiring redesign.

5. Duplication, Overlap, and Conflict With Other Rules and Regulations

DOE is not aware of any rules or regulations that duplicate, overlap, or conflict with this rule.

6. Significant Alternatives to the Rule

As EPCA requires DOE to either adopt the ASHRAE Standard 90.1 levels or to adopt higher standards, DOE lacks discretion to mitigate impacts to small businesses from the ASHRAE Standard 90.1 levels. In this rulemaking, DOE is adopting the ASHRAE Standard 90.1–2019 levels.

Additional compliance flexibilities may be available through other means. Section 504 of the Department of Energy Organization Act, 42 U.S.C. 7194, provides authority for the Secretary to adjust a rule issued under EPCA in order to prevent ''special hardship, inequity, or unfair distribution of burdens'' that may be imposed on that manufacturer as a result of such rule. Manufacturers should refer to 10 CFR part 1003 for additional detail.

C. Review Under the Paperwork Reduction Act of 1995

Manufacturers of CRACs must certify to DOE that their equipment complies with any applicable energy conservation standards. In certifying compliance, manufacturers must test their equipment according to the DOE test procedures for CRACs, 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 CRACs. (*See generally* 10 CFR part 429.) 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 35 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.

DOE is not amending the certification or reporting requirements for CRACs in this final rule. Instead, DOE may consider proposals to amend the certification requirements and reporting for CRACs under a separate rulemaking regarding appliance and equipment certification. DOE will address changes to OMB Control Number 1910–1400 at that time, as necessary.

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

Pursuant to the National Environmental Policy Act of 1969 (NEPA), DOE has analyzed this final rule in accordance with NEPA and DOE's NEPA implementing regulations (10 CFR part 1021). DOE has determined that this rule qualifies for categorical exclusion under 10 CFR part 1021, subpart D, appendix B5.1 because it is a rulemaking that establishes energy conservation standards for consumer products or industrial equipment, none of the exceptions identified in categorical exclusion B5.1(b) apply, no extraordinary circumstances exist that require further environmental analysis, and it otherwise meets the requirements for application of a categorical exclusion. *See* 10 CFR 1021.410. Therefore, DOE has determined that promulgation of this final rule is not a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA, and does not require an environmental assessment or an environmental impact statement.

E. Review Under Executive Order 13132

E.O. 13132, ''Federalism,'' 64 FR 43255 (August 10, 1999), imposes certain requirements on Federal 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 equipment 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. 6316(a) and (b); 42 U.S.C. 6297) Therefore, no further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of E.O.

12988, ''Civil Justice Reform,'' 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. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of E.O. 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 E.O. 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 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 E.O. 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 ''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 them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE's policy statement is also available at: *www.energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf.*

DOE examined this final rule according to UMRA and its statement of policy and determined that this rule does not contain a Federal intergovernmental mandate, nor is it expected to require expenditures of $100 million or more in any one year by State, local, and Tribal governments, in the aggregate, or by the private sector. As a result, the analytical requirements of UMRA 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 (Pub. L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This final rule would 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

Pursuant to E.O. 12630, ''Governmental Actions and Interference with Constitutionally Protected Property Rights,'' 53 FR 8859 (March 18, 1988), DOE has determined that this rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under the 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 Federal agencies to review most disseminations of information to the public under information quality 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). Pursuant to OMB Memorandum M–19–15, ''Improving Implementation of the Information Quality Act'' (April 24, 2019), DOE published updated guidelines which are available at: *www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf.* 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

E.O. 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 OIRA at OMB, a Statement of Energy Effects for any significant energy action. A ''significant energy action'' is defined as any action by an agency that promulgates 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.

DOE has concluded that this regulatory action, which sets forth amended and new energy conservation standards for CRACs, is not a significant energy action because it is not a significant regulatory action under Executive Order 12866. Moreover, the standards are not likely to have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as such by the Administrator at OIRA. Accordingly, DOE has not prepared a Statement of Energy Effects.

L. Review Under the Information Quality Bulletin for Peer Review

On December 16, 2004, OMB, in consultation with the Office of Science and Technology Policy (OSTP), issued its Final Information Quality Bulletin for Peer Review (the Bulletin). 70 FR 2664 (Jan. 14, 2005). The Bulletin establishes that certain scientific information shall be peer reviewed by qualified specialists before it is disseminated by the Federal Government, including influential scientific information related to agency regulatory actions. The purpose of the Bulletin is to enhance the quality and credibility of the Government's scientific information. Under the Bulletin, the energy conservation standards rulemaking analyses are ''influential scientific information,'' which the Bulletin defines as "scientific information the agency reasonably can determine will have, or does have, a clear and substantial impact on important public policies or private sector decisions." *Id.* at 70 FR 2667.

In response to OMB's Bulletin, DOE conducted formal peer reviews of the energy conservation standards development process and the analyses that are typically used and has prepared a Peer Review report pertaining to the energy conservation standards rulemaking analyses.[18] Generation of this report involved a rigorous, formal, and documented evaluation using objective criteria and qualified and independent reviewers to make a judgment as to the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of programs and/or projects. Because available data, models, and technological understanding have changed since 2007, DOE has engaged with the National Academy of Sciences to review DOE's analytical methodologies to ascertain whether modifications are needed to improve the Department's analyses. DOE is in the process of evaluating the resulting December 2021 NAS report.[19]

The following standards were previously approved for incorporation by reference into the provisions where they appear in this rulemaking and no change to the standards are being made: AHRI 210/240–2008, AHRI 340/360–2007, and ISO Standard 13256–1.

M. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this rule prior to 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).

VII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final rule.

List of Subjects in 10 CFR Part 431

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Laboratories, Reporting and recordkeeping requirements, Small businesses.

Signing Authority

This document of the Department of Energy was signed on March 30, 2023, by Francisco Alejandro Moreno, Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on May 17, 2023.

Treena V. Garrett,

Federal Register Liaison Officer, U.S. Department of Energy.

For the reasons set forth in the preamble, DOE amends part 431 of chapter II, subchapter D, of title 10 of the Code of Federal Regulations, as set forth below:

PART 431—ENERGY EFFICIENCY PROGRAM FOR CERTAIN COMMERCIAL AND INDUSTRIAL EQUIPMENT

■ 1. The authority citation for part 431 continues to read as follows:

Authority: 42 U.S.C. 6291–6317; 28 U.S.C. 2461 note.

■ 2. Amend § 431.92 by adding in alphabetical order a definition for "Ducted Condenser" to read as follows:

§ 431.92 Definitions concerning commercial air conditioners and heat pumps.

* * * * *

Ducted Condenser means a configuration of *computer room air conditioner* for which the condenser or condensing unit that manufacturer's installation instructions indicate is intended to exhaust condenser air through a duct(s).

* * * * *

■ 3. Amend § 431.96 by revising table 1 to paragraph (b) to read as follows:

§ 431.96 Uniform test method for the measurement of energy efficiency of commercial air conditioners and heat pumps.

* * * * *

(b) * * *

TABLE 1 TO PARAGRAPH (b)—TEST PROCEDURES FOR COMMERCIAL AIR CONDITIONERS AND HEAT PUMPS

Equipment type	Category	Cooling capacity or moisture removal capacity[2]	Energy efficiency descriptor	Use tests, conditions, and procedures[1] in	Additional test procedure provisions as indicated in the listed paragraphs of this section
Small Commercial Package Air-Conditioning and Heating Equipment.	Air-Cooled, 3-Phase, AC and HP.	<65,000 Btu/h	SEER and HSPF.	Appendix F to this subpart[3].	None.
			SEER2 and HSPF2.	Appendix F1 to this subpart[3].	None.
	Air-Cooled AC and HP	≥65,000 Btu/h and <135,000 Btu/h.	EER, IEER, and COP.	Appendix A of this subpart.	None.
	Water-Cooled and Evaporatively-Cooled AC.	<65,000 Btu/h	EER	AHRI 210/240–2008 (omit section 6.5).	Paragraphs (c) and (e).

[18] The 2007 "Energy Conservation Standards Rulemaking Peer Review Report" is available at: *energy.gov/eere/buildings/downloads/energy-conservation-standards-rulemaking-peer-review-report-0* (Last accessed Nov. 8, 2022).

[19] The December 2021 NAS report is available at *www.nationalacademies.org/our-work/review-of-methods-for-setting-building-and-equipment-performance-standards.*

TABLE 1 TO PARAGRAPH (b)—TEST PROCEDURES FOR COMMERCIAL AIR CONDITIONERS AND HEAT PUMPS—Continued

Equipment type	Category	Cooling capacity or moisture removal capacity [2]	Energy efficiency descriptor	Use tests, conditions, and procedures [1] in	Additional test procedure provisions as indicated in the listed paragraphs of this section
		≥65,000 Btu/h and <135,000 Btu/h.	EER	AHRI 340/360–2007 (omit section 6.3).	Paragraphs (c) and (e).
	Water-Source HP	<135,000 Btu/h	EER and COP	ISO Standard 13256–1	Paragraph (e).
Large Commercial Package Air-Conditioning and Heating Equipment.	Air-Cooled AC and HP	≥135,000 Btu/h and <240,000 Btu/h.	EER, IEER and COP.	Appendix A to this subpart.	None.
	Water-Cooled and Evaporatively-Cooled AC.	≥135,000 Btu/h and <240,000 Btu/h.	EER	AHRI 340/360–2007 (omit section 6.3).	Paragraphs (c) and (e).
Very Large Commercial Package Air-Conditioning and Heating Equipment.	Air-Cooled AC and HP	≥240,000 Btu/h and <760,000 Btu/h.	EER, IEER and COP.	Appendix A to this subpart.	None.
	Water-Cooled and Evaporatively-Cooled AC.	≥240,000 Btu/h and <760,000 Btu/h.	EER	AHRI 340/360–2007 (omit section 6.3).	Paragraphs (c) and (e).
Packaged Terminal Air Conditioners and Heat Pumps.	AC and HP	<760,000 Btu/h	EER and COP	Paragraph (g) of this section.	Paragraphs (c), (e), and (g).
Computer Room Air Conditioners.	AC	<760,000 Btu/h	SCOP	Appendix E to this subpart [3].	None.
		<760,000 Btu/h or <930,000 Btu/h [4].	NSenCOP	Appendix E1 to this subpart [3].	None.
Variable Refrigerant Flow Multi-split Systems.	AC	<65,000 Btu/h (3-phase).	SEER	Appendix F to this subpart [3].	None.
			SEER2	Appendix F1 to this subpart [3].	None.
Variable Refrigerant Flow Multi-split Systems, Air-cooled.	HP	<65,000 Btu/h (3-phase).	SEER and HSPF.	Appendix F to this subpart [3].	None.
			SEER2 and HSPF2.	Appendix F1 to this subpart [3].	None.
Variable Refrigerant Flow Multi-split Systems, Air-cooled.	AC and HP	≥65,000 Btu/h and <760,000 Btu/h.	EER and COP	Appendix D of this subpart [3].	None.
		≥65,000 Btu/h and <760,000 Btu/h.	IEER and COP	Appendix D1 of this subpart [3].	None.
Variable Refrigerant Flow Multi-split Systems, Water-source.	HP	<760,000 Btu/h	EER and COP	Appendix D of this subpart [3].	None.
		<760,000 Btu/h	IEER and COP	Appendix D1 of this subpart [3].	None.
Single Package Vertical Air Conditioners and Single Package Vertical Heat Pumps.	AC and HP	<760,000 Btu/h	EER and COP	Appendix G to this subpart [3].	None.
			EER, IEER, and COP.	Appendix G1 to this subpart [3].	None.
Direct Expansion-Dedicated Outdoor Air Systems.	All	<324 lbs. of moisture removal/hr.	ISMRE2 and ISCOP2.	Appendix B of this subpart.	None.

[1] Incorporated by reference; see § 431.95.
[2] Moisture removal capacity applies only to direct expansion-dedicated outdoor air systems.
[3] For equipment with multiple appendices listed in this table, consult the notes at the beginning of those appendices to determine the applicable appendix to use for testing.
[4] For upflow ducted and downflow floor-mounted computer room air conditioners, the test procedure in appendix E1 of this subpart applies to equipment with net sensible cooling capacity less than 930,000 Btu/h. For all other configurations of computer room air conditioners, the test procedure in appendix E1 applies to equipment with net sensible cooling capacity less than 760,000 Btu/h.

* * * * *

■ 4. Section 431.97 is amended by:
■ a. Removing the words ''Tables 1 through 6 of this section'' and adding in their place the words ''tables 1 through 6 to this paragraph (b)'' in paragraph (b) introductory text;
■ b. Revising the headings to tables 5 and 6 in paragraph (b);
■ c. Removing the words ''Table 7 of this section'' and adding in their place the words ''tables 7 to this paragraph (c)'' and removing the words ''Table 8 of this section'' and adding in their place the words ''table 8 to this paragraph (c)'' in paragraph (c) introductory text;
■ d. Revising the headings to tables 7 and 8 in paragraph (c);
■ e. Revising the headings to tables 9, 10, and 11 in paragraphs (d)(1), (2), and (3), respectively;
■ f. Revising paragraph (e);
■ g. Removing the words ''table 13 this section'' and adding in their place the words ''table 15 to this paragraph (f)(1)'' in paragraph (f)(1) introductory text;
■ h. Redesignating table 13 to § 431.97(f)(1) as table 15 to § 431.97(f)(1);
■ i. Removing the words ''table 14 of this section'' and adding in their place the words ''table 16 to this paragraph

(f)(2)'' in paragraph (f)(2) introductory text;

■ j. Redesignating table 14 to Paragraph (f)(2) to § 431.97 as table 16 and revising the heading;

■ k. Removing the words ''table 14 of this section'' and adding in their place the words ''table 17 to this paragraph (g)'' in paragraph (g) introductory text;

■ l. Redesignating table 15 as table 17 in paragraph (g) and revising the heading;

■ m. Removing the words ''tables 16 and 17 to this paragraph (h)'' and adding in their place the words ''tables 18 and 19 to this paragraph (h)'' in paragraph (h) introductory text; and

■ n. Redesignating tables 16 and 17 as tables 18 and 19 in paragraph (h).

The revisions read as follows:

§ 431.97 Energy efficiency standards and their compliance dates.

* * * * *

(b) * * *

Table 5 to § 431.97(b)—Minimum Cooling Efficiency Standards for Double-Duct Air-Conditioning and Heating Equipment

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Table 6 to § 431.97(b)—Minimum Heating Efficiency Standards for Double-Duct Air-Cooled Air Conditioning and Heating Equipment

* * * * *

(c) * * *

Table 7 to § 431.97(c)—Minimum Efficiency Standards for PTAC and PTHP

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Table 8 to § 431.97(c)—Updated Minimum Efficiency Standards for PTAC

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(d)(1) * * *

Table 9 to § 431.97(d)(1)—Minimum Efficiency Standards for Single Package Vertical Air Conditioners and Single Package Vertical Heat Pumps

* * * * *

(2) * * *

Table 10 to § 431.97(d)(2)—Minimum Efficiency Standards for Single Package Vertical Air Conditioners and Single Package Vertical Heat Pumps

* * * * *

(3) * * *

Table 11 to § 431.97(d)(3)—Updated Minimum Efficiency Standards for Single Package Vertical Air Conditioners and Single Package Vertical Heat Pumps

* * * * *

(e)(1) Each computer room air conditioner with a net sensible cooling capacity less than 65,000 Btu/h manufactured on or after October 29, 2012, and before May 28, 2024 and each computer room air conditioner with a net sensible cooling capacity greater than or equal to 65,000 Btu/h and less than 760,000 Btu/h manufactured on or after October 29, 2013, and before May 28, 2024 must meet the applicable minimum energy efficiency standard level(s) set forth in table 12 to this paragraph (e)(1).

TABLE 12 TO § 431.97(e)(1)—MINIMUM EFFICIENCY STANDARDS FOR COMPUTER ROOM AIR CONDITIONERS

Equipment type	Net sensible cooling capacity	Minimum SCOP efficiency	
		Downflow	Upflow
Air-Cooled	<65,000 Btu/h	2.20	2.09
	≥65,000 Btu/h and <240,000 Btu/h	2.10	1.99
	≥240,000 Btu/h and <760,000 Btu/h	1.90	1.79
Water-Cooled	<65,000 Btu/h	2.60	2.49
	≥65,000 Btu/h and <240,000 Btu/h	2.50	2.39
	≥240,000 Btu/h and <760,000 Btu/h	2.40	2.29
Water-Cooled with Fluid Economizer	<65,000 Btu/h	2.55	2.44
	≥65,000 Btu/h and <240,000 Btu/h	2.45	2.34
	≥240,000 Btu/h and <760,000 Btu/h	2.35	2.24
Glycol-Cooled	<65,000 Btu/h	2.50	2.39
	≥65,000 Btu/h and <240,000 Btu/h	2.15	2.04
	≥240,000 Btu/h and <760,000 Btu/h	2.10	1.99
Glycol-Cooled with Fluid Economizer	<65,000 Btu/h	2.45	2.34
	≥65,000 Btu/h and <240,000 Btu/h	2.10	1.99
	≥240,000 Btu/h and <760,000 Btu/h	2.05	1.94

(2) Each computer room air conditioner manufactured on or after May 28, 2024 must meet the applicable minimum energy efficiency standard level(s) set forth in tables 13 and 14 to this paragraph (e)(2).

TABLE 13 TO § 431.97(e)(2)—UPDATED MINIMUM EFFICIENCY STANDARDS FOR FLOOR-MOUNTED COMPUTER ROOM AIR CONDITIONERS

Equipment type	Downflow and upflow ducted			Upflow non-ducted and horizontal flow		
	Net sensible cooling capacity	Minimum NSenCOP efficiency		Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Downflow	Upflow ducted		Upflow non-ducted	Horizontal flow
Air-Cooled	<80,000 Btu/h	2.70	2.67	<65,000 Btu/h	2.16	2.65
	≥80,000 Btu/h and <295,000 Btu/h.	2.58	2.55	≥65,000 Btu/h and <240,000 Btu/h.	2.04	2.55
	≥295,000 Btu/h and <930,000 Btu/h.	2.36	2.33	≥240,000 Btu/h and <760,000 Btu/h.	1.89	2.47
Air-Cooled with Fluid Economizer.	<80,000 Btu/h	2.70	2.67	<65,000 Btu/h	2.09	2.65

TABLE 13 TO § 431.97(e)(2)—UPDATED MINIMUM EFFICIENCY STANDARDS FOR FLOOR-MOUNTED COMPUTER ROOM AIR CONDITIONERS—Continued

Equipment type	Downflow and upflow ducted			Upflow non-ducted and horizontal flow		
	Net sensible cooling capacity	Minimum NSenCOP efficiency		Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Downflow	Upflow ducted		Upflow non-ducted	Horizontal flow
	≥80,000 Btu/h and <295,000 Btu/h.	2.58	2.55	≥65,000 Btu/h and <240,000 Btu/h.	1.99	2.55
	≥295,000 Btu/h and <930,000 Btu/h.	2.36	2.33	≥240,000 Btu/h and <760,000 Btu/h.	1.81	2.47
Water-Cooled	<80,000 Btu/h	2.82	2.79	<65,000 Btu/h	2.43	2.79
	≥80,000 Btu/h and <295,000 Btu/h.	2.73	2.70	≥65,000 Btu/h and <240,000 Btu/h.	2.32	2.68
	≥295,000 Btu/h and <930,000 Btu/h.	2.67	2.64	≥240,000 Btu/h and <760,000 Btu/h.	2.20	2.60
Water-Cooled with Fluid Economizer.	<80,000 Btu/h	2.77	2.74	<65,000 Btu/h	2.35	2.71
	≥80,000 Btu/h and <295,000 Btu/h.	2.68	2.65	≥65,000 Btu/h and <240,000 Btu/h.	2.24	2.60
	≥295,000 Btu/h and <930,000 Btu/h.	2.61	2.58	≥240,000 Btu/h and <760,000 Btu/h.	2.12	2.54
Glycol-Cooled	<80,000 Btu/h	2.56	2.53	<65,000 Btu/h	2.08	2.48
	≥80,000 Btu/h and <295,000 Btu/h.	2.24	2.21	≥65,000 Btu/h and <240,000 Btu/h.	1.90	2.18
	≥295,000 Btu/h and <930,000 Btu/h.	2.21	2.18	≥240,000 Btu/h and <760,000 Btu/h.	1.81	2.18
Glycol-Cooled with Fluid Economizer.	<80,000 Btu/h	2.51	2.48	<65,000 Btu/h	2.00	2.44
	≥80,000 Btu/h and <295,000 Btu/h.	2.19	2.16	≥65,000 Btu/h and <240,000 Btu/h.	1.82	2.10
	≥295,000 Btu/h and <930,000 Btu/h.	2.15	2.12	≥240,000 Btu/h and <760,000 Btu/h.	1.73	2.10

TABLE 14 TO § 431.97(e)(2)—MINIMUM EFFICIENCY STANDARDS FOR CEILING-MOUNTED COMPUTER ROOM AIR CONDITIONERS

Equipment type	Net sensible cooling capacity	Minimum NSenCOP efficiency	
		Ducted	Non-ducted
Air-Cooled with Free Air Discharge Condenser	<29,000 Btu/h	2.05	2.08
	≥29,000 Btu/h and <65,000 Btu/h	2.02	2.05
	≥65,000 Btu/h and <760,000 Btu/h	1.92	1.94
Air-Cooled with Free Air Discharge Condenser and Fluid Economizer.	<29,000 Btu/h	2.01	2.04
	≥29,000 Btu/h and <65,000 Btu/h	1.97	2
	≥65,000 Btu/h and <760,000 Btu/h	1.87	1.89
Air-Cooled with Ducted Condenser	<29,000 Btu/h	1.86	1.89
	≥29,000 Btu/h and <65,000 Btu/h	1.83	1.86
	≥65,000 Btu/h and <760,000 Btu/h	1.73	1.75
Air-Cooled with Fluid Economizer and Ducted Condenser.	<29,000 Btu/h	1.82	1.85
	≥29,000 Btu/h and <65,000 Btu/h	1.78	1.81
	≥65,000 Btu/h and <760,000 Btu/h	1.68	1.7
Water-Cooled	<29,000 Btu/h	2.38	2.41
	≥29,000 Btu/h and <65,000 Btu/h	2.28	2.31
	≥65,000 Btu/h and <760,000 Btu/h	2.18	2.2
Water-Cooled with Fluid Economizer	<29,000 Btu/h	2.33	2.36
	≥29,000 Btu/h and <65,000 Btu/h	2.23	2.26
	≥65,000 Btu/h and <760,000 Btu/h	2.13	2.16
Glycol-Cooled	<29,000 Btu/h	1.97	2
	≥29,000 Btu/h and <65,000 Btu/h	1.93	1.98
	≥65,000 Btu/h and <760,000 Btu/h	1.78	1.81
Glycol-Cooled with Fluid Economizer	<29,000 Btu/h	1.92	1.95
	≥29,000 Btu/h and <65,000 Btu/h	1.88	1.93
	≥65,000 Btu/h and <760,000 Btu/h	1.73	1.76

(f) * * *

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Table 16 to § 497.31(f)(2)—Updated Minimum Efficiency Standards for Variable Refrigerant Flow Multi-Split Air Conditioners and Heat Pumps

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(g) * * *

Table 17 to § 497.31(g)—Minimum Efficiency Standards for Direct Expansion-Dedicated Outdoor Air Systems

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Note: The following letter will not appear in the Code of Federal Regulations.

U.S. Department of Justice, Antitrust Division, Jonathan S. Kanter, Assistant Attorney General, Main Justice Building, 950 Pennsylvania Avenue NW, Washington, DC 20530–0001, (202) 514–2401/(202) 616–2645 (Fax).

May 6, 2022

Ami Grace-Tardy, Assistant General Counsel for Litigation, Regulation and Energy Efficiency, U.S. Department of Energy, Washington, DC 20585.

Re: Amended standards for computer room air conditioners (CRACs).

DOE Docket No. EERE–2018–BT–STD–0008

Dear Assistant General Counsel Grace-Tardy: I am responding to your March 7, 2022, letter seeking the views of the Attorney General about the potential impact on competition of the DOE's proposed amended standards for computer room air conditioners (CRACs).

The Attorney General must determine the impact, if any, of any lessening of competition likely to result from a proposed standard. (42 U.S.C. 6295(o)(2)(B)(i)(V); 42 U.S.C. 313(a)(6)(B)(ii)(V); 42 U.S.C. 6316(a)). The Attorney General's responsibility for responding to requests from other departments about the effect of a program on competition has been delegated to the Assistant Attorney General for the Antitrust Division in 28 CFR 0.40(g).

In conducting its analysis, the Antitrust Division examines whether a proposed standard may lessen competition, for example, by substantially limiting consumer choice or increasing industry concentration. A lessening of competition could result in higher prices to manufacturers and consumers.

We have reviewed the proposed standards contained in the Notice of Proposed Rulemaking (87 FR 12,802, Mar. 7, 2022). We have also reviewed information presented at the public meeting held via webinar on Wednesday, April 13, 2022.

While industry participants may still be evaluating the impact of the new standards, the Division has not identified any issues to date that suggest the standards are likely to lessen competition.

Sincerely,

Jonathan S. Kanter

[FR Doc. 2023–10859 Filed 6–1–23; 8:45 am]

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