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AUTHORITY: 42 U.S.C. 7401 *et seq.*

SOURCE: 36 FR 24877, Dec. 23, 1971, unless otherwise noted.

Subpart A—General Provisions

§ 60.1 Applicability.

(a) Except as provided in subparts B and C, the provisions of this part apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

(b) Any new or revised standard of performance promulgated pursuant to section 111(b) of the Act shall apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of such new or revised standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.

(c) In addition to complying with the provisions of this part, the owner or operator of an affected facility may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to Title V of the Clean Air Act (Act) as amended November 15, 1990 (42 U.S.C. 7661). For more information about obtaining an operating permit see part 70 of this chapter.

(d) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* (1) This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia (''site'').

(2) Except for compliance with 40 CFR 60.49b(u), the site shall have the option of either complying directly with the requirements of this part, or reducing the site-wide emissions caps in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the site-wide emissions caps in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this part.

(3) Notwithstanding the provisions of paragraph (d)(2) of this section, for any provisions of this part except for Subpart Kb, the owner/operator of the site shall comply with the applicable provisions of this part if the Administrator determines that compliance with the provisions of this part is necessary for achieving the objectives of the regulation and the Administrator notifies the site in accordance with the provisions of the permit issued pursuant to 40 CFR 52.2454.

[40 FR 53346, Nov. 17, 1975, as amended at 55 FR 51382, Dec. 13, 1990; 59 FR 12427, Mar. 16, 1994; 62 FR 52641, Oct. 8, 1997]

§ 60.2 Definitions.

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 7401 *et seq.*)

Administrator means the Administrator of the Environmental Protection Agency or his authorized representative.

Affected facility means, with reference to a stationary source, any apparatus to which a standard is applicable.

Alternative method means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for his determination of compliance.

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter or a Federal permit program established in this chapter pursuant to Title V of the Act (42 U.S.C. 7661).

Capital expenditure means an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable ''annual asset guideline repair allowance percentage'' specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the existing facility's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any ''excluded additions'' as defined in IRS Publication 534, as would be done for tax purposes.

Clean coal technology demonstration project means a project using funds appropriated under the heading 'Department of Energy-Clean Coal Technology', up to a total amount of $2,500,000,000 for commercial demonstrations of clean coal technology, or similar projects funded through appropriations for the Environmental Protection Agency.

Commenced means, with respect to the definition of *new source* in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

Construction means fabrication, erection, or installation of an affected facility.

Continuous monitoring system means the total equipment, required under the emission monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Electric utility steam generating unit means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

Equivalent method means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

Excess Emissions and Monitoring Systems Performance Report is a report that must be submitted periodically by a source in order to provide data on its compliance with stated emission limits and operating parameters, and on the performance of its monitoring systems.

Existing facility means, with reference to a stationary source, any apparatus of the type for which a standard is promulgated in this part, and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type.

Isokinetic sampling means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sample point.

Issuance of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a Title V permit occurs immediately after the EPA takes final action on the final permit.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Modification means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

Monitoring device means the total equipment, required under the monitoring of operations sections in applicable subparts, used to measure and record (if applicable) process parameters.

Nitrogen oxides means all oxides of nitrogen except nitrous oxide, as measured by test methods set forth in this part.

One-hour period means any 60-minute period commencing on the hour.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Owner or operator means any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source of which an affected facility is a part.

Part 70 permit means any permit issued, renewed, or revised pursuant to part 70 of this chapter.

Particulate matter means any finely divided solid or liquid material, other than uncombined water, as measured by the reference methods specified under each applicable subpart, or an equivalent or alternative method.

Permit program means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in this chapter.

Permitting authority means:

(1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter; or

(2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

Proportional sampling means sampling at a rate that produces a constant ratio of sampling rate to stack gas flow rate.

Reactivation of a very clean coal-fired electric utility steam generating unit means any physical change or change in the method of operation associated with the commencement of commercial operations by a coal-fired utility unit after a period of discontinued operation where the unit:

(1) Has not been in operation for the two-year period prior to the enactment of the Clean Air Act Amendments of 1990, and the emissions from such unit continue to be carried in the permitting authority's emissions inventory at the time of enactment;

(2) Was equipped prior to shut-down with a continuous system of emissions control that achieves a removal efficiency for sulfur dioxide of no less than 85 percent and a removal efficiency for particulates of no less than 98 percent;

(3) Is equipped with low-NO_x burners prior to the time of commencement of operations following reactivation; and

(4) Is otherwise in compliance with the requirements of the Clean Air Act.

Reference method means any method of sampling and analyzing for an air pollutant as specified in the applicable subpart.

Repowering means replacement of an existing coal-fired boiler with one of the following clean coal technologies: atmospheric or pressurized fluidized bed combustion, integrated gasification combined cycle, magnetohydrodynamics, direct and indirect coal-fired turbines, integrated gasification fuel cells, or as determined by the Administrator, in consultation with the Secretary of Energy, a derivative of one or more of these technologies, and any other technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of November 15, 1990. Repowering shall also include any oil and/or gas-fired unit which has been awarded clean coal technology demonstration funding as of January 1, 1991, by the Department of Energy.

Run means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Shutdown means the cessation of operation of an affected facility for any purpose.

Six-minute period means any one of the 10 equal parts of a one-hour period.

Standard means a standard of performance proposed or promulgated under this part.

Standard conditions means a temperature of 293 K (68F) and a pressure of 101.3 kilopascals (29.92 in Hg).

Startup means the setting in operation of an affected facility for any purpose.

State means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement: (1) The provisions of this part; and/or (2) the permit program established under part 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

Volatile Organic Compound means any organic compound which participates in atmospheric photochemical reactions; or which is measured by a reference method, an equivalent method, an alternative method, or which is determined by procedures specified under any subpart.

[44 FR 55173, Sept. 25, 1979, as amended at 45 FR 5617, Jan. 23, 1980; 45 FR 85415, Dec. 24, 1980; 54 FR 6662, Feb. 14, 1989; 55 FR 51382, Dec. 13, 1990; 57 FR 32338, July 21, 1992; 59 FR 12427, Mar. 16, 1994]

§ 60.3 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) System International (SI) units of measure:

A—ampere
g—gram
Hz—hertz
J—joule
K—degree Kelvin
kg—kilogram
m—meter
m^3—cubic meter
mg—milligram—10^{-3} gram
mm—millimeter—10^{-3} meter
Mg—megagram—10^6 gram
mol—mole
N—newton
ng—nanogram—10^{-9} gram
nm—nanometer—10^{-9} meter
Pa—pascal
s—second
V—volt
W—watt
Ω—ohm
μ g—microgram—10^{-6} gram

(b) Other units of measure:

Btu—British thermal unit
°C—degree Celsius (centigrade)
cal—calorie
cfm—cubic feet per minute
cu ft—cubic feet
dcf—dry cubic feet
dcm—dry cubic meter
dscf—dry cubic feet at standard conditions
dscm—dry cubic meter at standard conditions
eq—equivalent
°F—degree Fahrenheit
ft—feet
gal—gallon
gr—grain
g-eq—gram equivalent
hr—hour
in—inch
k—1,000
l—liter
lpm—liter per minute
lb—pound
meq—milliequivalent
min—minute
ml—milliliter
mol. wt.—molecular weight
ppb—parts per billion
ppm—parts per million
psia—pounds per square inch absolute
psig—pounds per square inch gage
°R—degree Rankine
scf—cubic feet at standard conditions
scfh—cubic feet per hour at standard conditions
scm—cubic meter at standard conditions
sec—second
sq ft—square feet
std—at standard conditions

(c) Chemical nomenclature:

CdS—cadmium sulfide
CO—carbon monoxide
CO_2—carbon dioxide
HCl—hydrochloric acid
Hg—mercury
H_2O—water
H_2S—hydrogen sulfide
H_2SO_4—sulfuric acid
N_2—nitrogen
NO—nitric oxide
NO_2—nitrogen dioxide
NO_x—nitrogen oxides
O_2—oxygen
SO_2—sulfur dioxide
SO_3—sulfur trioxide
SO_x—sulfur oxides

(d) Miscellaneous:

A.S.T.M.—American Society for Testing and Materials

[42 FR 37000, July 19, 1977; 42 FR 38178, July 27, 1977]

§ 60.4 Address.

(a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the appropriate Regional Office of the U.S. Environmental Protection Agency to the attention of the Director of the Division indicated in the following list of EPA Regional Offices.

Region I (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island,

Vermont), Director, Air Management Division, U.S. Environmental Protection Agency, John F. Kennedy Federal Building, Boston, MA 02203.
Region II (New Jersey, New York, Puerto Rico, Virgin Islands), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Federal Office Building, 26 Federal Plaza (Foley Square), New York, NY 10278.
Region III (Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, Curtis Building, Sixth and Walnut Streets, Philadelphia, PA 19106.
Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 345 Courtland Street, NE., Atlanta, GA 30365.
Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin), Director, Air and Radiation Division, U.S. Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, IL 60604–3590.
Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas); Director; Air, Pesticides, and Toxics Division; U.S. Environmental Protection Agency, 1445 Ross Avenue, Dallas, TX 75202.
Region VII (Iowa, Kansas, Missouri, Nebraska), Director, Air and Toxics Division, U.S. Environmental Protection Agency, 726 Minnesota Avenue, Kansas City, KS 66101.
Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming) Assistant Regional Administrator, Office of Enforcement, Compliance and Environmental Justice, 999 18th Street, Suite 300, Denver, CO 80202–2466.
Region IX (American Samoa, Arizona, California, Guam, Hawaii, Nevada, Northern Mariana Islands), Director, Air Division, U.S. Environmental Protection Agency, 75 Hawthorne Street, San Francisco, CA 94105.
Region X (Alaska, Oregon, Idaho, Washington), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 1200 Sixth Avenue, Seattle, WA 98101.

(b) Section 111(c) directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards of performance for new stationary sources located in such State. All information required to be submitted to EPA under paragraph (a) of this section, must also be submitted to the appropriate State Agency of any State to which this authority has been delegated (provided, that each specific delegation may except sources from a certain Federal or State reporting requirement). The appropriate mailing address for those States whose delegation request has been approved is as follows:

(A) [Reserved]

(B) State of Alabama, Air Pollution Control Division, Air Pollution Control Commission, 645 S. McDonough Street, Montgomery, AL 36104.

(C) State of Alaska, Department of Environmental Conservation, Pouch O, Juneau, AK 99811.

(D) Arizona:

Arizona Department of Environmental Quality, Office of Air Quality, P.O. Box 600, Phoenix, AZ 85001–0600.
Maricopa County Air Pollution Control, 2406 S. 24th Street, Suite E–214, Phoenix, AZ 85034.
Pima County Department of Environmental Quality, 130 West Congress Street, 3rd Floor, Tucson, AZ 85701–1317.
Pinal County Air Quality Control District, Building F, 31 North Pinal Street, Florence, AZ 85232.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(E) State of Arkansas: Chief, Division of Air Pollution Control, Arkansas Department of Pollution Control and Ecology, 8001 National Drive, P.O. Box 9583, Little Rock, AR 72209.

(F) California:

Amador County Air Pollution Control District, 500 Argonaut Lane, Jackson, CA 95642.
Antelope Valley Air Pollution Control District, 43301 Division Street, Suite 206, P.O. Box 4409, Lancaster, CA 93539–4409.
Bay Area Air Quality Management District, 939 Ellis Street, San Francisco, CA 94109.
Butte County Air Pollution Control District, 2525 Dominic Drive, Suite J, Chico, CA 95928–7184.
Calaveras County Air Pollution Control District, 891 Mountain Ranch Rd., San Andreas, CA 95249.
Colusa County Air Pollution Control District, 100 Sunrise Blvd., Suite F, Colusa, CA 95932–3246.
El Dorado County Air Pollution Control District, 2850 Fairlane Court, Bldg. C, Placerville, CA 95667–4100.
Feather River Air Quality Management District, 938 14th Street, Marysville, CA 95901–4149.
Glenn County Air Pollution Control District, 720 N. Colusa Street, P.O. Box 351, Willows, CA 95988–0351.
Great Basin Unified Air Pollution Control District, 157 Short Street, Suite 6, Bishop, CA 93514–3537.

Imperial County Air Pollution Control District, 150 South Ninth Street, El Centro, CA 92243–2801.

Kern County Air Pollution Control District (Southeast Desert), 2700 M. Street, Suite 302, Bakersfield, CA 93301–2370.

Lake County Air Quality Management District, 885 Lakeport Blvd., Lakeport, CA 95453–5405.

Lassen County Air Pollution Control District, 175 Russell Avenue, Susanville, CA 96130–4215.

Mariposa County Air Pollution Control District, P.O. Box 5, Mariposa, CA 95338.

Mendocino County Air Pollution Control District, 306 E. Gobbi Street, Ukiah, CA 95482–5511.

Modoc County Air Pollution Control District, 202 W. 4th Street, Alturas, CA 96101–3915.

Mojave Desert Air Quality Management District, 14306 Part Avenue, Victorville, CA 92392–2310.

Monterey Bay Unified Air Pollution Control District, 24580 Silver Cloud Ct., Monterey, CA 93940–6536.

North Coast Unified Air Pollution Control District, 2300 Myrtle Avenue, Eureka, CA 95501–3327.

Northern Sierra Air Quality Management District, 200 Litton Drive, P.O. Box 2509, Grass Valley, CA 95945–2509.

Northern Sonoma County Air Pollution Control District, 150 Matheson Street, Healdsburg, CA 95448–4908.

Placer County Air Pollution Control District, DeWitt Center, 11464 ''B'' Avenue, Auburn, CA 95603–2603.

Sacramento Metropolitan Air Quality Management District, 777 12th Street, Third Floor, Sacramento, CA 95814–1908.

San Diego County Air Pollution Control District, 9150 Chesapeake Drive, San Diego, CA 92123–1096.

San Joaquin Valley Unified Air Pollution Control District, 1999 Tuolumne Street, 1990 E. Gettysburg, Fresno, CA 93726.

San Luis Obispo County Air Pollution Control District, 3433 Roberto Court, San Luis Obispo, CA 93401–7126.

Santa Barbara County Air Pollution Control District, 26 Castilian Drive, B–23, Goleta, CA 93117–3027.

Shasta County Air Quality Management District, 1855 Placer Street, Suite 101, Redding, CA 96001–1759.

Siskiyou County Air Pollution Control District, 525 So. Foothill Drive, Yreka, CA 96097–3036.

South Coast Air Quality Management District, 21865 E. Copley Drive, Diamond Bar, CA 91765–4182.

Tehama County Air Pollution Control District, P.O. Box 38 (1750 Walnut Street), Red Bluff, CA 96080–0038.

Tuolumne County Air Pollution Control District, 2 South Green Street, Sonora, CA 95370–4618.

Ventura County Air Pollution Control District, 669 County Square Drive, Ventura, CA 93003–5417.

Yolo-Solano Air Quality Management District, 1947 Galileo Ct., Suite 103, Davis, CA 95616–4882.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(G) State of Colorado, Department of Public Health and Environment, 4300 Cherry Creek Drive South, Denver, CO 80222–1530.

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(H) State of Connecticut, Bureau of Air Management, Department of Environmental Protection, State Office Building, 165 Capitol Avenue, Hartford, CT 06106.

(I) State of Delaware, Delaware Department of Natural Resources and Environmental Control, 89 Kings Highway, P.O. Box 1401, Dover, DE 19901

(J) District of Columbia, Department of Consumer and Regulatory Affairs, 5000 Overlook Avenue SW., Washington DC 20032.

(K) Bureau of Air Quality Management, Department of Environmental Regulation, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, FL 32301.

(L) State of Georgia, Environmental Protection Division, Department of Natural Resources, 270 Washington Street, SW., Atlanta, GA 30334.

(M) Hawaii:

Hawaii State Agency, Clean Air Branch, 919 Ala Moana Blvd., 3rd Floor, Post Office Box 3378, Honolulu, HI 96814.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(N) State of Idaho, Department of Health and Welfare, Statehouse, Boise, ID 83701.

(O) State of Illinois, Bureau of Air, Division of Air Pollution Control, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, IL 62794–9276.

(P) State of Indiana, Indiana Department of Environmental Management, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206–6015.

(Q) State of Iowa: Iowa Department of Natural Resources, Environmental Protection Division, Henry A. Wallace Building, 900 East Grand, Des Moines, IO 50319.

(R) State of Kansas: Kansas Department of Health and Environment, Bureau of Air Quality and Radiation Control, Forbes Field, Topeka, KS 66620.

(S) Division of Air Pollution Control, Department for Natural Resources and Environmental Protection, U.S. 127, Frankfort, KY 40601.

(T) State of Louisiana: Program Administrator, Air Quality Division, Louisiana Department of Environmental Quality, P.O. Box 44096, Baton Rouge, LA 70804.

(U) State of Maine, Bureau of Air Quality Control, Department of Environmental Protection, State House, Station No. 17, Augusta, ME 04333.

(V) State of Maryland: Bureau of Air Quality and Noise Control, Maryland State Department of Health and Mental Hygiene, 201 West Preston Street, Baltimore, MD 21201.

(W) Commonwealth of Massachusetts, Division of Air Quality Control, Department of Environmental Protection, One Winter Street, 7th floor, Boston, MA 02108.

(X) State of Michigan, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909.

(Y) Minnesota Pollution Control Agency, Division of Air Quality, 520 Lafayette Road, St. Paul, MN 55155.

(Z) Bureau of Pollution Control, Department of Natural Resources, P.O. Box 10385, Jackson, MS 39209.

(AA) State of Missouri: Missouri Department of Natural Resources, Division of Environmental Quality, P.O. Box 176, Jefferson City, MO 65102.

(BB) State of Montana, Department of Environmental Quality, 1520 E. 6th Ave., PO Box 200901, Helena, MT 59620–0901.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(CC) State of Nebraska, Nebraska Department of Environmental Control, P.O. Box 94877, State House Station, Lincoln, NE 68509.

Lincoln-Lancaster County Health Department, Division of Environmental Health, 2200 St. Marys Avenue, Lincoln, NE 68502

(DD) Nevada:

Nevada State Agency, Air Pollution Control, Bureau of Air Quality/Division of Environmental Protection, 333 West Nye Lane, Carson City, NV 89710.

Clark County Department of Air Quality Management, 500 S. Grand Central Parkway, First floor, Las Vegas, NV 89155–1776.

Washoe County Air Pollution Control, Washoe County District Air Quality Management, P.O. Box 11130, 1001 E. Ninth Street, Reno, NV 89520.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(EE) State of New Hampshire, Air Resources Division, Department of Environmental Services, 64 North Main Street, Caller Box 2033, Concord, NH 03302–2033.

(FF) State of New Jersey: New Jersey Department of Environmental Protection, Division of Environmental Quality, Enforcement Element, John Fitch Plaza, CN–027, Trenton, NJ 08625.

(1) The following table lists the specific source and pollutant categories that have been delegated to the states in Region II. The (X) symbol is used to indicate each category that has been delegated.

	Subpart	State			
		New Jersey	New York	Puerto Rico	Virgin Islands
D	Fossil-Fuel Fired Steam Generators for Which Construction Commenced After August 17, 1971 (Steam Generators and Lignite Fired Steam Generators).	X	X	X	X
Da	Electric Utility Steam Generating Units for Which Construction Commenced After September 18, 1978.	X		X	
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
H	Sulfuric Acid Plants	X	X	X	X
I	Asphalt Concrete Plants	X	X	X	X
J	Petroleum Refineries—(All Categories)	X	X	X	X
K	Storage Vessels for Petroleum Liquids Constructed After June 11, 1973, and prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids Constructed After May 18, 1978.	X	X	X	
L	Secondary Lead Smelters	X	X	X	X

	Subpart	State			
		New Jersey	New York	Puerto Rico	Virgin Islands
M	Secondary Brass and Bronze Ingot Production Plants	X	X	X	X
N	Iron and Steel Plants	X	X	X	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants.	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate	X	X	X	X
Y	Coal Preparation Plants	X	X	X	X
Z	Ferroally Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces	X	X	X	X
AAa	Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in Steel Plants.	X	X	X	
BB	Kraft Pulp Mills	X	X	X	
CC	Glass Manufacturing Plants	X	X	X	
DD	Grain Elevators	X	X	X	
EE	Surface Coating of Metal Furniture	X	X	X	
GG	Stationary Gas Turbines	X	X	X	
HH	Lime Plants	X	X	X	
KK	Lead Acid Battery Manufacturing Plants	X	X		
LL	Metallic Mineral Processing Plants	X	X	X	
MM	Automobile and Light-Duty Truck Surface Coating Operations	X	X		
NN	Phosphate Rock Plants	X	X		
PP	Ammonium Sulfate Manufacturing Plants	X	X		
QQ	Graphic Art Industry Publication Rotogravure Printing	X	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations.	X	X	X	
SS	Industrial Surface Coating: Large Appliances	X	X	X	
TT	Metal Coil Surface Coating	X	X	X	
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	
VV	Equipment Leaks of Volatile Organic Compounds in Synthetic Organic Chemical Manufacturing Industry.	X		X	
WW	Beverage Can Surface Coating Industry	X	X	X	
XX	Bulk Gasoline Terminals	X	X	X	
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	
GGG	Equipment Leaks of VOC in Petroleum Refineries	X		X	
HHH	Synthetic Fiber Production Facilities	X		X	
JJJ	Petroleum Dry Clearners	X	X	X	
KKK	Equipment Leaks of VOC from Onshore Natural Gas Processing Plants.				
LLL	Onshore Natural Gas Processing Plants; SO_2 Emissions		X		
OOO	Nonmetallic Mineral Processing Plants		X	X	
PPP	Wool Fiberglass Insulation Manufacturing Plants		X	X	

(GG) State of New Mexico: Director, New Mexico Environmental Improvement Division, Health and Environment Department, 1190 St. Francis Drive, Santa Fe, NM 87503.

(i) The City of Albuquerque and Bernalillo County: Director, The Albuquerque Environmental Health Department, The City of Albuquerque, P.O. Box 1293, Albuquerque, NM 87103.

(HH) New York: New York State Department of Environmental Conservation, 50 Wolf Road Albany, New York 12233, attention: Division of Air Resources.

(II) North Carolina Environmental Management Commission, Department of Natural and Economic Resources, Division of Environmental Management, P.O. Box 27687, Raleigh, NC 27611. Attention: Air Quality Section.

(JJ) State of North Dakota, Division of Air Quality, North Dakota Department of Health, P.O. Box 5520, Bismarck, ND 58506–5520.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(KK) State of Ohio:

(i) Medina, Summit and Portage Counties; Director, Akron Regional Air Quality Management District, 177 South Broadway, Akron, OH 44308.

(ii) Stark County: Air Pollution Control Division, 420 Market Avenue North, Canton, Ohio 44702–3335.

(iii) Butler, Clermont, Hamilton, and Warren Counties: Air Program Manager, Hamilton County Department of Environmental Services, 1632 Central Parkway, Cincinnati, Ohio 45210.

(iv) Cuyahoga County: Commissioner, Department of Public Health & Welfare, Division of Air Pollution Control, 1925 Saint Clair, Cleveland, Ohio 44114.

(v) Belmont, Carroll, Columbiana, Harrison, Jefferson, and Monroe Counties: Director, North Ohio Valley Air Authority (NOVAA), 814 Adams Street, Steubenville, OH 43952.

(vi) Clark, Darke, Greene, Miami, Montgomery, and Preble Counties: Director, Regional Air Pollution Control Agency (RAPCA) 451 West Third Street, Dayton, Ohio 45402.

(vii) Lucas County and the City of Rossford (in Wood County): Director, Toledo Environmental Services Agency, 26 Main Street, Toledo, OH 43605.

(viii) Adams, Brown, Lawrence, and Scioto Counties; Engineer-Director, Air Division, Portsmouth City Health Department, 740 Second Street, Portsmouth, OH 45662.

(ix) Allen, Ashland, Auglaize, Crawford, Defiance, Erie, Fulton, Hancock, Hardin, Henry, Huron, Marion, Mercer, Ottawa, Paulding, Putnam, Richland, Sandusky, Seneca, Van Wert, Williams, Wood (except City of Rossford), and Wyandot Counties: Ohio Environmental Protection Agency, Northwest District Office, Air Pollution Control, 347 Dunbridge Rd., Bowling Green, Ohio 43402.

(x) Ashtabula, Holmes, Lorain, and Wayne Counties: Ohio Environmental Protection Agency, Northeast District Office, Air Pollution Unit, 2110 East Aurora Road, Twinsburg, OH 44087.

(xi) Athens, Coshocton, Gallia, Guernsey, Hocking, Jackson, Meigs, Morgan, Muskingum, Noble, Perry, Pike, Ross, Tuscarawas, Vinton, and Washington Counties: Ohio Environmental Protection Agency, Southeast District Office, Air Pollution Unit, 2195 Front Street, Logan, OH 43138.

(xii) Champaign, Clinton, Highland, Logan, and Shelby Counties: Ohio Environmental Protection Agency, Southwest District Office, Air Pollution Unit, 401 East Fifth Street, Dayton, Ohio 45402–2911.

(xiii) Delaware, Fairfield, Fayette, Franklin, Knox, Licking, Madison, Morrow, Pickaway, and Union Counties: Ohio Environmental Protection Agency, Central District Office, Air Pollution Control, 3232 Alum Creek Drive, Columbus, Ohio, 43207–3417.

(xiv) Geauga and Lake Counties: Lake County General Health District, Air Pollution Control, 105 Main Street, Painesville, OH 44077.

(xv) Mahoning and Trumbull Counties: Mahoning-Trumbull Air Pollution Control Agency, 9 West Front Street, Youngstown, OH 44503.

(LL) State of Oklahoma, Oklahoma State Department of Health, Air Quality Service, P.O. Box 53551, Oklahoma City, OK 73152.

(i) Oklahoma City and County: Director, Oklahoma City-County Health Department, 921 Northeast 23rd Street, Oklahoma City, OK 73105.

(ii) Tulsa County: Tulsa City-County Health Department, 4616 East Fifteenth Street, Tulsa, OK 74112.

(MM) State of Oregon, Department of Environmental Quality, Yeon Building, 522 S.W. Fifth, Portland, OR 97204.

(i)–(viii) [Reserved]

(ix) Lane Regional Air Pollution Authority, 225 North Fifth, Suite 501, Springfield, OR 97477.

(NN) (a) City of Philadelphia: Philadelphia Department of Public Health, Air Management Services, 500 S. Broad Street, Philadelphia, PA 19146.

(b) Commonwealth of Pennsylvania: Department of Environmental Resources, Post Office Box 2063, Harrisburg, PA 17120.

(c) Allegheny County: Allegheny County Health Department, Bureau of Air Pollution Control, 301 Thirty-ninth Street, Pittsburgh, PA 15201.

(OO) State of Rhode Island, Division of Air and Hazardous Materials, Department of Environmental Management, 291 Promenade Street, Providence, RI 02908.

(PP) State of South Carolina, Office of Environmental Quality Control, Department of Health and Environmental Control, 2600 Bull Street, Columbia, SC 29201.

(QQ) State of South Dakota, Air Quality Program, Department of Environment and Natural Resources, Joe Foss Building, 523 East Capitol, Pierre, SD 57501–3181.

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragragh (c) of this section.

(RR) Division of Air Pollution Control, Tennessee Department of Public Health, 256 Capitol Hill Building, Nashville, TN 37219.

Knox County Department of Air Pollution, City/County Building, Room L222, 400 Main Avenue, Knoxville, TN 37902.

Air Pollution Control Bureau, Metropolitan Health Department, 311 23rd Avenue North, Nashville, TN 37203.

(SS) State of Texas, Texas Air Control Board, 6330 Highway 290 East, Austin, TX 78723.

(TT) State of Utah, Division of Air Quality, Department of Environmental Quality, P.O. Box 144820, Salt Lake City, UT 84114–4820.

NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(UU) State of Vermont, Air Pollution Control Division, Agency of Natural Resources, Building 3 South, 103 South Main Street, Waterbury, VT 05676.

(VV) Commonwealth of Virginia, Virginia State Air Pollution Control Board, Room 1106, Ninth Street Office Building, Richmond, VA 23219.

(WW)(i) Washington: Washington Department of Ecology, Post Office Box 47600, Olympia, WA 98504.

(ii) Benton-Franklin Counties Clean Air Authority (BFCCAA), 650 George Washington Way, Richland, WA 99352.

(iii) Northwest Air Pollution Authority (NWAPA), 302 Pine Street, #207, Mt. Vernon, WA 98273–3852.

(iv) Olympic Air Pollution Control Authority (OAPCA), 909 Sleater-Kinney Rd. SE - Suite 1, Lacey, WA 98503.

(v) Puget Sound Air Pollution Control Authority (PSAPCA), 110 Union Street, Suite 500, Seattle, WA 98101.

(vi) Southwest Air Pollution Control Authority (SWAPCA), 1308 N.E. 134th Street, Suite D, Vancouver, WA 98685–2747.

(vii) Spokane County Air Pollution Control Authority (SCAPCA), West 1101 College Avenue, Health Building, Room 403, Spokane, WA 99201.

(viii) [Reserved]

(ix) The following is a table indicating the delegation status of the New Source Performance Standards for the State of Washington.

DELEGATION OF AUTHORITY—NEW SOURCE PERFORMANCE STANDARDS STATE OF WASHINGTON

Subpart	Description	WDOE[1]	BFCCAA[2]	NWAPCA[3]	OAPCA[4]	PSAPCA[5]	SWAPCA[6]	SCAPCA[7]
A	General Provisions	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
D	Fossil-Fuel-Fired Steam Generators	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Da	Electric Utility Steam Generating Units	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Db	Industrial-Commercial-Institutional Steam Generating Units	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Dc	Small Industrial-Commercial-Institutional Steam Generating Units	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
E	Incinerators	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Ea	Municipal Waste Combustion	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
F	Portland Cement Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
G	Nitric Acid Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
H	Sulfuric Acid Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
I	Asphalt Concrete Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
J	Petroleum Refineries	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
K	Petroleum Liquid Storage Vessels 6/11/73–5/19/78	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Ka	Petroleum Liquid Storage Vessels After 5/18/78–7/23/84	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Kb	Volatile Organic Liquid Storage Vessels After 7/23/84	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
L	Secondary Lead Smelters	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
M	Brass & Bronze Ingot Production Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
N	Iron & Steel Plants: BOPF Particulate	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Na	Iron & Steel Plants: BOPF, Hot Metal & Skimming Stations	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
O	Sewage Treatment Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
P	Primary Copper Smelters	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Q	Primary Zinc Smelters	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
R	Primary Lead Smelters	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
S	Primary Aluminum Reduction Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
T	Wet Process Phosphoric Acid Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
U	Superphosphoric Acid Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
V	Diammonium Phosphate Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
W	Triple Superphosphate Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
X	Granular Triple Superphosphate Storage Facilities	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Y	Coal Preparation Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
Z	Ferroalloy Production Facilities	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
AA	Steel Plant Electric Arc Furnaces 10/21/74–8/17/83	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
AAa	Steel Plant Electric Arc Furnaces & Argon-Oxygen Decarburization Vessels after 8/7/83.	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
BB	Kraft Pulp Mills	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
CC	Glass Manufacturing Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
DD	Grain Elevators	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
EE	Surface Coating of Metal Furniture	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
GG	Stationary Gas Turbines	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
HH	Lime Manufacturing Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
KK	Lead-Acid Battery Manufacturing Plant	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
LL	Metallic Mineral Processing Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
MM	Automobile & Light Duty Truck Surface Coating Operations	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
NN	Phosphate Rock Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
PP	Ammonium Sulfate Manufacture	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
QQ	Graphic Arts Industry: Publication Rotogravure Printing	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93

RR	Pressure Sensitive Tape & Label Surface Coating Operations	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SS	Industrial Surface Coating: Large Appliances	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
TT	Metal Coil Surface Coating	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
UU	Asphalt Processing & Asphalt Roofing Manufacturer	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
VV	SOCMI Equipment Leaks (VOC)	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
WW	Beverage Can Surface Coating Operations	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
XX	Bulk Gasoline Terminals	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
AAA	Residential Wood Heaters	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
BBB	Rubber Tire Manufacturing	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
DDD	Polymer Manufacturing Industry (VOC)	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
FFF	Flexible Vinyl and Urethane Coating and Printing	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
GGG	Equipment Leaks of VOC in Petroleum Refineries	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
HHH	Synthetic Fiber Production Facilities	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
III	VOC Emissions from SOCMI Air Oxidation Unit Processes	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
JJJ	Petroleum Dry Cleaners	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
KKK	VOC Emissions from Onshore Natural Gas Production	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
LLL	Onshore Natural Gas Production (SO2)	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
NNN	VOC Emissions from SOCMI Distillation Facilities	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
OOO	Nonmetallic Mineral Processing Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
PPP	Wool Fiberglass Insulation Manufacturing Plants	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
QQQ	VOC Emissions from Petroleum Refinery Wastewater Systems	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
SSS	Magnetic Tape Coating Facilities	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
TTT	Surface Coating of Plastic Parts for Business Machines	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
UUU	Calciners & Dryers In Mineral Industries	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93
VVV	Polymeric Coating of Support Substrates Facilities	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93	01/01/93

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[1] WDOE—State of Washington Department of Ecology.
[2] BFCCAA—Benton Franklin Counties Clean Air Authority.
[3] NWAPCA—Northwest Air Pollution Control Authority.
[4] OAPCA—Olympic Air Pollution Control Authority.
[5] PSAPCA—Puget Sound Air Pollution Control Agency.
[6] SWAPCA—Southwest Air Pollution Control Authority.
[7] SCAPCA—Spokane County Air Pollution Control Authority.

(XX) State of West Virginia: Air Pollution Control Commission, 1558 Washington Street East, Charleston, WV 25311.

(YY) Wisconsin—Wisconsin Department of Natural Resources, P.O. Box 7921, Madison, WI 53707.

(ZZ) State of Wyoming, Department of Environmental Quality, Air Quality Division, Herschler Building, 122 West 25th Street, Cheyenne, WY 82002.

EDITORIAL NOTE: For a table listing Region VIII's NSPS delegation status, see paragraph (c) of this section.

(AAA) Territory of Guam: Guam Environmental Protection Agency, Post Office Box 2999, Agana, Guam 96910.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(BBB) Commonwealth of Puerto Rico: Commonwealth of Puerto Rico Environmental Quality Board, P.O. Box 11488, Santurce, PR 00910, Attention: Air Quality Area Director (see table under § 60.4(b)(FF)(1)).

(CCC) U.S. Virgin Islands: U.S. Virgin Islands Department of Conservation and Cultural Affairs, P.O. Box 578, Charlotte Amalie, St. Thomas, VI 00801.

(DDD) American Samoa Environmental Protection Agency, Pago Pago, American Samoa 96799.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(EEE) Commonwealth of the Northern Mariana Islands, Division of Environmental Quality, P.O. Box 1304, Saipan, MP 96950.

NOTE: For tables listing the delegation status of agencies in Region IX, see paragraph (d) of this section.

(c) The following is a table indicating the delegation status of New Source Performance Standards for Region VIII.

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS

[(NSPS) for Region VIII]

Subpart	CO	MT	ND	SD[1]	UT[1]	WY
A—General Provisions	(*)	(*)	(*)	(*)	(*)	(*)
D—Fossil Fuel Fired Steam Generators	(*)	(*)	(*)	(*)	(*)	(*)
Da—Electric Utility Steam Generators	(*)	(*)	(*)	(*)	(*)	(*)
Db—Industrial-Commercial—Institutional Steam Generators	(*)	(*)	(*)	(*)	(*)	(*)
Dc—Industrial-Commercial—Institutional Steam Generators	(*)	(*)	(*)	(*)	(*)	
E—Incinerators	(*)	(*)	(*)	(*)	(*)	(*)
Ea—Municipal Waste Combustors	(*)	(*)	(*)	(*)	(*)	(*)
Eb—Large Municipal Waste Combustors				(*)		(*)
Ec-Hospital/Medical/Infectious Waste Incinerators	(*)	(*)	(*)	(*)		
F—Portland Cement Plants	(*)	(*)	(*)	(*)	(*)	(*)
G—Nitric Acid Plants	(*)	(*)	(*)		(*)	(*)
H—Sulfuric Acid Plants	(*)	(*)	(*)		(*)	(*)
I—Asphalt Concrete Plants	(*)	(*)	(*)	(*)	(*)	(*)
J—Petroleum Refineries	(*)	(*)	(*)		(*)	(*)
K—Petroleum Storage Vessels (after 6/11/73 & prior to 5/19/78)	(*)	(*)	(*)	(*)	(*)	(*)
Ka—Petroleum Storage Vessels (after 5/18/78 & prior to 7/23/84)	(*)	(*)	(*)	(*)	(*)	(*)
Kb—Petroleum Storage Vessels (after 7/23/84)	(*)	(*)	(*)	(*)	(*)	(*)
L—Secondary Lead Smelters	(*)	(*)	(*)		(*)	(*)
M—Secondary Brass & Bronze Production Plants	(*)	(*)	(*)		(*)	(*)
N—Primary Emissions from Basic Oxygen Process Furnaces (after 6/11/73)	(*)	(*)	(*)		(*)	(*)
Na—Secondary Emissions from Basic Oxygen Process Furnaces (after 1/20/83)	(*)	(*)	(*)		(*)	(*)
O—Sewage Treatment Plants	(*)	(*)	(*)	(*)	(*)	(*)
P—Primary Copper Smelters	(*)	(*)	(*)		(*)	(*)
Q—Primary Zinc Smelters	(*)	(*)	(*)		(*)	(*)
R—Primary Lead Smelters	(*)	(*)	(*)		(*)	(*)
S—Primary Aluminum Reduction Plants	(*)	(*)	(*)		(*)	(*)
T—Phosphate Fertilizer Industry: Wet Process Phosphoric Plants	(*)	(*)	(*)		(*)	(*)
U—Phosphate Fertilizer Industry: Superphosphoric Acid Plants	(*)	(*)	(*)		(*)	(*)
V—Phosphate Fertilizer Industry: Diammonium Phosphate Plants	(*)	(*)	(*)		(*)	(*)

DELEGATION STATUS OF NEW SOURCE PERFORMANCE STANDARDS—Continued

[(NSPS) for Region VIII]

Subpart	CO	MT	ND	SD[1]	UT[1]	WY
W—Phosphate Fertilizer Industry: Triple Superphosphate Plants	(*)	(*)	(*)		(*)	(*)
X—Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	(*)	(*)	(*)		(*)	(*)
Y—Coal Preparation Plants	(*)	(*)	(*)	(*)	(*)	(*)
Z—Ferroalloy Production Facilities	(*)	(*)	(*)		(*)	(*)
AA—Steel Plants: Electric Arc Furnaces (10/21/74–8/17/83)	(*)	(*)	(*)		(*)	(*)
AAa—Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels (after 8/7/83)	(*)	(*)	(*)		(*)	(*)
BB—Kraft Pulp Mills	(*)	(*)	(*)		(*)	(*)
CC—Glass Manufacturing Plants	(*)	(*)	(*)		(*)	(*)
DD—Grain Elevator	(*)	(*)	(*)	(*)	(*)	(*)
EE—Surface Coating of Metal Furniture	(*)	(*)	(*)		(*)	(*)
GG—Stationary Gas Turbines	(*)	(*)	(*)	(*)	(*)	(*)
HH—Lime Manufacturing Plants	(*)	(*)	(*)	(*)	(*)	(*)
KK—Lead-Acid Battery Manufacturing Plants	(*)	(*)	(*)		(*)	(*)
LL—Metallic Mineral Processing Plants	(*)	(*)	(*)	(*)	(*)	(*)
MM—Automobile & Light Duty Truck Surface Coating Operations	(*)	(*)	(*)		(*)	(*)
NN—Phosphate Rock Plants	(*)	(*)	(*)		(*)	(*)
PP—Ammonium Sulfate Manufacturing	(*)	(*)	(*)		(*)	(*)
QQ—Graphic Arts Industry: Publication Rotogravure Printing	(*)	(*)	(*)	(*)	(*)	(*)
RR—Pressure Sensitive Tape & Label Surface Coating	(*)	(*)	(*)	(*)	(*)	(*)
SS—Industrial Surface Coating: Large Applications	(*)	(*)	(*)		(*)	(*)
TT—Metal Coil Surface Coating	(*)	(*)	(*)		(*)	(*)
UU—Asphalt Processing & Asphalt Roofing Manufacture	(*)	(*)	(*)		(*)	(*)
VV—Synthetic Organic Chemicals Manufacturing: Equipment Leaks of VOC	(*)	(*)	(*)	(*)	(*)	(*)
WW—Beverage Can Surface Coating Industry	(*)	(*)	(*)		(*)	(*)
XX—Bulk Gasoline Terminals	(*)	(*)	(*)	(*)	(*)	(*)
AAA—Residential Wood Heaters	(*)	(*)	(*)	(*)	(*)	(*)
BBB—Rubber Tires	(*)	(*)	(*)		(*)	(*)
DDD—VOC Emissions from Polymer Manufacturing Industry	(*)	(*)	(*)		(*)	(*)
FFF—Flexible Vinyl & Urethane Coating & Printing	(*)	(*)	(*)		(*)	(*)
GGG—Equipment Leaks of VOC in Petroleum Refineries	(*)	(*)	(*)		(*)	(*)
HHH—Synthetic Fiber Production	(*)	(*)	(*)		(*)	(*)
III—VOC Emissions from the Synthetic Organic Chemical Manufacturing Industry Air Oxidation Unit Processes		(*)	(*)		(*)	(*)
JJJ—Petroleum Dry Cleaners	(*)	(*)	(*)	(*)	(*)	(*)
KKK—Equipment Leaks of VOC from Onshore Natural Gas Processing Plants	(*)	(*)	(*)		(*)	(*)
LLL—Onshore Natural Gas Processing: SO_2 Emissions	(*)	(*)	(*)		(*)	(*)
NNN—VOC Emissions from the Synthetic Organic Chemical Manufacturing Industry Distillation Operations	(*)	(*)	(*)	(*)	(*)	(*)
OOO—Nonmetallic Mineral Processing Plants	(*)	(*)	(*)	(*)	(*)	(*)
PPP—Wool Fiberglass Insulation Manufacturing Plants	(*)	(*)	(*)		(*)	(*)
QQQ—VOC Emissions from Petroleum Refinery Wastewater Systems	(*)	(*)	(*)		(*)	(*)
RRR—VOC Emissions from Synthetic Organic Chemistry Manufacturing Industry (SOCMI) Reactor Processes	(*)	(*)	(*)	(*)	(*)	(*)
SSS—Magnetic Tape Industry	(*)	(*)	(*)	(*)	(*)	(*)
TTT—Plastic Parts for Business Machine Coatings	(*)	(*)	(*)		(*)	(*)
UUU—Calciners and Dryers in Mineral Industries	(*)	(*)	(*)	(*)	(*)	(*)
VVV—Polymeric Coating of Supporting Substrates	(*)	(*)	(*)		(*)	(*)
WWW—Municipal Solid Waste Landfills	(*)	(*)	(*)	(*)	(*)	(*)

(*) Indicates approval of state regulation.

[1] Indicates approval of New Source Performance Standards as part of the State Implementation Plan (SIP).

(d) The following tables list the specific Part 60 standards that have been delegated unchanged to the air pollution control agencies in Region IX. The (X) symbol is used to indicate each standard that has been delegated. The following provisions of this subpart are not delegated: §§ 60.4(b), 60.8(b), 60.9, 60.11(b), 60.11(e), 60.13(a), 60.13(d)(2), 60.13(g), 60.13(i).

(1) *Arizona.* The following table identifies delegations as of June 15, 2001:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR ARIZONA

	Subpart	Air pollution control agency			
		Arizona DEQ	Maricopa County	Pima County	Pinal County
A	General Provisions	X	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X	X	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	X	X	X
Dc	Small Industrial Steam Generating Units	X	X	X	X
E	Incinerators	X	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X	X	....	X
Eb	Municipal Waste Combustors Constructed After September 20, 1994.	X	....	....	....
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	....	....	....	....
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
H	Sulfuric Acid Plant	X	X	X	X
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	X	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X	X	X	X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X	X	....	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	X	X	X	X
Q	Primary Zinc Smelters	X	X	X	X
R	Primary Lead Smelters	X	X	X	X
S	Primary Aluminum Reduction Plants	X	X	X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X	X	X	X
Y	Coal Preparation Plants	X	X	X	X
Z	Ferroalloy Production Facilities	X	X	X	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X	X	X	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X	X	X	X
BB	Kraft pulp Mills	X	X	X	X
CC	Glass Manufacturing Plants	X	X	X	X
DD	Grain Elevators	X	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X	X
FF	(Reserved)	....	....	....	....
GG	Stationary Gas Turbines	X	X	X	X
HH	Lime Manufacturing Plants	X	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	X	X	X	X
LL	Metallic Mineral Processing Plants	X	X	X	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR ARIZONA—Continued

	Subpart	Air pollution control agency			
		Arizona DEQ	Maricopa County	Pima County	Pinal County
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X	X
NN	Phosphate Rock Plants	X	X	X	X
PP	Ammonium Sulfate Manufacture	X	X	X	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X	X	X	X
SS	Industrial Surface Coating: Large Appliances	X	X	X	X
TT	Metal Coil Surface Coating	X	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	X	X	X	X
WW	Beverage Can Surface Coating Industry	X	X	X	X
XX	Bulk Gasoline Terminals	X	X	X	X
AAA	New Residential Wool Heaters	X	X	X	X
BBB	Rubber Tire Manufacturing Industry	X	X	X	X
CCC	(Reserved)	....	....	....	....
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	X	X	X	X
EEE	(Reserved)	....	....	....	....
FFF	Flexible Vinyl and Urethane Coating and Printing	X	X	X	X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X	X	X	X
HHH	Synthetic Fiber Production Facilities	X	X	X	X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	X	X	X	X
JJJ	Petroleum Dry Cleaners	X	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	X	X	X	X
LLL	Onshore Natural Gas Processing: SO2 Emissions	X	X	....	X
MMM	(Reserved)	X	X	X	X
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X	X	X	X
OOO	Nonmetallic Mineral Processing Plants	X	X	X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X	X	X	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	X	X	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	....	....	....	....
SSS	Magnetic Tape Coating Facilities	X	X	X	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	X	X	X	X
UUU	Calciners and Dryers in Mineral Industries	X	....	....	....
VVV	Polymeric Coating of Supporting Substrates Facilities	X	X	X	X
WWW	Municipal Solid Waste Landfills	X	....	....	....

(2) *California.* The following tables identify delegations for each of the local air pollution control agencies of California.

(i) Delegations for Amador County Air Pollution Control District, Antelope Valley Air Pollution Control District, Bay Area Air Quality Management District, and Butte County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR AMADOR COUNTY APCD, ANTELOPE VALLEY APCD, BAY AREA AQMD, AND BUTTE COUNTY AQMD

	Subpart	Air pollution control agency			
		Amador County APCD	Antelope Valley APCD	Bay Area AQMD	Butte County APCD
A	General Provisions	....	....	X	....
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	....	....	X	....
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	....	....	X	....
Db	Industrial-Commercial-Institutional Steam Generating Units	....	....	X	....
Dc	Small Industrial Steam Generating Units	....	....	X	....
E	Incinerators	....	....	X	....

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR AMADOR COUNTY APCD, ANTELOPE VALLEY APCD, BAY AREA AQMD, AND BUTTE COUNTY AQMD—Continued

	Subpart	Air pollution control agency			
		Amador County APCD	Antelope Valley APCD	Bay Area AQMD	Butte County APCD
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.			X	
Eb	Municipal Waste Combustors Constructed After September 20, 1994.				
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.				
F	Portland Cement Plants			X	
G	Nitric Acid Plants			X	
H	Sulfuric Acid Plants			X	
I	Hot Mix Asphalt Facilities			X	
J	Petroleum Refineries			X	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.			X	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.			X	
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.			X	
L	Secondary Lead Smelters			X	
M	Secondary Brass and Bronze Production Plants			X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.			X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.			X	
O	Sewage Treatment Plants			X	
P	Primary Copper Smelters			X	
Q	Primary Zinc Smelters			X	
R	Primary Lead Smelters			X	
S	Primary Aluminum Reduction Plants			X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants.				
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants			X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants			X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants			X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.			X	
Y	Coal Preparation Plants			X	
Z	Ferroalloy Production Facilities			X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.			X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.			X	
BB	Kraft pulp Mills			X	
CC	Glass Manufacturing Plants			X	
DD	Grain Elevators			X	
EE	Surface Coating of Metal Furniture			X	
FF	(Reserved)				
GG	Stationary Gas Turbines			X	
HH	Lime Manufacturing Plants			X	
KK	Lead-Acid Battery Manufacturing Plants			X	
LL	Metallic Mineral Processing Plants			X	
MM	Automobile and Light Duty Trucks Surface Coating Operations			X	
NN	Phosphate Rock Plants			X	
PP	Ammonium Sulfate Manufacture			X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing			X	
RR	Pressure Sensitive Tape and Label Surface Coating Operations			X	
SS	Industrial Surface Coating: Large Appliances			X	
TT	Metal Coil Surface Coating			X	
UU	Asphalt Processing and Asphalt Roofing Manufacture			X	
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.			X	
WW	Beverage Can Surface Coating Industry			X	
XX	Bulk Gasoline Terminals				
AAA	New Residential Wool Heaters			X	
BBB	Rubber Tire Manufacturing Industry			X	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR AMADOR COUNTY APCD, ANTELOPE VALLEY APCD, BAY AREA AQMD, AND BUTTE COUNTY AQMD—Continued

	Subpart	Air pollution control agency			
		Amador County APCD	Antelope Valley APCD	Bay Area AQMD	Butte County APCD
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.			X	
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing			X	
GGG	Equipment Leaks of VOC in Petroleum Refineries			X	
HHH	Synthetic Fiber Production Facilities			X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.				
JJJ	Petroleum Dry Cleaners			X	
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.			X	
LLL	Onshore Natural Gas Processing: SO2 Emissions				
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.			X	
OOO	Nonmetallic Mineral Processing Plants			X	
PPP	Wool Fiberglass Insulation Manufacturing Plants			X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems			X	
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.				
SSS	Magnetic Tape Coating Facilities			X	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.			X	
UUU	Calciners and Dryers in Mineral Industries			X	
VVV	Polymeric Coating of Supporting Substrates Facilities			X	
WWW	Municipal Solid Waste Landfills				

(ii) [Reserved]

(iii) Delegations for Glenn County Air Pollution Control District, Great Basin Unified Air Pollution Control District, Imperial County Air Pollution Control District, and Kern County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR GLENN COUNTY APCD, GREAT BASIN UNIFIED APCD, IMPERIAL COUNTY APCD, AND KERN COUNTY APCD

	Subpart	Air pollution control agency			
		Glenn County APCD	Great Basin Unified APCD	Imperial County APCD	Kern County APCD
A	General Provisions		X		X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.		X		X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.		X		X
Db	Industrial-Commercial-Institutional Steam Generating Units		X		X
Dc	Small Industrial Steam Generating Units		X		X
E	Incinerators		X		X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.		X		
Eb	Municipal Waste Combustors Constructed After September 20, 1994.				
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.				
F	Portland Cement Plants		X		X
G	Nitric Acid Plants		X		X
H	Sulfuric Acid Plants		X		
I	Hot Mix Asphalt Facilities		X		X
J	Petroleum Refineries		X		X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR GLENN COUNTY APCD, GREAT BASIN UNIFIED APCD, IMPERIAL COUNTY APCD, AND KERN COUNTY APCD—Continued

	Subpart	Air pollution control agency			
		Glenn County APCD	Great Basin Unified APCD	Imperial County APCD	Kern County APCD
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.		X		X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.		X		X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.		X		X
L	Secondary Lead Smelters		X		X
M	Secondary Brass and Bronze Production Plants		X		X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.		X		X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.		X		X
O	Sewage Treatment Plants		X		X
P	Primary Copper Smelters		X		X
Q	Primary Zinc Smelters		X		X
R	Primary Lead Smelters		X		X
S	Primary Aluminum Reduction Plants		X		X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants		X		X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants		X		X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants		X		X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants		X		X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.		X		X
Y	Coal Preparation Plants		X		X
Z	Ferroalloy Production Facilities		X		X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.		X		X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.		X		X
BB	Kraft pulp Mills		X		X
CC	Glass Manufacturing Plants		X		X
DD	Grain Elevators		X		X
EE	Surface Coating of Metal Furniture		X		X
FF	(Reserved)				
GG	Stationary Gas Turbines		X		X
HH	Lime Manufacturing Plants		X		X
KK	Lead-Acid Battery Manufacturing Plants		X		X
LL	Metallic Mineral Processing Plants		X		X
MM	Automobile and Light Duty Trucks Surface Coating Operations		X		X
NN	Phosphate Rock Plants		X		X
PP	Ammonium Sulfate Manufacture		X		X
QQ	Graphic Arts Industry: Publication Rotogravure Printing		X		X
RR	Pressure Sensitive Tape and Label Surface Coating Operations		X		X
SS	Industrial Surface Coating: Large Appliances		X		X
TT	Metal Coil Surface Coating		X		X
UU	Asphalt Processing and Asphalt Roofing Manufacture		X		X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.		X		X
WW	Beverage Can Surface Coating Industry		X		X
XX	Bulk Gasoline Terminals				
AAA	New Residential Wool Heaters		X		X
BBB	Rubber Tire Manufacturing Industry		X		X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.		X		X
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing		X		X
GGG	Equipment Leaks of VOC in Petroleum Refineries		X		X
HHH	Synthetic Fiber Production Facilities		X		X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.		X		X
JJJ	Petroleum Dry Cleaners		X		X

Delegation Status for New Source Performance Standards for Glenn County APCD, Great Basin Unified APCD, Imperial County APCD, and Kern County APCD—Continued

	Subpart	Air pollution control agency			
		Glenn County APCD	Great Basin Unified APCD	Imperial County APCD	Kern County APCD
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	....	X	....	X
LLL	Onshore Natural Gas Processing: SO2 Emissions	....	....	....	X
MMM	(Reserved)	....	....	....	....
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	....	X	....	X
OOO	Nonmetallic Mineral Processing Plants	....	X	....	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	....	X	....	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	....	X	....	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	....	....	....	X
SSS	Magnetic Tape Coating Facilities	....	X	....	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	....	X	....	X
UUU	Calciners and Dryers in Mineral Industries	....	X	....	X
VVV	Polymeric Coating of Supporting Substrates Facilities	....	X	....	X
WWW	Municipal Solid Waste Landfills	....	....	....	X

(iv) Delegations for Lake County Air Quality Management District, Lassen County Air Pollution Control District, Mariposa County Air Pollution Control District, and Mendocino County Air Pollution Control District are shown in the following table:

Delegation Status for New Source Performance Standards for Lake County Air Quality Management District, Lassen County Air Pollution Control District, Mariposa County Air Pollution Control District, and Mendocino County Air Pollution Control District

	Subpart	Air pollution control agency			
		Lake County AQMD	Lassen County APCD	Mariposa County AQMD	Mendocino County AQMD
A	General Provisions	X	....	....	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	....	....	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X	....	....	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	....	....	....
Dc	Small Industrial Steam Generating Units	X	....	....	X
E	Incinerators	X	....	....	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X	....	....	X
Eb	Municipal Waste Combustors Constructed After September 20, 1994.	....	....	....	....
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	....	....	....	....
F	Portland Cement Plants	X	....	....	X
G	Nitric Acid Plants	X	....	....	X
H	Sulfuric Acid Plants	X	....	....	X
I	Hot Mix Asphalt Facilities	X	....	....	X
J	Petroleum Refineries	X	....	....	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	....	....	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	....	....	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	....	....	X
L	Secondary Lead Smelters	X	....	....	X
M	Secondary Brass and Bronze Production Plants	X	....	....	X

Delegation Status for New Source Performance Standards for Lake County Air Quality Management District, Lassen County Air Pollution Control District, Mariposa County Air Pollution Control District, and Mendocino County Air Pollution Control District—Continued

	Subpart	Air pollution control agency			
		Lake County AQMD	Lassen County APCD	Mariposa County AQMD	Mendocino County AQMD
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X			X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X			X
O	Sewage Treatment Plants	X			X
P	Primary Copper Smelters	X			X
Q	Primary Zinc Smelters	X			X
R	Primary Lead Smelters	X			X
S	Primary Aluminum Reduction Plants	X			X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X			X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X			X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X			X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X			X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X			X
Y	Coal Preparation Plants	X			X
Z	Ferroalloy Production Facilities	X			X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X			X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X			X
BB	Kraft Pulp Mills	X			X
CC	Glass Manufacturing Plants	X			X
DD	Grain Elevators	X			X
EE	Surface Coating of Metal Furniture	X			X
FF	(Reserved)				
GG	Stationary Gas Turbines	X			X
HH	Lime Manufacturing Plants	X			X
KK	Lead-Acid Battery Manufacturing Plants	X			X
LL	Metallic Mineral Processing Plants	X			X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X			X
NN	Phosphate Rock Plants	X			X
PP	Ammonium Sulfate Manufacture	X			X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X			X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X			X
SS	Industrial Surface Coating: Large Appliances	X			X
TT	Metal Coil Surface Coating	X			X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X			X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	X			X
WW	Beverage Can Surface Coating Industry	X			X
XX	Bulk Gasoline Terminals				
AAA	New Residential Wool Heaters	X			X
BBB	Rubber Tire Manufacturing Industry	X			X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	X			X
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing	X			X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X			X
HHH	Synthetic Fiber Production Facilities	X			X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	X			X
JJJ	Petroleum Dry Cleaners	X			X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	X			X
LLL	Onshore Natural Gas Processing: SO2 Emissions	X			X
MMM	(Reserve)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI)Distillation Operations.	X			X
OOO	Nonmetallic Mineral Processing Plants	X			X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X			X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR LAKE COUNTY AIR QUALITY MANAGEMENT DISTRICT, LASSEN COUNTY AIR POLLUTION CONTROL DISTRICT, MARIPOSA COUNTY AIR POLLUTION CONTROL DISTRICT, AND MENDOCINO COUNTY AIR POLLUTION CONTROL DISTRICT—Continued

	Subpart	Air pollution control agency			
		Lake County AQMD	Lassen County APCD	Mariposa County AQMD	Mendocino County AQMD
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X	....	....	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	X	....	....	....
SSS	Magnetic Tape Coating Facilities	X	....	....	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.				
UUU	Calciners and Dryers in Mineral Industries	X	....	....	X
VVV	Polymeric Coating of Supporting Substrates Facilities	X	....	....	X
WWW	Municipal Solid Waste Landfills	X	....	....	....

(v) Delegations for Modoc County Air Pollution Control District, Mojave Desert Air Quality Management District, Monterey Bay Unified Air Pollution Control District, and North Coast Unified Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR MODOC COUNTY AIR POLLUTION CONTROL DISTRICT, MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT, MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT, AND NORTH COAST UNIFIED AIR POLLUTION CONTROL DISTRICT

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
A	General Provisions	X	....	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X	....	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X	....	X	X
Dc	Small Industrial Steam Generating Units	....	....	X	....
E	Incinerators	X	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	....	....	....	....
Eb	Municipal Waste Combustors Constructed After September 20, 1994.	....	....	....	....
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	....	....	....	....
F	Portland Cement Plants	X	X	X	X
G	Nitric Acid Plants	X	X	X	X
H	Sulfuric Acid Plants	X	X	X	X
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	....	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	....	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X	X	X	X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X	....	X	X
O	Sewage Treatment Plants	X	X	X	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR MODOC COUNTY AIR POLLUTION CONTROL DISTRICT, MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT, MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT, AND NORTH COAST UNIFIED AIR POLLUTION CONTROL DISTRICT—Continued

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
P	Primary Copper Smelters	X		X	X
Q	Primary Zinc Smelters	X		X	X
R	Primary Lead Smelters	X		X	X
S	Primary Aluminum Reduction Plants	X		X	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X	X	X	X
Y	Coal Preparation Plants	X	X	X	X
Z	Ferroalloy Production Facilities	X		X	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X	X	X	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X		X	X
BB	Kraft pulp Mills	X		X	X
CC	Glass Manufacturing Plants	X		X	X
DD	Grain Elevators	X		X	X
EE	Surface Coating of Metal Furniture	X		X	X
FF	(Reserved)				
GG	Stationary Gas Turbines	X		X	X
HH	Lime Manufacturing Plants	X		X	X
KK	Lead-Acid Battery Manufacturing Plants	X		X	X
LL	Metallic Mineral Processing Plants	X		X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X		X	X
NN	Phosphate Rock Plants	X		X	X
PP	Ammonium Sulfate Manufacture	X		X	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X		X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X		X	X
SS	Industrial Surface Coating: Large Appliances	X		X	X
TT	Metal Coil Surface Coating	X		X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X		X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	X		X	X
WW	Beverage Can Surface Coating Industry	X		X	X
XX	Bulk Gasoline Terminals				
AAA	New Residential Wool Heaters	X		X	X
BBB	Rubber Tire Manufacturing Industry	X		X	X
CCC	(Reserved)				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer manufacturing Industry.	X		X	
EEE	(Reserved)				
FFF	Flexible Vinyl and Urethane Coating and Printing	X		X	X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X		X	X
HHH	Synthetic Fiber Production Facilities	X		X	X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.				
JJJ	Petroleum Dry Cleaners	X		X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	X		X	X
LLL	Onshore Natural Gas Processing: SO2 Emissions	X		X	X
MMM	(Reserved)				
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X		X	
OOO	Nonmetallic Mineral Processing Plants	X		X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X		X	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X		X	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.				
SSS	Magnetic Tape Coating Facilities	X		X	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR MODOC COUNTY AIR POLLUTION CONTROL DISTRICT, MOJAVE DESERT AIR QUALITY MANAGEMENT DISTRICT, MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT, AND NORTH COAST UNIFIED AIR POLLUTION CONTROL DISTRICT—Continued

	Subpart	Air pollution control agency			
		Modoc County APCD	Mojave Desert AQMD	Monterey Bay Unified APCD	North Coast Unified AQMD
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	X		X	X
UUU	Calciners and Dryers in Mineral Industries			X	
VVV	Polymeric Coating of Supporting Substrates Facilities			X	X
WWW	Municipal Solid Waste Landfills				

(vi) Delegations for Northern Sierra Air Quality Management District, Northern Sonoma County Air Pollution Control District, Placer County Air Pollution Control District, and Sacramento Metropolitan Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT, NORTHERN SONOMA COUNTY AIR POLLUTION CONTROL DISTRICT, PLACER COUNTY AIR POLLUTION CONTROL DISTRICT, AND SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

	Subpart	Air pollution control agency			
		Northern Sierra AQMD	Northern Sonoma County APCD	Placer County APCD	Sacramento Metropolitan AQMD
A	General Provisions		X		X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.		X		X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.		X		X
Db	Industrial-Commercial-Institutional Steam Generating Units				X
Dc	Small Industrial Steam Generating Units				X
E	Incinerators		X		X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.				X
Eb	Municipal Waste Combustors Constructed After September 20, 1994.				X
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.				X
F	Portland Cement Plants		X		X
G	Nitric Acid Plants		X		X
H	Sulfuric Acid Plants		X		X
I	Hot Mix Asphalt Facilities		X		X
J	Petroleum Refineries		X		X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.		X		X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.		X		X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.				X
L	Secondary Lead Smelters		X		X
M	Secondary Brass and Bronze Production Plants		X		X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.		X		X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.				X
O	Sewage Treatment Plants		X		X
P	Primary Copper Smelters		X		X
Q	Primary Zinc Smelters		X		X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT, NORTHERN SONOMA COUNTY AIR POLLUTION CONTROL DISTRICT, PLACER COUNTY AIR POLLUTION CONTROL DISTRICT, AND SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT—Continued

	Subpart	Air pollution control agency			
		Northern Sierra AQMD	Northern Sonoma County APCD	Placer County APCD	Sacramento Metropolitan AQMD
R	Primary Lead Smelters	....	X	....	X
S	Primary Aluminum Reduction Plants	....	X	....	X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	....	X	....	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	....	X	....	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	....	X	....	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	....	X	....	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	....	X	....	X
Y	Coal Preparation Plants	....	X	....	X
Z	Ferroalloy Production Facilities	....	X	....	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	....	X	....	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	....	....	....	X
BB	Kraft pulp Mills	....	X	....	X
CC	Glass Manufacturing Plants	....	X	....	X
DD	Grain Elevators	....	X	....	X
EE	Surface Coating of Metal Furniture	....	....	....	X
FF	(Reserved)	....	....	....	....
GG	Stationary Gas Turbines	....	X	....	X
HH	Lime Manufacturing Plants	....	X	....	X
KK	Lead-Acid Battery Manufacturing Plants	....	....	....	X
LL	Metallic Mineral Processing Plants	....	....	....	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	....	X	....	X
NN	Phosphate Rock Plants	....	....	....	X
PP	Ammonium Sulfate Manufacture	....	X	....	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	....	....	....	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	....	....	....	X
SS	Industrial Surface Coating: Large Appliances	....	....	....	X
TT	Metal Coil Surface Coating	....	....	....	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	....	....	....	X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	....	....	....	X
WW	Beverage Can Surface Coating Industry	....	....	....	X
XX	Bulk Gasoline Terminals	....	....	....	....
AAA	New Residential Wool Heaters	....	....	....	X
BBB	Rubber Tire Manufacturing Industry	....	....	....	X
CCC	(Reserved)	....	....	....	....
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	....	....	....	X
EEE	(Reserved)	....	....	....	....
FFF	Flexible Vinyl and Urethane Coating and Printing	....	....	....	X
GGG	Equipment Leaks of VOC in Petroleum Refineries	....	....	....	X
HHH	Synthetic Fiber Production Facilities	....	....	....	X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	....	....	....	X
JJJ	Petroleum Dry Cleaners	....	....	....	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	....	....	....	X
LLL	Onshore Natural Gas Processing: SO2 Emissions	....	....	....	X
MMM	(Reserved)	....	....	....	....
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	....	....	....	X
OOO	Nonmetallic Mineral Processing Plants	....	....	....	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	....	....	....	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	....	....	....	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	....	....	....	X
SSS	Magnetic Tape Coating Facilities	....	....	....	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	....	....	....	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT, NORTHERN SONOMA COUNTY AIR POLLUTION CONTROL DISTRICT, PLACER COUNTY AIR POLLUTION CONTROL DISTRICT, AND SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT—Continued

	Subpart	Air pollution control agency			
		Northern Sierra AQMD	Northern Sonoma County APCD	Placer County APCD	Sacramento Metropolitan AQMD
UUU	Calciners and Dryers in Mineral Industries	....	....	....	X
VVV	Polymeric Coating of Supporting Substrates Facilities	....	....	....	X
WWW	Municipal Solid Waste Landfills	....	....	....	X

(vii) Delegations for San Diego County Air Pollution Control District, San Joaquin Valley Unified Air Pollution Control District, San Luis Obispo County Air Pollution Control District, and Santa Barbara County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, SAN LUIS OBISPO COUNTY AIR POLLUTION CONTROL DISTRICT, AND SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT

	Subpart	Air pollution control agency			
		San Diego County APCD	San Joaquin Valley United APCD	San Luis Obispo County APCD	Santa Barbara County APCD
A	General Provisions	X	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	X	X	X	X
Db	Industrial-Commercial-Institutional Steam Generating Units	....	X	X	X
Dc	Small Industrial Steam Generating Units	X	X	....	X
E	Incinerators	X	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	....	X	X	X
Eb	Municipal Waste Combustors Constructed After September 20, 1994.	....	....	X	....
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	....	....	....	....
F	Portland Cement Plants	....	X	X	X
G	Nitric Acid Plants	....	X	X	X
H	Sulfuric Acid Plants	....	X	X	X
I	Hot Mix Asphalt Facilities	X	X	X	X
J	Petroleum Refineries	X	X	X	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced Ater June 11, 1973, and Prior to May 19, 1978.	X	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X	X	X	X
L	Secondary Lead Smelters	X	X	X	X
M	Secondary Brass and Bronze Production Plants	X	X	X	X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	....	X	X	X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	....	X	X	X
O	Sewage Treatment Plants	X	X	X	X
P	Primary Copper Smelters	....	X	X	X
Q	Primary Zinc Smelters	....	X	X	X
R	Primary Lead Smelters	....	X	X	X
S	Primary Aluminum Reduction Plants	....	X	X	X

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT, SAN JOAQUIN VALLEY UNIFIED AIR POLLUTION CONTROL DISTRICT, SAN LUIS OBISPO COUNTY AIR POLLUTION CONTROL DISTRICT, AND SANTA BARBARA COUNTY AIR POLLUTION CONTROL DISTRICT—Continued

	Subpart	Air pollution control agency			
		San Diego County APCD	San Joaquin Valley United APCD	San Luis Obispo County APCD	Santa Barbara County APCD
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	....	X	X	X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	....	X	X	X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	....	X	X	X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	....	X	X	X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	....	X	X	X
Y	Coal Preparation Plants	....	X	X	X
Z	Ferroalloy Production Facilities	....	X	X	X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	....	X	X	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	....	X	X	X
BB	Kraft pulp Mills	....	X	X	X
CC	Glass Manufacturing Plants	X	X	X	X
DD	Grain Elevators	X	X	X	X
EE	Surface Coating of Metal Furniture	....	X	X	X
FF	(Reserved)	....	....	....	....
GG	Stationary Gas Turbines	X	X	X	X
HH	Lime Manufacturing Plants	....	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	....	X	X	X
LL	Metallic Mineral Processing Plants	....	X	X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	....	X	X	X
NN	Phosphate Rock Plants	....	X	X	X
PP	Ammonium Sulfate Manufacture	....	X	X	X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	....	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	....	X	X	X
SS	Industrial Surface Coating: Large Appliances	....	X	X	X
TT	Metal Coil Surface Coating	....	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	....	X	X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	....	X	X	X
WW	Beverage Can Surface Coating Industry	....	X	X	X
XX	Bulk Gasoline Terminals	....	....	....	....
AAA	New Residential Wool Heaters	....	X	X	X
BBB	Rubber Tire Manufacturing Industry	....	X	X	X
CCC	(Reserved)	....	....	....	....
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	....	X	....	X
EEE	(Reserved)	....	....	....	....
FFF	Flexible Vinyl and Urethane Coating and Printing	....	X	X	X
GGG	Equipment Leaks of VOC in Petroleum Refineries	....	X	X	X
HHH	Synthetic Fiber Production Facilities	....	X	X	X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	....	X	....	X
JJJ	Petroleum Dry Cleaners	....	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	....	X	X	X
LLL	Onshore Natural Gas Processing: SO2 Emissions	....	X	X	X
MMM	(Reserved)	....	....	....	....
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	....	X	....	X
OOO	Nonmetallic Mineral Processing Plants	X	X	X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	....	X	X	X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	....	X	X	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	....	X	X	X
SSS	Magnetic Tape Coating Facilities	....	X	X	X
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	....	X	X	X
UUU	Calciners and Dryers in Mineral Industries	X	X	X	X
VVV	Polymeric Coating of Supporting Substrates Facilities	....	X	X	X
WWW	Municipal Solid Waste Landfills	X	X	X	X

(viii) Delegations for Shasta County Air Quality Management District, Siskiyou County Air Pollution Control District, South Coast Air Quality Management District, and Tehama County Air Pollution Control District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SHASTA COUNTY AIR QUALITY MANAGEMENT DISTRICT, SISKIYOU COUNTY AIR POLLUTION CONTROL DISTRICT, SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, AND TEHAMA COUNTY AIR POLLUTION CONTROL DISTRICT

	Subpart	Air pollution control agency			
		Shasta County AQMD	Siskiyou County APCD	South Coast AQMD	Tehama County APCD
A	General Provisions	X	X	X	
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X		X	
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.			X	
Db	Industrial-Commercial-Institutional Steam Generating Units			X	
Dc	Small Industrial Steam Generating Units			X	
E	Incinerators	X		X	
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.			X	
Eb	Municipal Waste Combustors Constructed After September 20, 1994.			X	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.			X	
F	Portland Cement Plants	X		X	
G	Nitric Acid Plants	X		X	
H	Sulfuric Acid Plants	X		X	
I	Hot Mix Asphalt Facilities	X		X	
J	Petroleum Refineries	X		X	
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X		X	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.			X	
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.			X	
L	Secondary Lead Smelters	X		X	
M	Secondary Brass and Bronze Production Plants	X		X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X		X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.			X	
O	Sewage Treatment Plants	X		X	
P	Primary Copper Smelters	X		X	
Q	Primary Zinc Smelters	X		X	
R	Primary Lead Smelters	X		X	
S	Primary Aluminum Reduction Plants	X		X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X		X	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X		X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X		X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X		X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X		X	
Y	Coal Preparation Plants	X		X	
Z	Ferroalloy Production Facilities	X		X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X		X	
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.			X	
BB	Kraft pulp Mills	X		X	
CC	Glass Manufacturing Plants			X	
DD	Grain Elevators	X		X	
EE	Surface Coating of Metal Furniture			X	
FF	(Reserved)				
GG	Stationary Gas Turbines			X	
HH	Lime Manufacturing Plants	X		X	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR SHASTA COUNTY AIR QUALITY MANAGEMENT DISTRICT, SISKIYOU COUNTY AIR POLLUTION CONTROL DISTRICT, SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, AND TEHAMA COUNTY AIR POLLUTION CONTROL DISTRICT—Continued

	Subpart	Air pollution control agency			
		Shasta County AQMD	Siskiyou County APCD	South Coast AQMD	Tehama County APCD
KK	Lead-Acid Battery Manufacturing Plants	....	....	X	....
LL	Metallic Mineral Processing Plants	....	....	X	....
MM	Automobile and Light Duty Trucks Surface Coating Operations	....	....	X	....
NN	Phosphate Rock Plants	....	....	X	....
PP	Ammonium Sulfate Manufacture	....	....	X	....
QQ	Graphic Arts Industry: Publication Rotogravure Printing	....	....	X	....
RR	Pressure Sensitive Tape and Label Surface Coating Operations	....	....	X	....
SS	Industrial Surface Coating: Large Appliances	....	....	X	....
TT	Metal Coil Surface Coating	....	....	X	....
UU	Asphalt Processing and Asphalt Roofing Manufacture	....	....	X	....
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	....	....	X	....
WW	Beverage Can Surface Coating Industry	....	....	X	....
XX	Bulk Gasoline Terminals	....	....	....	....
AAA	New Residential Wool Heaters	....	X	X	....
BBB	Rubber Tire Manufacturing Industry	....	X	X	....
CCC	(Reserved).				
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.	....	....	X	....
EEE	(Reserved)	....	....	....	....
FFF	Flexible Vinyl and Urethane Coating and Printing	....	....	X	....
GGG	Equipment Leaks of VOC in Petroleum Refineries	....	....	X	....
HHH	Synthetic Fiber Production Facilities	....	....	X	....
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	....	....	X	....
JJJ	Petroleum Dry Cleaners	....	....	X	....
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.	....	....	X	....
LLL	Onshore Natural Gas Processing: SO2 Emissions	....	....	X	....
MMM	(Reserved)	....	....	....	....
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	....	....	X	....
OOO	Nonmetallic Mineral Processing Plants	....	....	X	....
PPP	Wool Fiberglass Insulation Manufacturing Plants	....	....	X	....
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	....	X	X	....
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	....	....	X	....
SSS	Magnetic Tape Coating Facilities	....	X	X	....
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.	....	X	X	....
UUU	Calciners and Dryers in Mineral Industries	....	....	X	....
VVV	Polymeric Coating of Supporting Substrates Facilities	....	....	X	....
WWW	Municipal Solid Waste Landfills	....	....	X	....

(ix) Delegations for Tuolumne County Air Pollution Control District, Ventura County Air Pollution Control District, and Yolo-Solano Air Quality Management District are shown in the following table:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR TUOLUMNE COUNTY AIR POLLUTION CONTROL DISTRICT, VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT, AND YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT

	Subpart	Air pollution control agency		
		Tuolumne County APCD	Ventura County APCD	Yolo-Solano AQMD
A	General Provisions	....	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	....	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	....	X	....

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR TUOLUMNE COUNTY AIR POLLUTION CONTROL DISTRICT, VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT, AND YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT—Continued

	Subpart	Air pollution control agency		
		Tuolumne County APCD	Ventura County APCD	Yolo-Solano AQMD
Db	Industrial-Commercial-Institutional Steam Generating Units		X	X
Dc	Small Industrial Steam Generating Units		X	
E	Incinerators		X	
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.		X	
Eb	Municipal Waste Combustors Constructed After September 20, 1994.			
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.			
F	Portland Cement Plants		X	
G	Nitric Acid Plants		X	
H	Sulfuric Acid Plants		X	
I	Hot Mix Asphalt Facilities		X	X
J	Petroleum Refineries		X	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.		X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.		X	
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.		X	
L	Secondary Lead Smelters		X	
M	Secondary Brass and Bronze Production Plants		X	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.		X	
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.		X	
O	Sewage Treatment Plants		X	
P	Primary Copper Smelters		X	
Q	Primary Zinc Smelters		X	
R	Primary Lead Smelters		X	
S	Primary Aluminum Reduction Plants		X	
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants.		X	
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants		X	
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants		X	
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants		X	
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.		X	
Y	Coal Preparation Plants		X	
Z	Ferroalloy Production Facilities		X	
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.		X	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.		X	
BB	Kraft pulp Mills		X	
CC	Glass Manufacturing Plants		X	
DD	Grain Elevators		X	
EE	Surface Coating of Metal Furniture		X	
FF	(Reserved)			
GG	Stationary Gas Turbines		X	
HH	Lime Manufacturing Plants		X	
KK	Lead-Acid Battery Manufacturing Plants		X	
LL	Metallic Mineral Processing Plants		X	
MM	Automobile and Light Duty Trucks Surface Coating Operations		X	
NN	Phosphate Rock Plants		X	
PP	Ammonium Sulfate Manufacture		X	
QQ	Graphic Arts Industry: Publication Rotogravure Printing		X	
RR	Pressure Sensitive Tape and Label Surface Coating Operations		X	
SS	Industrial Surface Coating: Large Appliances		X	
TT	Metal Coil Surface Coating		X	
UU	Asphalt Processing and Asphalt Roofing Manufacture		X	
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.		X	

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR TUOLUMNE COUNTY AIR POLLUTION CONTROL DISTRICT, VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT, AND YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT—Continued

	Subpart	Air pollution control agency		
		Tuolumne County APCD	Ventura County APCD	Yolo-Solano AQMD
WW	Beverage Can Surface Coating Industry		X	
XX	Bulk Gasoline Terminals			
AAA	New Residential Wool Heaters		X	
BBB	Rubber Tire Manufacturing Industry		X	
CCC	(Reserved)			
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.		X	
EEE	(Reserved)			
FFF	Flexible Vinyl and Urethane Coating and Printing		X	
GGG	Equipment Leaks of VOC in Petroleum Refineries		X	
HHH	Synthetic Fiber Production Facilities		X	
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.		X	
JJJ	Petroleum Dry Cleaners		X	
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.		X	
LLL	Onshore Natural Gas Processing: SO2 Emissions		X	
MMM	(Reserved)			
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.		X	
OOO	Nonmetallic Mineral Processing Plants		X	X
PPP	Wool Fiberglass Insulation Manufacturing Plants		X	
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems		X	
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.		X	
SSS	Magnetic Tape Coating Facilities		X	
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.		X	
UUU	Calciners and Dryers in Mineral Industries		X	
VVV	Polymeric Coating of Supporting Substrates Facilities		X	
WWW	Municipal Solid Waste Landfills		X	X

(3) *Hawaii*. The following table identifies delegations as of June 15, 2001:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR HAWAII

	Subpart	Hawaii
A	General Provisions	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X
Db	Industrial-Commercial-Institutional Steam Generating Units	X
Dc	Small Industrial Steam Generating Units	X
E	Incinerators	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	X
Eb	Municipal Waste Combustors Constructed After September 20, 1994	X
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	
F	Portland Cement Plants	X
G	Nitric Acid Plants	
H	Sulfuric Acid Plants	
I	Hot Mix Asphalt Facilities	X
J	Petroleum Refineries	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X
L	Secondary Lead Smelters	
M	Secondary Brass and Bronze Production Plants	
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	

Delegation Status for New Source Performance Standards for Hawaii—Continued

	Subpart	Hawaii
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	....
O	Sewage Treatment Plants	X
P	Primary Copper Smelters	....
Q	Primary Zinc Smelters	....
R	Primary Lead Smelters	....
S	Primary Aluminum Reduction Plants	....
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	....
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	....
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	....
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	....
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities	....
Y	Coal Preparation Plants	X
Z	Ferroalloy Production Facilities	....
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X
BB	Kraft pulp Mills	....
CC	Glass Manufacturing Plants	....
DD	Grain Elevators	....
EE	Surface Coating of Metal Furniture	....
FF	(Reserved)	....
GG	Stationary Gas Turbines	X
HH	Lime Manufacturing Plants	....
KK	Lead-Acid Battery Manufacturing Plants	....
LL	Metallic Mineral Processing Plants	....
MM	Automobile and Light Duty Trucks Surface Coating Operations	....
NN	Phosphate Rock Plants	....
PP	Ammonium Sulfate Manufacture	....
QQ	Graphic Arts Industry: Publication Rotogravure Printing	....
RR	Pressure Sensitive Tape and Label Surface Coating Operations	....
SS	Industrial Surface Coating: Large Appliances	....
TT	Metal Coil Surface Coating	....
UU	Asphalt Processing and Asphalt Roofing Manufacture	....
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry	X
WW	Beverage Can Surface Coating Industry	X
XX	Bulk Gasoline Terminals	X
AAA	New Residential Wool Heaters	....
BBB	Rubber Tire Manufacturing Industry	....
CCC	(Reserved)	....
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry	....
EEE	(Reserved)	....
FFF	Flexible Vinyl and Urethane Coating and Printing	....
GGG	Equipment Leaks of VOC in Petroleum Refineries	X
HHH	Synthetic Fiber Production Facilities	....
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.	....
JJJ	Petroleum Dry Cleaners	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	....
LLL	Onshore Natural Gas Processing: SO2 Emissions	....
MMM	(Reserved)	....
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.	X
OOO	Nonmetallic Mineral Processing Plants	X
PPP	Wool Fiberglass Insulation Manufacturing Plants	....
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems	X
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.	....
SSS	Magnetic Tape Coating Facilities	....
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines	....
UUU	Calciners and Dryers in Mineral Industries	X
VVV	Polymeric Coating of Supporting Substrates Facilities	X
WWW	Municipal Solid Waste Landfills	....

(4) *Nevada*. The following table identifies delegations as of June 15, 2001:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NEVADA

	Subpart	Air pollution control agency		
		Nevada DEP	Clark County	Washoe County
A	General Provisions	X	X	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971	X	X	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978	X		
Db	Industrial-Commercial-Institutional Steam Generating Units			
Dc	Small Industrial Steam Generating Units			
E	Incinerators	X	X	X
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.			
Eb	Municipal Waste Combustors Constructed After September 20, 1994			
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.			
F	Portland Cement Plants	X	X	X
G	Nitric Acid Plants	X		X
H	Sulfuric Acid Plants	X		X
I	Hot Mix Asphalt Facilities	X	X	X
J	Petroleum Refineries	X		X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X	X	X
Ka	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.	X	X	X
Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984.	X		
L	Secondary Lead Smelters	X	X	X
M	Secondary Brass and Bronze Production Plants	X		X
N	Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973.	X		X
Na	Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983.	X		
O	Sewage Treatment Plants	X	X	X
P	Primary Copper Smelters	X	X	X
Q	Primary Zinc Smelters	X	X	X
R	Primary Lead Smelters	X	X	X
S	Primary Aluminum Reduction Plants	X		X
T	Phosphate Fertilizer Industry: Wet Process Phosphoric Acid Plants	X		X
U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants	X		X
V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants	X		X
W	Phosphate Fertilizer Industry: Triple Superphosphate Plants	X		X
X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities.	X		X
Y	Coal Preparation Plants	X	X	X
Z	Ferroalloy Production Facilities	X		X
AA	Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974 and On or Before August 17, 1983.	X		X
AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 7, 1983.	X		
BB	Kraft pulp Mills	X		X
CC	Glass Manufacturing Plants	X		X
DD	Grain Elevators	X	X	X
EE	Surface Coating of Metal Furniture	X	X	X
FF	(Reserved)			
GG	Stationary Gas Turbines	X	X	X
HH	Lime Manufacturing Plants	X	X	X
KK	Lead-Acid Battery Manufacturing Plants	X	X	X
LL	Metallic Mineral Processing Plants	X	X	X
MM	Automobile and Light Duty Trucks Surface Coating Operations	X	X	X
NN	Phosphate Rock Plants	X	X	X
PP	Ammonium Sulfate Manufacture	X		X
QQ	Graphic Arts Industry: Publication Rotogravure Printing	X	X	X
RR	Pressure Sensitive Tape and Label Surface Coating Operations	X		X
SS	Industrial Surface Coating: Large Appliances	X	X	X
TT	Metal Coil Surface Coating	X	X	X
UU	Asphalt Processing and Asphalt Roofing Manufacture	X	X	X
VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.	X	X	X
WW	Beverage Can Surface Coating Industry	X		X
XX	Bulk Gasoline Terminals	X		X
AAA	New Residential Wool Heaters			
BBB	Rubber Tire Manufacturing Industry			
CCC	(Reserved)			

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR NEVADA—Continued

	Subpart	Air pollution control agency		
		Nevada DEP	Clark County	Washoe County
DDD	Volatile Organic Compounds (VOC) Emissions from the Polymer Manufacturing Industry.			
EEE	(Reserved)			
FFF	Flexible Vinyl and Urethane Coating and Printing	X		X
GGG	Equipment Leaks of VOC in Petroleum Refineries	X		X
HHH	Synthetic Fiber Production Facilities	X		X
III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.			
JJJ	Petroleum Dry Cleaners	X	X	X
KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants	X		
LLL	Onshore Natural Gas Processing: SO2 Emissions	X		
MMM	(Reserved)			
NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.			
OOO	Nonmetallic Mineral Processing Plants	X		X
PPP	Wool Fiberglass Insulation Manufacturing Plants	X		X
QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems			
RRR	Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.			
SSS	Magnetic Tape Coating Facilities			
TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines.			
UUU	Calciners and Dryers in Mineral Industries			
VVV	Polymeric Coating of Supporting Substrates Facilities			
WWW	Municipal Solid Waste Landfills			

(5) Guam. The following table identifies delegations as of June 15, 2001:

DELEGATION STATUS FOR NEW SOURCE PERFORMANCE STANDARDS FOR GUAM

	Subpart	Guam
A	General Provisions	X
D	Fossil-Fuel Fired Steam Generators Constructed After August 17, 1971.	X
Da	Electric Utility Steam Generating Units Constructed After September 18, 1978.	
Db	Industrial-Commercial-Institutional Steam Generating Units.	
Dc	Small Industrial Steam Generating Units	
E	Incinerators	
Ea	Municipal Waste Combustors Constructed After December 20, 1989 and On or Before September 20, 1994.	
Eb	Municipal Waste Combustors Constructed After September 20, 1994.	
Ec	Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996.	
F	Portland Cement Plants	X
G	Nitric Acid Plants	
H	Sulfuric Acid Plants	
I	Hot Mix Asphalt Facilities	X
J	Petroleum Refineries	X
K	Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.	X

[40 FR 18169, Apr. 25, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §60.4 see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 60.5 Determination of construction or modification.

(a) When requested to do so by an owner or operator, the Administrator will make a determination of whether action taken or intended to be taken by such owner or operator constitutes construction (including reconstruction) or modification or the commencement thereof within the meaning of this part.

(b) The Administrator will respond to any request for a determination under paragraph (a) of this section within 30 days of receipt of such request.

[40 FR 58418, Dec. 16, 1975]

§ 60.6 Review of plans.

(a) When requested to do so by an owner or operator, the Administrator will review plans for construction or modification for the purpose of providing technical advice to the owner or operator.

(b)(1) A separate request shall be submitted for each construction or modification project.

(2) Each request shall identify the location of such project, and be accompanied by technical information describing the proposed nature, size, design, and method of operation of each affected facility involved in such project, including information on any equipment to be used for measurement or control of emissions.

(c) Neither a request for plans review nor advice furnished by the Administrator in response to such request shall (1) relieve an owner or operator of legal responsibility for compliance with any provision of this part or of any applicable State or local requirement, or (2) prevent the Administrator from implementing or enforcing any provision of this part or taking any other action authorized by the Act.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 9314, Mar. 8, 1974]

§ 60.7 Notification and record keeping.

(a) Any owner or operator subject to the provisions of this part shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, as follows:

(1) A notification of the date construction (or reconstruction as defined under § 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.

(2) [Reserved]

(3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

(4) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable subpart or in § 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.

(5) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with § 60.13(c). Notification shall be postmarked not less than 30 days prior to such date.

(6) A notification of the anticipated date for conducting the opacity observations required by § 60.11(e)(1) of this part. The notification shall also include, if appropriate, a request for the Administrator to provide a visible emissions reader during a performance test. The notification shall be postmarked not less than 30 days prior to such date.

(7) A notification that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required by § 60.8 in lieu of Method 9 observation data as allowed by § 60.11(e)(5) of this part. This notification shall be postmarked not less than 30 days prior to the date of the performance test.

(b) Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.

(c) Each owner or operator required to install a continuous monitoring device shall submit excess emissions and monitoring systems performance report (excess emissions are defined in applicable subparts) and-or summary report form (see paragraph (d) of this section) to the Administrator semiannually, except when: more frequent reporting is specifically required by an applicable subpart; or the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. All reports shall be postmarked by the 30th day following the end of each six-month period. Written reports of excess emissions shall include the following information:

(1) The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

(2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

(3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

(4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.

(d) The summary report form shall contain the information and be in the format shown in figure 1 unless otherwise specified by the Administrator. One summary report form shall be submitted for each pollutant monitored at each affected facility.

(1) If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in §60.7(c) need not be submitted unless requested by the Administrator.

(2) If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in §60.7(c) shall both be submitted.

FIGURE 1—SUMMARY REPORT—GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE

Pollutant (Circle One—SO_2/NO_X/TRS/H_2S/CO/Opacity)

Reporting period dates: From ________ to ________

Company:

Emission Limitation ____________________

Address:

Monitor Manufacturer and Model No. _____

Date of Latest CMS Certification or Audit __

Process Unit(s) Description:

Total source operating time in reporting period[1] ______________________________

Emission data summary[1]		CMS performance summary[1]	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Startup/shutdown	....	a. Monitor equipment malfunctions	....
b. Control equipment problems	....	b. Non-Monitor equipment malfunctions	....
c. Process problems	....	c. Quality assurance calibration	....
d. Other known causes	....	d. Other known causes	....
e. Unknown causes	....	e. Unknown causes	....
2. Total duration of excess emission	....	2. Total CMS Downtime	....

Emission data summary [1]		CMS performance summary [1]	
3. Total duration of excess emissions × (100) [Total source operating time].	% [2]	3. [Total CMS Downtime] × (100) [Total source operating time].	% [2]

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[1] For opacity, record all times in minutes. For gases, record all times in hours.

[2] For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in § 60.7(c) shall be submitted.

On a separate page, describe any changes since last quarter in CMS, process or controls. I certify that the information contained in this report is true, accurate, and complete.

Name

Signature

Title

Date

(e)(1) Notwithstanding the frequency of reporting requirements specified in paragraph (c) of this section, an owner or operator who is required by an applicable subpart to submit excess emissions and monitoring systems performance reports (and summary reports) on a quarterly (or more frequent) basis may reduce the frequency of reporting for that standard to semiannual if the following conditions are met:

(i) For 1 full year (e.g., 4 quarterly or 12 monthly reporting periods) the affected facility's excess emissions and monitoring systems reports submitted to comply with a standard under this part continually demonstrate that the facility is in compliance with the applicable standard;

(ii) The owner or operator continues to comply with all recordkeeping and monitoring requirements specified in this subpart and the applicable standard; and

(iii) The Administrator does not object to a reduced frequency of reporting for the affected facility, as provided in paragraph (e)(2) of this section.

(2) The frequency of reporting of excess emissions and monitoring systems performance (and summary) reports may be reduced only after the owner or operator notifies the Administrator in writing of his or her intention to make such a change and the Administrator does not object to the intended change. In deciding whether to approve a reduced frequency of reporting, the Administrator may review information concerning the source's entire previous performance history during the required recordkeeping period prior to the intended change, including performance test results, monitoring data, and evaluations of an owner or operator's conformance with operation and maintenance requirements. Such information may be used by the Administrator to make a judgment about the source's potential for noncompliance in the future. If the Administrator disapproves the owner or operator's request to reduce the frequency of reporting, the Administrator will notify the owner or operator in writing within 45 days after receiving notice of the owner or operator's intention. The notification from the Administrator to the owner or operator will specify the grounds on which the disapproval is based. In the absence of a notice of disapproval within 45 days, approval is automatically granted.

(3) As soon as monitoring data indicate that the affected facility is not in compliance with any emission limitation or operating parameter specified in the applicable standard, the frequency of reporting shall revert to the frequency specified in the applicable standard, and the owner or operator shall submit an excess emissions and monitoring systems performance report (and summary report, if required) at the next appropriate reporting period following the noncomplying event. After demonstrating compliance with the applicable standard for another full year, the owner or operator may again request approval from the Administrator to reduce the frequency of reporting for that standard as provided for in paragraphs (e)(1) and (e)(2) of this section.

(f) Any owner or operator subject to the provisions of this part shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records, except as follows:

(1) This paragraph applies to owners or operators required to install a continuous emissions monitoring system (CEMS) where the CEMS installed is automated, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. An automated CEMS records and reduces the measured data to the form of the pollutant emission standard through the use of a computerized data acquisition system. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (f) of this section, the owner or operator shall retain the most recent consecutive three averaging periods of subhourly measurements and a file that contains a hard copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard.

(2) This paragraph applies to owners or operators required to install a CEMS where the measured data is manually reduced to obtain the reportable form of the standard, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (f) of this section, the owner or operator shall retain all subhourly measurements for the most recent reporting period. The subhourly measurements shall be retained for 120 days from the date of the most recent summary or excess emission report submitted to the Administrator.

(3) The Administrator or delegated authority, upon notification to the source, may require the owner or operator to maintain all measurements as required by paragraph (f) of this section, if the Administrator or the delegated authority determines these records are required to more accurately assess the compliance status of the affected source.

(g) If notification substantially similar to that in paragraph (a) of this section is required by any other State or local agency, sending the Administrator a copy of that notification will satisfy the requirements of paragraph (a) of this section.

(h) Individual subparts of this part may include specific provisions which clarify or make inapplicable the provisions set forth in this section.

[36 FR 24877, Dec. 28, 1971, as amended at 40 FR 46254, Oct. 6, 1975; 40 FR 58418, Dec. 16, 1975; 45 FR 5617, Jan. 23, 1980; 48 FR 48335, Oct. 18, 1983; 50 FR 53113, Dec. 27, 1985; 52 FR 9781, Mar. 26, 1987; 55 FR 51382, Dec. 13, 1990; 59 FR 12428, Mar. 16, 1994; 59 FR 47265, Sep. 15, 1994; 64 FR 7463, Feb. 12, 1999]

§60.8 Performance tests.

(a) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).

(b) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart unless the Administrator (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the affected facility is in compliance with the standard, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.

(c) Performance tests shall be conducted under such conditions as the Administrator shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

(d) The owner or operator of an affected facility shall provide the Administrator at least 30 days prior notice of any performance test, except as specified under other subparts, to afford the Administrator the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Administrator (or delegated State or local agency) as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Administrator (or delegated State or local agency) by mutual agreement.

(e) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such facility. This includes (i) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and (ii) providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.

(2) Safe sampling platform(s).

(3) Safe access to sampling platform(s).

(4) Utilities for sampling and testing equipment.

(f) Unless otherwise specified in the applicable subpart, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 9314, Mar. 8, 1974; 42 FR 57126, Nov. 1, 1977; 44 FR 33612, June 11, 1979; 54 FR 6662, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 64 FR 7463, Feb. 12, 1999]

§ 60.9 Availability of information.

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter. (Information submitted voluntarily to the Administrator for the purposes of §§ 60.5 and 60.6 is governed by §§ 2.201 through 2.213 of this chapter and not by § 2.301 of this chapter.)

§ 60.10 State authority.

The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from:

(a) Adopting and enforcing any emission standard or limitation applicable to an affected facility, provided that such emission standard or limitation is not less stringent than the standard applicable to such facility.

(b) Requiring the owner or operator of an affected facility to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of such facility.

§60.11 Compliance with standards and maintenance requirements.

(a) Compliance with standards in this part, other than opacity standards, shall be determined in accordance with performance tests established by §60.8, unless otherwise specified in the applicable standard.

(b) Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Method 9 in appendix A of this part, any alternative method that is approved by the Administrator, or as provided in paragraph (e)(5) of this section. For purposes of determining initial compliance, the minimum total time of observations shall be 3 hours (30 6-minute averages) for the performance test or other set of observations (meaning those fugitive-type emission sources subject only to an opacity standard).

(c) The opacity standards set forth in this part shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.

(d) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

(e)(1) For the purpose of demonstrating initial compliance, opacity observations shall be conducted concurrently with the initial performance test required in §60.8 unless one of the following conditions apply. If no performance test under §60.8 is required, then opacity observations shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility. If visibility or other conditions prevent the opacity observations from being conducted concurrently with the initial performance test required under §60.8, the source owner or operator shall reschedule the opacity observations as soon after the initial performance test as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. In these cases, the 30-day prior notification to the Administrator required in §60.7(a)(6) shall be waived. The rescheduled opacity observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under §60.8. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity observations from being made concurrently with the initial performance test in accordance with procedures contained in Method 9 of appendix B of this part. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determing compliance with opacity standards. The owner or operator of an affected facility shall make available, upon request by the Administrator, such records as may be necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification. Except as provided in paragraph (e)(5) of this section, the results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the source shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1 in appendix B of this part, has been properly maintained and (at the time of the alleged violation) that the resulting data have not been altered in any way.

(2) Except as provided in paragraph (e)(3) of this section, the owner or operator of an affected facility to which an opacity standard in this part applies shall conduct opacity observations in accordance with paragraph (b) of this section, shall record the opacity of emissions, and shall report to the Administrator the opacity results along with the results of the initial performance test required under § 60.8. The inability of an owner or operator to secure a visible emissions observer shall not be considered a reason for not conducting the opacity observations concurrent with the initial performance test.

(3) The owner or operator of an affected facility to which an opacity standard in this part applies may request the Administrator to determine and to record the opacity of emissions from the affected facility during the initial performance test and at such times as may be required. The owner or operator of the affected facility shall report the opacity results. Any request to the Administrator to determine and to record the opacity of emissions from an affected facility shall be included in the notification required in § 60.7(a)(6). If, for some reason, the Administrator cannot determine and record the opacity of emissions from the affected facility during the performance test, then the provisions of paragraph (e)(1) of this section shall apply.

(4) An owner or operator of an affected facility using a continuous opacity monitor (transmissometer) shall record the monitoring data produced during the initial performance test required by § 60.8 and shall furnish the Administrator a written report of the monitoring results along with Method 9 and § 60.8 performance test results.

(5) An owner or operator of an affected facility subject to an opacity standard may submit, for compliance purposes, continuous opacity monitoring system (COMS) data results produced during any performance test required under § 60.8 in lieu of Method 9 observation data. If an owner or operator elects to submit COMS data for compliance with the opacity standard, he shall notify the Administrator of that decision, in writing, at least 30 days before any performance test required under § 60.8 is conducted. Once the owner or operator of an affected facility has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent tests required under § 60.8 until the owner or operator notifies the Administrator, in writing, to the contrary. For the purpose of determining compliance with the opacity standard during a performance test required under § 60.8 using COMS data, the minimum total time of COMS data collection shall be averages of all 6-minute continuous periods within the duration of the mass emission performance test. Results of the COMS opacity determinations shall be submitted along with the results of the performance test required under § 60.8. The owner or operator of an affected facility using a COMS for compliance purposes is responsible for demonstrating that the COMS meets the requirements specified in § 60.13(c) of this part, that the COMS has been properly maintained and operated, and that the resulting data have not been altered in any way. If COMS data results are submitted for compliance with the opacity standard for a period of time during which Method 9 data indicates noncompliance, the Method 9 data will be used to determine compliance with the opacity standard.

(6) Upon receipt from an owner or operator of the written reports of the results of the performance tests required by § 60.8, the opacity observation results and observer certification required by § 60.11(e)(1), and the COMS results, if applicable, the Administrator will make a finding concerning compliance with opacity and other applicable standards. If COMS data results are used to comply with an opacity standard, only those results are required to be submitted along with the performance test results required by § 60.8. If the Administrator finds that an affected facility is in compliance with all applicable standards for which performance tests are conducted in accordance with § 60.8 of this part but during the time such performance tests are being conducted fails to meet any applicable opacity standard, he shall notify the owner or operator and advise

him that he may petition the Administrator within 10 days of receipt of notification to make appropriate adjustment to the opacity standard for the affected facility.

(7) The Administrator will grant such a petition upon a demonstration by the owner or operator that the affected facility and associated air pollution control equipment was operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the Administrator; and that the affected facility and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.

(8) The Administrator will establish an opacity standard for the affected facility meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity standard in the FEDERAL REGISTER.

(f) Special provisions set forth under an applicable subpart shall supersede any conflicting provisions in paragraphs (a) through (e) of this section.

(g) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[38 FR 28565, Oct. 15, 1973, as amended at 39 FR 39873, Nov. 12, 1974; 43 FR 8800, Mar. 3, 1978; 45 FR 23379, Apr. 4, 1980; 48 FR 48335, Oct. 18, 1983; 50 FR 53113, Dec. 27, 1985; 51 FR 1790, Jan. 15, 1986; 52 FR 9781, Mar. 26, 1987; 62 FR 8328, Feb. 24, 1997; 65 FR 61749, Oct. 17, 2000]

§ 60.12 Circumvention.

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[39 FR 9314, Mar. 8, 1974]

§ 60.13 Monitoring requirements.

(a) For the purposes of this section, all continuous monitoring systems required under applicable subparts shall be subject to the provisions of this section upon promulgation of performance specifications for continuous monitoring systems under appendix B to this part and, if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis, appendix F to this part, unless otherwise specified in an applicable subpart or by the Administrator. Appendix F is applicable December 4, 1987.

(b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under §60.8. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device.

(c) If the owner or operator of an affected facility elects to submit continous opacity monitoring system (COMS) data for compliance with the opacity standard as provided under §60.11(e)(5), he shall conduct a performance evaluation of the COMS as specified in Performance Specification 1, appendix B, of this part before the performance test required under §60.8 is conducted. Otherwise, the owner or operator of an affected facility shall conduct a performance evaluation of the COMS or continuous emission monitoring system (CEMS) during any performance test required under §60.8 or within 30 days thereafter in accordance with the applicable performance specification in appendix B of this part, The owner or operator of an affected facility shall conduct COMS or CEMS performance evaluations at such other times as may be required by the Administrator under section 114 of the Act.

(1) The owner or operator of an affected facility using a COMS to determine opacity compliance during any performance test required under § 60.8 and as described in § 60.11(e)(5) shall furnish the Administrator two or, upon request, more copies of a written report of the results of the COMS performance evaluation described in paragraph (c) of this section at least 10 days before the performance test required under § 60.8 is conducted.

(2) Except as provided in paragraph (c)(1) of this section, the owner or operator of an affected facility shall furnish the Administrator within 60 days of completion two or, upon request, more copies of a written report of the results of the performance evaluation.

(d)(1) Owners and operators of a CEMS installed in accordance with the provisions of this part, must automatically check the zero (or low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with a written procedure. The zero and span must, as a minimum, be adjusted whenever either the 24-hour zero drift or the 24-hour span drift exceeds two times the limit of the applicable performance specification in appendix B of this part. The system must allow the amount of the excess zero and span drift to be recorded and quantified whenever specified. Owners and operators of a COMS installed in accordance with the provisions of this part, must automatically, intrinsic to the opacity monitor, check the zero and upscale (span) calibration drifts at least once daily. For a particular COMS, the acceptable range of zero and upscale calibration materials is as defined in the applicable version of PS–1 in appendix B of this part. For a COMS, the optical surfaces, exposed to the effluent gases, must be cleaned before performing the zero and upscale drift adjustments, except for systems using automatic zero adjustments. The optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.

(2) Unless otherwise approved by the Administrator, the following procedures must be followed for a COMS. Minimum procedures must include an automated method for producing a simulated zero opacity condition and an upscale opacity condition using a certified neutral density filter or other related technique to produce a known obstruction of the light beam. Such procedures must provide a system check of all active analyzer internal optics with power or curvature, all active electronic circuitry including the light source and photodetector assembly, and electronic or electro-mechanical systems and hardware and or software used during normal measurement operation.

(e) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under paragraph (d) of this section, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:

(1) All continuous monitoring systems referenced by paragraph (c) of this section for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(2) All continuous monitoring systems referenced by paragraph (c) of this section for measuring emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(f) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of appendix B of this part shall be used.

(g) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install an applicable continuous monitoring system on each separate effluent unless the installation of fewer systems is approved by the Administrator. When more than one continuous monitoring system is used to measure the emissions from one affected facility (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required from each continuous monitoring system.

(h) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to 6-minute averages and for continuous monitoring systems other than opacity to 1-hour averages for time periods as defined in §60.2. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period. For continuous monitoring systems other than opacity, 1-hour averages shall be computed from four or more data points equally spaced over each 1-hour period. Data recorded during periods of continuous system breakdown, repair, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph. For owners and operators complying with the requirements in §60.7(f) (1) or (2), data averages must include any data recorded during periods of monitor breakdown or malfunction. An arithmetic or integrated average of all data may be used. The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O_2 or ng/J of pollutant). All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in subparts. After conversion into units of the standard, the data may be rounded to the same number of significant digits as used in the applicable subparts to specify the emission limit (e.g., rounded to the nearest 1 percent opacity).

(i) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part including, but not limited to the following:

(1) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases.

(2) Alternative monitoring requirements when the affected facility is infrequently operated.

(3) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct for stack moisture conditions.

(4) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.

(5) Alternative methods of converting pollutant concentration measurements to units of the standards.

(6) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells.

(7) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any subpart.

(8) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, appendix B, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Administrator may require that such demonstration be performed for each affected facility.

(9) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities

is released to the atmosphere through more than one point.

(j) An alternative to the relative accuracy (RA) test specified in Performance Specification 2 of appendix B may be requested as follows:

(1) An alternative to the reference method tests for determining RA is available for sources with emission rates demonstrated to be less than 50 percent of the applicable standard. A source owner or operator may petition the Administrator to waive the RA test in Section 8.4 of Performance Specification 2 and substitute the procedures in Section 16.0 if the results of a performance test conducted according to the requirements in § 60.8 of this subpart or other tests performed following the criteria in § 60.8 demonstrate that the emission rate of the pollutant of interest in the units of the applicable standard is less than 50 percent of the applicable standard. For sources subject to standards expressed as control efficiency levels, a source owner or operator may petition the Administrator to waive the RA test and substitute the procedures in Section 16.0 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the continuous emission monitoring system is used to determine compliance continuously with the applicable standard. The petition to waive the RA test shall include a detailed description of the procedures to be applied. Included shall be location and procedure for conducting the alternative, the concentration or response levels of the alternative RA materials, and the other equipment checks included in the alternative procedure. The Administrator will review the petition for completeness and applicability. The determination to grant a waiver will depend on the intended use of the CEMS data (e.g., data collection purposes other than NSPS) and may require specifications more stringent than in Performance Specification 2 (e.g., the applicable emission limit is more stringent than NSPS).

(2) The waiver of a CEMS RA test will be reviewed and may be rescinded at such time, following successful completion of the alternative RA procedure, that the CEMS data indicate that the source emissions are approaching the level. The criterion for reviewing the waiver is the collection of CEMS data showing that emissions have exceeded 70 percent of the applicable standard for seven, consecutive, averaging periods as specified by the applicable regulation(s). For sources subject to standards expressed as control efficiency levels, the criterion for reviewing the waiver is the collection of CEMS data showing that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for seven, consecutive, averaging periods as specified by the applicable regulation(s) [e.g., § 60.45(g) (2) and (3), § 60.73(e), and § 60.84(e)]. It is the responsibility of the source operator to maintain records and determine the level of emissions relative to the criterion on the waiver of RA testing. If this criterion is exceeded, the owner or operator must notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increasing emissions. The Administrator will review the notification and may rescind the waiver and require the owner or operator to conduct a RA test of the CEMS as specified in Section 8.4 of Performance Specification 2.

[40 FR 46255, Oct. 6, 1975; 40 FR 59205, Dec. 22, 1975, as amended at 41 FR 35185, Aug. 20, 1976; 48 FR 13326, Mar. 30, 1983; 48 FR 23610, May 25, 1983; 48 FR 32986, July 20, 1983; 52 FR 9782, Mar. 26, 1987; 52 FR 17555, May 11, 1987; 52 FR 21007, June 4, 1987; 64 FR 7463, Feb. 12, 1999; 65 FR 48920, Aug. 10, 2000; 65 FR 61749, Oct. 17, 2000; 66 FR 44980, Aug. 27, 2001]

EDITORIAL NOTE: At 65 FR 61749, Oct. 17, 2000, § 60.13 was amended by revising the words ''ng/J of pollutant'' to read ''ng of pollutant per J of heat input'' in the sixth sentence of paragraph (h). However, the amendment could not be incorporated because the words ''ng/J of pollutant'' do not exist in the sixth sentence of paragraph (h).

§ 60.14 Modification.

(a) Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.

(b) Emission rate shall be expressed as kg/hr of any pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine emission rate:

(1) Emission factors as specified in the latest issue of ''Compilation of Air Pollutant Emission Factors,'' EPA Publication No. AP–42, or other emission factors determined by the Administrator to be superior to AP–42 emission factors, in cases where utilization of emission factors demonstrates that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.

(2) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in paragraph (b)(1) of this section does not demonstrate to the Administrator's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator utilizing emission factors as referenced in paragraph (b)(1) of this section. When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in appendix C of this part shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator based on representative performance of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.

(c) The addition of an affected facility to a stationary source as an expansion to that source or as a replacement for an existing facility shall not by itself bring within the applicability of this part any other facility within that source.

(d) [Reserved]

(e) The following shall not, by themselves, be considered modifications under this part:

(1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category, subject to the provisions of paragraph (c) of this section and § 60.15.

(2) An increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility.

(3) An increase in the hours of operation.

(4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by § 60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Act, shall not be considered a modification.

(5) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system which the Administrator determines to be less environmentally beneficial.

(6) The relocation or change in ownership of an existing facility.

(f) Special provisions set forth under an applicable subpart of this part shall supersede any conflicting provisions of this section.

(g) Within 180 days of the completion of any physical or operational change subject to the control measures specified in paragraph (a) of this section, compliance with all applicable standards must be achieved.

(h) No physical change, or change in the method of operation, at an existing electric utility steam generating unit shall be treated as a modification for the purposes of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the 5 years prior to the change.

(i) Repowering projects that are awarded funding from the Department of Energy as permanent clean coal technology demonstration projects (or similar projects funded by EPA) are exempt from the requirements of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the five years prior to the change.

(j)(1) Repowering projects that qualify for an extension under section 409(b) of the Clean Air Act are exempt from the requirements of this section, provided that such change does not increase the actual hourly emissions of any pollutant regulated under this section above the actual hourly emissions achievable at that unit during the 5 years prior to the change.

(2) This exemption shall not apply to any new unit that:

(i) Is designated as a replacement for an existing unit;

(ii) Qualifies under section 409(b) of the Clean Air Act for an extension of an emission limitation compliance date under section 405 of the Clean Air Act; and

(iii) Is located at a different site than the existing unit.

(k) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project is exempt from the requirements of this section. A *temporary clean coal control technology demonstration project*, for the purposes of this section is a clean coal technology demonstration project that is operated for a period of 5 years or less, and which complies with the State implementation plan for the State in which the project is located and other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.

(l) The reactivation of a very clean coal-fired electric utility steam generating unit is exempt from the requirements of this section.

[40 FR 58419, Dec. 16, 1975, as amended at 43 FR 34347, Aug. 3, 1978; 45 FR 5617, Jan. 23, 1980; 57 FR 32339, July 21, 1992; 65 FR 61750, Oct. 17, 2000]

§ 60.15 Reconstruction.

(a) An existing facility, upon reconstruction, becomes an affected facility, irrespective of any change in emission rate.

(b) ‘‘Reconstruction’’ means the replacement of components of an existing facility to such an extent that:

(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and

(2) It is technologically and economically feasible to meet the applicable standards set forth in this part.

(c) ‘‘Fixed capital cost’’ means the capital needed to provide all the depreciable components.

(d) If an owner or operator of an existing facility proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, he shall notify the Administrator of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:

(1) Name and address of the owner or operator.

(2) The location of the existing facility.

(3) A brief description of the existing facility and the components which are to be replaced.

(4) A description of the existing air pollution control equipment and the proposed air pollution control equipment.

(5) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility.

(6) The estimated life of the existing facility after the replacements.

(7) A discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.

(e) The Administrator will determine, within 30 days of the receipt of the notice required by paragraph (d) of this section and any additional information he may reasonably require, whether the proposed replacement constitutes reconstruction.

(f) The Administrator's determination under paragraph (e) shall be based on:

(1) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;

(2) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;

(3) The extent to which the components being replaced cause or contribute to the emissions from the facility; and

(4) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.

(g) Individual subparts of this part may include specific provisions which refine and delimit the concept of reconstruction set forth in this section.

[40 FR 58420, Dec. 16, 1975]

§60.16 Priority list.

PRIORITIZED MAJOR SOURCE CATEGORIES

Priority Number[1]	*Source Category*
1.	Synthetic Organic Chemical Manufacturing Industry (SOCMI) and Volatile Organic Liquid Storage Vessels and Handling Equipment (a) SOCMI unit processes (b) Volatile organic liquid (VOL) storage vessels and handling equipment (c) SOCMI fugitive sources (d) SOCMI secondary sources
2.	Industrial Surface Coating: Cans
3.	Petroleum Refineries: Fugitive Sources
4.	Industrial Surface Coating: Paper
5.	Dry Cleaning (a) Perchloroethylene (b) Petroleum solvent
6.	Graphic Arts
7.	Polymers and Resins: Acrylic Resins
8.	Mineral Wool (Deleted)
9.	Stationary Internal Combustion Engines
10.	Industrial Surface Coating: Fabric
11.	Industrial-Commercial-Institutional Steam Generating Units.
12.	Incineration: Non-Municipal (Deleted)
13.	Non-Metallic Mineral Processing
14.	Metallic Mineral Processing
15.	Secondary Copper (Deleted)
16.	Phosphate Rock Preparation
17.	Foundries: Steel and Gray Iron
18.	Polymers and Resins: Polyethylene
19.	Charcoal Production
20.	Synthetic Rubber (a) Tire manufacture (b) SBR production
21.	Vegetable Oil
22.	Industrial Surface Coating: Metal Coil
23.	Petroleum Transportation and Marketing
24.	By-Product Coke Ovens
25.	Synthetic Fibers
26.	Plywood Manufacture
27.	Industrial Surface Coating: Automobiles
28.	Industrial Surface Coating: Large Appliances
29.	Crude Oil and Natural Gas Production
30.	Secondary Aluminum
31.	Potash (Deleted)
32.	Lightweight Aggregate Industry: Clay, Shale, and Slate[2]
33.	Glass
34.	Gypsum
35.	Sodium Carbonate
36.	Secondary Zinc (Deleted)
37.	Polymers and Resins: Phenolic
38.	Polymers and Resins: Urea-Melamine
39.	Ammonia (Deleted)
40.	Polymers and Resins: Polystyrene
41.	Polymers and Resins: ABS-SAN Resins
42.	Fiberglass
43.	Polymers and Resins: Polypropylene
44.	Textile Processing
45.	Asphalt Processing and Asphalt Roofing Manufacture
46.	Brick and Related Clay Products
47.	Ceramic Clay Manufacturing (Deleted)
48.	Ammonium Nitrate Fertilizer
49.	Castable Refractories (Deleted)
50.	Borax and Boric Acid (Deleted)
51.	Polymers and Resins: Polyester Resins
52.	Ammonium Sulfate
53.	Starch
54.	Perlite
55.	Phosphoric Acid: Thermal Process (Deleted)
56.	Uranium Refining
57.	Animal Feed Defluorination (Deleted)
58.	Urea (for fertilizer and polymers)
59.	Detergent (Deleted)

Other Source Categories

Lead acid battery manufacture[3]
Organic solvent cleaning[3]
Industrial surface coating: metal furniture[3]
Stationary gas turbines[4]
Municipal solid waste landfills[4]

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[1] Low numbers have highest priority, e.g., No. 1 is high priority, No. 59 is low priority.

[2] Formerly titled ''Sintering: Clay and Fly Ash''.

[3] Minor source category, but included on list since an NSPS is being developed for that source category.

[4] Not prioritized, since an NSPS for this major source category has already been promulgated.

[47 FR 951, Jan. 8, 1982, as amended at 47 FR 31876, July 23, 1982; 51 FR 42796, Nov. 25, 1986; 52 FR 11428, Apr. 8, 1987; 61 FR 9919, Mar. 12, 1996]

§ 60.17 Incorporations by reference.

The materials listed below are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register on the date listed. These materials are incorporated as they exist on the date of the approval, and a notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding address noted below, and all are available for inspection at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC and at the Library (MD–35), U.S. EPA, Research Triangle Park, NC.

(a) The following materials are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 1916 Race Street, Philadelphia, PA 19103; or University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

(1) ASTM A99–76, 82 (Reapproved 1987), Standard Specification for Ferromanganese, incorporation by reference (IBR) approved January 27, 1983 for § 60.261.

(2) ASTM A100–69, 74, 93, Standard Specification for Ferrosilicon, IBR approved January 27, 1983 for § 60.261.

(3) ASTM A101–73, 93, Standard Specification for Ferrochromium, IBR approved January 27, 1983 for § 60.261.

(4) ASTM A482–76, 93, Standard Specification for Ferrochromesilicon, IBR approved January 27, 1983 for § 60.261.

(5) ASTM A483–64, 74 (Reapproved 1988), Standard Specification for Silicomanganese, IBR approved January 27, 1983 for § 60.261.

(6) ASTM A495–76, 94, Standard Specification for Calcium-Silicon and Calcium Manganese-Silicon, IBR approved January 27, 1983 for § 60.261.

(7) ASTM D86–78, 82, 90, 93, 95, 96, Distillation of Petroleum Products, IBR approved for §§ 60.562–2(d), 60.593(d), and 60.633(h).

(8) ASTM D129–64, 78, 95, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for Appendix A: Method 19, Section 12.5.2.2.3; and § 60.106(j)(2).

(9) ASTM D240–76, 92, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved January 27, 1983 for §§ 60.46(c), 60.296(b), and Appendix A: Method 19, Section 12.5.2.2.3.

(10) ASTM D270–65, 75, Standard Method of Sampling Petroleum and Petroleum Products, IBR approved January 27, 1983 for Appendix A: Method 19, Section 12.5.2.2.1.

(11) ASTM D323–82, 94, Test Method for Vapor Pressure of Petroleum Products (Reid Method), IBR approved April 8, 1987 for §§ 60.111(l), 60.111a(g), 60.111b(g), and 60.116b(f)(2)(ii).

(12) ASTM D388–77, 90, 91, 95, 98a, Standard Specification for Classification of Coals by Rank, IBR approved for §§ 60.41(f), 60.45(f)(4)(i), 60.45(f)(4)(ii), 60.45(f)(4)(vi), 60.41a, 60.41b, and 60.251(b) and (c).

(13) ASTM D396–78, 89, 90, 92, 96, 98, Standard Specification for Fuel Oils, IBR approved for §§ 60.41b, 60.41c, 60.111(b), and 60.111a(b).

(14) ASTM D975–78, 96, 98a, Standard Specification for Diesel Fuel Oils, IBR approved January 27, 1983 for §§ 60.111(b) and 60.111a(b).

(15) ASTM D1072–80, 90 (Reapproved 1994), Standard Method for Total Sulfur in Fuel Gases, IBR approved July 31, 1984 for § 60.335(d).

(16) ASTM D1137–53, 75, Standard Method for Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, IBR approved January 27, 1983 for § 60.45(f)(5)(i).

(17) ASTM D1193–77, 91, Standard Specification for Reagent Water, IBR approved for Appendix A: Method 5, Section 7.1.3; Method 5E, Section 7.2.1; Method 5F, Section 7.2.1; Method 6, Section 7.1.1; Method 7, Section 7.1.1; Method 7C, Section 7.1.1; Method 7D, Section 7.1.1; Method 10A, Section 7.1.1; Method 11, Section 7.1.3; Method 12, Section 7.1.3; Method 13A, Section 7.1.2; Method 26, Section 7.1.2; Method 26A, Section 7.1.2; and Method 29, Section 7.2.2.

(18) ASTM D1266–87, 91, 98, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved August 17, 1989 for § 60.106(j)(2).

(19) ASTM D1475–60 (Reapproved 1980), 90, Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved January 27, 1983 for § 60.435(d)(1), Appendix A: Method 24, Section 6.1; and Method 24A, Sections 6.5 and 7.1.

(20) ASTM D1552–83, 95, Standard Test Method for Sulfur in Petroleum Products (High Temperature Method), IBR approved for Appendix A: Method 19, Section 12.5.2.2.3; and § 60.106(j)(2).

(21) ASTM D1826–77, 94, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, IBR approved January 27, 1983 for §§ 60.45(f)(5)(ii), 60.46(c)(2), 60.296(b)(3), and Appendix A: Method 19, Section 12.3.2.4.

(22) ASTM D1835–87, 91, 97, Standard Specification for Liquefied Petroleum (LP) Gases, approved for §§ 60.41b and 60.41c.

(23) ASTM D1945–64, 76, 91, 96, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved January 27, 1983 for § 60.45(f)(5)(i).

(24) ASTM D1946–77, 90 (Reapproved 1994), Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for §§ 60.45(f)(5)(i), 60.18(f)(3), 60.614(e)(2)(ii), 60.614(e)(4), 60.664(e)(2)(ii), 60.664(e)(4), 60.564(f)(1), 60.704(d)(2)(ii), and 60.704(d)(4).

(25) ASTM D2013–72, 86, Standard Method of Preparing Coal Samples for Analysis, IBR approved January 27, 1983, for Appendix A: Method 19, Section 12.5.2.1.3.

(26) ASTM D2015–77 (Reapproved 1978), 96, Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, IBR approved January 27, 1983 for § 60.45(f)(5)(ii), 60.46(c)(2), and Appendix A: Method 19, Section 12.5.2.1.3.

(27) ASTM D2016–74, 83, Standard Test Methods for Moisture Content of Wood, IBR approved for Appendix A: Method 28, Section 16.1.1.

(28) ASTM D2234–76, 96, 97b, 98, Standard Methods for Collection of a Gross Sample of Coal, IBR approved January 27, 1983 for Appendix A: Method 19, Section 12.5.2.1.1.

(29) ASTM D2369–81, 87, 90, 92, 93, 95, Standard Test Method for Volatile Content of Coatings, IBR approved January 27, 1983 for Appendix A: Method 24, Section 6.2.

(30) ASTM D2382–76, 88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for §§ 60.18(f)(3), 60.485(g)(6), 60.614(e)(4), 60.664(e)(4), 60.564(f)(3), and 60.704(d)(4).

(31) ASTM D2504–67, 77, 88 (Reapproved 1993), Noncondensable Gases in C_3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for § 60.485(g)(5).

(32) ASTM D2584–68 (Reapproved 1985), 94, Standard Test Method for Ignition Loss of Cured Reinforced Resins, IBR approved February 25, 1985 for § 60.685(c)(3)(i).

(33) ASTM D2622–87, 94, 98, Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry, IBR approved August 17, 1989 for § 60.106(j)(2).

(34) ASTM D2879–83, 96, 97, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved April 8, 1987 for §§ 60.485(e)(1), 60.111b(f)(3), 60.116b(e)(3)(ii), and 60.116b(f)(2)(i).

(35) ASTM D2880–78, 96, Standard Specification for Gas Turbine Fuel Oils, IBR approved January 27, 1983 for §§ 60.111(b), 60.111a(b), and 60.335(d).

(36) ASTM D2908–74, 91, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, IBR approved for § 60.564(j).

(37) ASTM D2986–71, 78, 95a, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, IBR approved January 27, 1983 for Appendix A: Method 5, Section 7.1.1; Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.

(38) ASTM D3031–81, Standard Test Method for Total Sulfur in Natural Gas by Hydrogenation, IBR approved July 31, 1984 for § 60.335(d).

(39) ASTM D3173–73, 87, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved January 27, 1983 for Appendix A: Method 19, Section 12.5.2.1.3.

(40) ASTM D3176–74, 89, Standard Method for Ultimate Analysis of Coal and Coke, IBR approved January 27, 1983 for § 60.45(f)(5)(i) and Appendix A: Method 19, Section 12.3.2.3.

(41) ASTM D3177–75, 89, Standard Test Method for Total Sulfur in the Analysis Sample of Coal and Coke, IBR approved January 27, 1983 for Appendix A: Method 19, Section 12.5.2.1.3.

(42) ASTM D3178–73 (Reapproved 1979), 89, Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, IBR approved January 27, 1983 for § 60.45(f)(5)(i).

(43) ASTM D3246–81, 92, 96, Standard Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved July 31, 1984 for § 60.335(d).

(44) ASTM D3270–73T, 80, 91, 95, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for Appendix A: Method 13A, Section 16.1.

(45) ASTM D3286–85, 96, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter, IBR approved for Appendix A: Method 19, Section 12.5.2.1.3.

(46) ASTM D3370–76, 95a, Standard Practices for Sampling Water, IBR approved for § 60.564(j).

(47) ASTM D3792–79, 91, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved January 27, 1983 for Appendix A: Method 24, Section 6.3.

(48) ASTM D4017–81, 90, 96a, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved January 27, 1983 for Appendix A: Method 24, Section 6.4.

(49) ASTM D4057–81, 95, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for Appendix A: Method 19, Section 12.5.2.2.3.

(50) ASTM D4084–82, 94, Standard Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved July 31, 1984 for § 60.335(d).

(51) ASTM D4177–95, Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for Appendix A: Method 19, 12.5.2.2.1.

(52) ASTM D4239–85, 94, 97, Standard Test Methods for Sulfur in the Analysis Sample of

Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for Appendix A: Method 19, Section 12.5.2.1.3.

(53) ASTM D4442–84, 92, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials, IBR approved for Appendix A: Method 28, Section 16.1.1.

(54) ASTM D4444–92, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters, IBR approved for Appendix A: Method 28, Section 16.1.1.

(55) ASTM D4457–85 (Reapproved 1991), Test Method for Determination of Dichloromethane and 1, 1, 1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph, IBR approved for Appendix A: Method 24, Section 6.5.

(56) ASTM D4809–95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for §§60.18(f)(3), 60.485(g)(6), 60.564(f)(3), 60.614(d)(4), 60.664(e)(4), and 60.704(d)(4).

(57) ASTM D5403–93, Standard Test Methods for Volatile Content of Radiation Curable Materials. IBR approved September 11, 1995 for Appendix A: Method 24, Section 6.6.

(58) ASTM D5865–98, Standard Test Method for Gross Calorific Value of Coal and Coke. IBR approved for §60.45(f)(5)(ii), 60.46(c)(2), and Appendix A: Method 19, Section 12.5.2.1.3.

(59) ASTM E168–67, 77, 92, General Techniques of Infrared Quantitative Analysis, IBR approved for §§60.593(b)(2) and 60.632(f).

(60) ASTM E169–63, 77, 93, General Techniques of Ultraviolet Quantitative Analysis, IBR approved for §§60.593(b)(2) and 60.632(f).

(61) ASTM E260–73, 91, 96, General Gas Chromatography Procedures, IBR approved for §§60.593(b)(2) and 60.632(f).

(62)–(63) [Reserved]

(64) ASTM D 6216–98 Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications, IBR approved February 6, 2001 for appendix B, PS–1.

(b) The following material is available for purchase from the Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, VA 22209.

(1) AOAC Method 9, Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11–12, IBR approved January 27, 1983 for §§60.204(b)(3), 60.214(b)(3), 60.224(b)(3), 60.234(b)(3).

(c) The following material is available for purchase from the American Petroleum Institute, 1220 L Street NW., Washington, DC 20005.

(1) API Publication 2517, Evaporation Loss from External Floating Roof Tanks, Second Edition, February 1980, IBR approved January 27, 1983, for §§60.111(i), 60.111a(f), 60.111a(f)(1) and 60.116b(e)(2)(i).

(d) The following material is available for purchase from the Technical Association of the Pulp and Paper Industry (TAPPI), Dunwoody Park, Atlanta, GA 30341.

(1) TAPPI Method T624 os–68, IBR approved January 27, 1983 for §60.285(d)(3).

(e) The following material is available for purchase from the Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue NW., Washington, DC 20037.

(1) Method 209A, Total Residue Dried at 103–105 ° C, in Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980, IBR approved February 25, 1985 for §60.683(b).

(f) The following material is available for purchase from the following address: Underwriter's Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.

(1) UL 103, Sixth Edition revised as of September 3, 1986, Standard for Chimneys, Factory-built, Residential Type and Building Heating Appliance.

(g) The following material is available for purchase from the following address: West Coast Lumber Inspection Bureau, 6980 SW. Barnes Road, Portland, OR 97223.

(1) West Coast Lumber Standard Grading Rules No. 16, pages 5–21 and 90 and 91, September 3, 1970, revised 1984.

(h) The following material is available for purchase from the American Society of Mechanical Engineers (ASME), 345 East 47th Street, New York, NY 10017.

(1) ASME QRO–1–1994, Standard for the Qualification and Certification of Resource Recovery Facility Operators, IBR approved for §§60.56a, 60.54b(a), 60.54b(b), 60.1185(a), 60.1185(c)(2), 60.1675(a), and 60.1675(c)(2).

(2) ASME PTC 4.1–1964 (Reaffirmed 1991), Power Test Codes: Test Code for Steam Generating Units (with 1968 and 1969 Addenda), IBR approved for §§60.46b, 60.58a(h)(6)(ii), 60.58b(i)(6)(ii), 60.1320(a)(3) and 60.1810(a)(3).

(3) ASME Interim Supplement 19.5 on Instruments and Apparatus: Application, Part

II of Fluid Meters, 6th Edition (1971), IBR approved for §§ 60.58a(h)(6)(ii), 60.58b(i)(6)(ii), 60.1320(a)4), and 60.1810(a)(4).

(i) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW–846 Third Edition (November 1986), as amended by Updates I (July 1992), II (September 1994), IIA (August, 1993), IIB (January 1995), and III (December 1996). This document may be obtained from the U.S. EPA, Office of Solid Waste and Emergency Response, Waste Characterization Branch, Washington, DC 20460, and is incorporated by reference for appendix A to part 60, Method 29, Sections 7.5.34; 9.2.1; 9.2.3; 10.2; 10.3; 11.1.1; 11.1.3; 13.2.1; 13.2.2; 13.3.1; and Table 29–3.

(j) ''Standard Methods for the Examination of Water and Wastewater,'' 16th edition, 1985. Method 303F: ''Determination of Mercury by the Cold Vapor Technique.'' This document may be obtained from the American Public Health Association, 1015 18th Street, NW., Washington, DC 20036, and is incorporated by reference for appendix A to part 60, Method 29, Sections 9.2.3; 10.3; and 11.1.3.

(k) This material is available for purchase from the American Hospital Association (AHA) Service, Inc., Post Office Box 92683, Chicago, Illinois 60675–2683. You may inspect a copy at EPA's Air and Radiation Docket and Information Center (Docket A–91–61, Item IV–J–124), Room M–1500, 1200 Pennsylvania Ave., NW., Washington, DC.

(1) An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities. American Society for Health Care Environmental Services of the American Hospital Association. Chicago, Illinois. 1993. AHA Catalog No. 057007. ISBN 0–87258–673–5. IBR approved for § 60.35e and § 60.55c.

(l) This material is available for purchase from the National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22161. You may inspect a copy at EPA's Air and Radiation Docket and Information Center (Docket A–91–61, Item IV–J–125), Room M–1500, 1200 Pennsylvania Ave., NW., Washington, DC.

(1) OMB Bulletin No. 93–17: Revised Statistical Definitions for Metropolitan Areas. Office of Management and Budget, June 30, 1993. NTIS No. PB 93–192–664. IBR approved for § 60.31e.

[48 FR 3735, Jan. 27, 1983]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 60.17, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

§ 60.18 General control device requirements.

(a) *Introduction.* This section contains requirements for control devices used to comply with applicable subparts of parts 60 and 61. The requirements are placed here for administrative convenience and only apply to facilities covered by subparts referring to this section.

(b) *Flares.* Paragraphs (c) through (f) apply to flares.

(c)(1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.

(2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).

(3) An owner/operator has the choice of adhering to either the heat content specifications in paragraph (c)(3)(ii) of this section and the maximum tip velocity specifications in paragraph (c)(4) of this section, or adhering to the requirements in paragraph (c)(3)(i) of this section.

(i)(A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max}, as determined by the following equation:

$$V_{max}=(X_{H2}-K_1)^* K_2$$

Where:

V_{max}=Maximum permitted velocity, m/sec.

K_1=Constant, 6.0 volume-percent hydrogen.

K_2=Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H2}=The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946–77. (Incorporated by reference as specified in § 60.17).

(B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (f)(4) of this section.

(ii) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f)(3) of this section.

(4)(i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4) of this section, less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (c)(4) (ii) and (iii) of this section.

(ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).

(iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than the velocity, V_{max}, as determined by the method specified in paragraph (f)(5), and less than 122 m/sec (400 ft/sec) are allowed.

(5) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max}, as determined by the method specified in paragraph (f)(6).

(6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.

(d) Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.

(e) Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(f)(1) Method 22 of appendix A to this part shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22.

(2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

(3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

where:

H_T=Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$$K = \text{Constant, } 1.740 \times 10^{-7} \left(\frac{1}{\text{ppm}}\right) \left(\frac{\text{g mole}}{\text{scm}}\right) \left(\frac{\text{MJ}}{\text{kcal}}\right)$$

where the standard temperature for $\left(\frac{\text{g mole}}{\text{scm}}\right)$ is 20°C;

C_i=Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (Incorporated by reference as specified in § 60.17); and

H_i=Net heat of combustion of sample component i, kcal/g mole at 25 °≤C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382–76 or 88 or D4809–95 (incorporated by reference as specified in § 60.17) if published values are not available or cannot be calculated.

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.

(5) The maximum permitted velocity, V_{max}, for flares complying with paragraph (c)(4)(iii) shall be determined by the following equation.

$$\mathrm{Log}_{10}\,(V_{max})=(H_T+28.8)/31.7$$

V_{max}=Maximum permitted velocity, M/sec

28.8=Constant

31.7=Constant

H_T=The net heating value as determined in paragraph (f)(3).

(6) The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation.

$$V_{max}=8.706+0.7084\,(H_T)$$

V_{max}=Maximum permitted velocity, m/sec

8.706=Constant

0.7084=Constant

H_T=The net heating value as determined in paragraph (f)(3).

[51 FR 2701, Jan. 21, 1986, as amended at 63 FR 24444, May 4, 1998; 65 FR 61752, Oct. 17, 2000]

§ 60.19 General notification and reporting requirements.

(a) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word ‘‘calendar’’ is absent, unless otherwise specified in an applicable requirement.

(b) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be delivered or postmarked on or before 15 days following the end of the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery, including the use of electronic media, agreed to by the permitting authority, is acceptable.

(c) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.

(d) If an owner or operator of an affected facility in a State with delegated authority is required to submit periodic reports under this part to the State, and if the State has an established timeline for the submission of periodic reports that is consistent with the reporting frequency(ies) specified for such facility under this part, the owner or operator may change the dates by which periodic reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. The allowance in the previous sentence applies in each State beginning 1 year after the affected facility is required to be in compliance with the applicable subpart in this part. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.

(e) If an owner or operator supervises one or more stationary sources affected by standards set under this part and standards set under part 61, part 63, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State with an approved permit program) a common schedule on which periodic reports required by each applicable standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the stationary source is required to be in compliance with the applicable subpart in this part, or 1 year after the stationary source is required to be in compliance with the applicable 40 CFR part 61 or part 63 of this chapter standard, whichever is latest. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.

(f)(1)(i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (f)(2) and (f)(3) of this section, the owner or operator of an affected facility remains strictly subject to the requirements of this part.

(ii) An owner or operator shall request the adjustment provided for in paragraphs (f)(2) and (f)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.

(2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.

(3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.

(4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

[59 FR 12428, Mar. 16, 1994, as amended at 64 FR 7463, Feb. 12, 1998]

Subpart B—Adoption and Submittal of State Plans for Designated Facilities

SOURCE: 40 FR 53346, Nov. 17, 1975, unless otherwise noted.

§ 60.20 Applicability.

The provisions of this subpart apply to States upon publication of a final guideline document under § 60.22(a).

§ 60.21 Definitions.

Terms used but not defined in this subpart shall have the meaning given them in the Act and in subpart A:

(a) *Designated pollutant* means any air pollutant, emissions of which are subject to a standard of performance for new stationary sources but for which air quality criteria have not been issued, and which is not included on a list published under section 108(a) or section 112(b)(1)(A) of the Act.

(b) *Designated facility* means any existing facility (see § 60.2(aa)) which emits a designated pollutant and which would be subject to a standard of performance for that pollutant if the existing facility were an affected facility (see § 60.2(e)).

(c) *Plan* means a plan under section 111(d) of the Act which establishes emission standards for designated pollutants from designated facilities and provides for the implementation and enforcement of such emission standards.

(d) *Applicable plan* means the plan, or most recent revision thereof, which has been approved under §60.27(b) or promulgated under §60.27(d).

(e) *Emission guideline* means a guideline set forth in subpart C of this part, or in a final guideline document published under §60.22(a), which reflects the degree of emission reduction achievable through the application of the best system of emission reduction which (taking into account the cost of such reduction) the Administrator has determined has been adequately demonstrated for designated facilities.

(f) *Emission standard* means a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, or prescribing equipment specifications for control of air pollution emissions.

(g) *Compliance schedule* means a legally enforceable schedule specifying a date or dates by which a source or category of sources must comply with specific emission standards contained in a plan or with any increments of progress to achieve such compliance.

(h) *Increments of progress* means steps to achieve compliance which must be taken by an owner or operator of a designated facility, including:

(1) Submittal of a final control plan for the designated facility to the appropriate air pollution control agency;

(2) Awarding of contracts for emission control systems or for process modifications, or issuance of orders for the purchase of component parts to accomplish emission control or process modification;

(3) Initiation of on-site construction or installation of emission control equipment or process change;

(4) Completion of on-site construction or installation of emission control equipment or process change; and

(5) Final compliance.

(i) *Region* means an air quality control region designated under section 107 of the Act and described in part 81 of this chapter.

(j) *Local agency* means any local governmental agency.

§60.22 Publication of guideline documents, emission guidelines, and final compliance times.

(a) Concurrently upon or after proposal of standards of performance for the control of a designated pollutant from affected facilities, the Administrator will publish a draft guideline document containing information pertinent to control of the designated pollutant form designated facilities. Notice of the availability of the draft guideline document will be published in the FEDERAL REGISTER and public comments on its contents will be invited. After consideration of public comments and upon or after promulgation of standards of performance for control of a designated pollutant from affected facilities, a final guideline document will be published and notice of its availability will be published in the FEDERAL REGISTER.

(b) Guideline documents published under this section will provide information for the development of State plans, such as:

(1) Information concerning known or suspected endangerment of public health or welfare caused, or contributed to, by the designated pollutant.

(2) A description of systems of emission reduction which, in the judgment of the Administrator, have been adequately demonstrated.

(3) Information on the degree of emission reduction which is achievable with each system, together with information on the costs and environmental effects of applying each system to designated facilities.

(4) Incremental periods of time normally expected to be necessary for the design, installation, and startup of identified control systems.

(5) An emission guideline that reflects the application of the best system of emission reduction (considering the cost of such reduction) that has been adequately demonstrated for designated facilities, and the time within which compliance with emission standards of equivalent stringency can be achieved. The Administrator will specify different emission guidelines or compliance times or both for different sizes, types, and classes of designated

facilities when costs of control, physical limitations, geographical location, or similar factors make subcategorization appropriate. (6) Such other available information as the Administrator determines may contribute to the formulation of State plans.

(c) Except as provided in paragraph (d)(1) of this section, the emission guidelines and compliance times referred to in paragraph (b)(5) of this section will be proposed for comment upon publication of the draft guideline document, and after consideration of comments will be promulgated in subpart C of this part with such modifications as may be appropriate.

(d)(1) If the Administrator determines that a designated pollutant may cause or contribute to endangerment of public welfare, but that adverse effects on public health have not been demonstrated, he will include the determination in the draft guideline document and in the FEDERAL REGISTER notice of its availability. Except as provided in paragraph (d)(2) of this section, paragraph (c) of this section shall be inapplicable in such cases.

(2) If the Administrator determines at any time on the basis of new information that a prior determination under paragraph (d)(1) of this section is incorrect or no longer correct, he will publish notice of the determination in the FEDERAL REGISTER, revise the guideline document as necessary under paragraph (a) of this section, and propose and promulgate emission guidelines and compliance times under paragraph (c) of this section.

[40 FR 53346, Nov. 17, 1975, as amended at 54 FR 52189, Dec. 20, 1989]

§ 60.23 Adoption and submittal of State plans; public hearings.

(a)(1) Unless otherwise specified in the applicable subpart, within 9 months after notice of the availability of a final guideline document is published under § 60.22(a), each State shall adopt and submit to the Administrator, in accordance with § 60.4 of subpart A of this part, a plan for the control of the designated pollutant to which the guideline document applies.

(2) Within nine months after notice of the availability of a final revised guideline document is published as provided in § 60.22(d)(2), each State shall adopt and submit to the Administrator any plan revision necessary to meet the requirements of this subpart.

(b) If no designated facility is located within a State, the State shall submit a letter of certification to that effect to the Administrator within the time specified in paragraph (a) of this section. Such certification shall exempt the State from the requirements of this subpart for that designated pollutant.

(c)(1) Except as provided in paragraphs (c)(2) and (c)(3) of this section, the State shall, prior to the adoption of any plan or revision thereof, conduct one or more public hearings within the State on such plan or plan revision.

(2) No hearing shall be required for any change to an increment of progress in an approved compliance schedule unless the change is likely to cause the facility to be unable to comply with the final compliance date in the schedule.

(3) No hearing shall be required on an emission standard in effect prior to the effective date of this subpart if it was adopted after a public hearing and is at least as stringent as the corresponding emission guideline specified in the applicable guideline document published under § 60.22(a).

(d) Any hearing required by paragraph (c) of this section shall be held only after reasonable notice. Notice shall be given at least 30 days prior to the date of such hearing and shall include:

(1) Notification to the public by prominently advertising the date, time, and place of such hearing in each region affected;

(2) Availability, at the time of public announcement, of each proposed plan or revision thereof for public inspection in at least one location in each region to which it will apply;

(3) Notification to the Administrator;

(4) Notification to each local air pollution control agency in each region to which the plan or revision will apply; and

(5) In the case of an interstate region, notification to any other State included in the region.

(e) The State shall prepare and retain, for a minimum of 2 years, a record of each hearing for inspection by any interested party. The record shall contain, as a minimum, a list of witnesses together with the text of each presentation.

(f) The State shall submit with the plan or revision:

(1) Certification that each hearing required by paragraph (c) of this section was held in accordance with the notice required by paragraph (d) of this section; and

(2) A list of witnesses and their organizational affiliations, if any, appearing at the hearing and a brief written summary of each presentation or written submission.

(g) Upon written application by a State agency (through the appropriate Regional Office), the Administrator may approve State procedures designed to insure public participation in the matters for which hearings are required and public notification of the opportunity to participate if, in the judgment of the Administrator, the procedures, although different from the requirements of this subpart, in fact provide for adequate notice to and participation of the public. The Administrator may impose such conditions on his approval as he deems necessary. Procedures approved under this section shall be deemed to satisfy the requirements of this subpart regarding procedures for public hearings.

[40 FR 53346, Nov. 17, 1975, as amended at 60 FR 65414, Dec. 19, 1995]

§ 60.24 Emission standards and compliance schedules.

(a) Each plan shall include emission standards and compliance schedules.

(b)(1) Emission standards shall prescribe allowable rates of emissions except when it is clearly impracticable. Such cases will be identified in the guideline documents issued under § 60.22. Where emission standards prescribing equipment specifications are established, the plan shall, to the degree possible, set forth the emission reductions achievable by implementation of such specifications, and may permit compliance by the use of equipment determined by the State to be equivalent to that prescribed.

(2) Test methods and procedures for determining compliance with the emission standards shall be specified in the plan. Methods other than those specified in appendix A to this part may be specified in the plan if shown to be equivalent or alternative methods as defined in § 60.2 (t) and (u).

(3) Emission standards shall apply to all designated facilities within the State. A plan may contain emission standards adopted by local jurisdictions provided that the standards are enforceable by the State.

(c) Except as provided in paragraph (f) of this section, where the Administrator has determined that a designated pollutant may cause or contribute to endangerment of public health, emission standards shall be no less stringent than the corresponding emission guideline(s) specified in subpart C of this part, and final compliance shall be required as expeditiously as practicable but no later than the compliance times specified in subpart C of this part.

(d) Where the Administrator has determined that a designated pollutant may cause or contribute to endangerment of public welfare but that adverse effects on public health have not been demonstrated, States may balance the emission guidelines, compliance times, and other information provided in the applicable guideline document against other factors of public concern in establishing emission standards, compliance schedules, and variances. Appropriate consideration shall be given to the factors specified in § 60.22(b) and to information presented at the public hearing(s) conducted under § 60.23(c).

(e)(1) Any compliance schedule extending more than 12 months from the date required for submittal of the plan must include legally enforceable increments of progress to achieve compliance for each designated facility or category of facilities. Unless otherwise specified in the applicable subpart, increments of progress must include, where practicable, each increment of progress specified in § 60.21(h) and must include such additional increments of progress as may be necessary to permit close and effective supervision of progress toward final compliance.

(2) A plan may provide that compliance schedules for individual sources or

categories of sources will be formulated after plan submittal. Any such schedule shall be the subject of a public hearing held according to § 60.23 and shall be submitted to the Administrator within 60 days after the date of adoption of the schedule but in no case later than the date prescribed for submittal of the first semiannual report required by § 60.25(e).

(f) Unless otherwise specified in the applicable subpart on a case-by-case basis for particular designated facilities or classes of facilities, States may provide for the application of less stringent emissions standards or longer compliance schedules than those otherwise required by paragraph (c) of this section, provided that the State demonstrates with respect to each such facility (or class of facilities):

(1) Unreasonable cost of control resulting from plant age, location, or basic process design;

(2) Physical impossibility of installing necessary control equipment; or

(3) Other factors specific to the facility (or class of facilities) that make application of a less stringent standard or final compliance time significantly more reasonable.

(g) Nothing in this subpart shall be construed to preclude any State or political subdivision thereof from adopting or enforcing (1) emission standards more stringent than emission guidelines specified in subpart C of this part or in applicable guideline documents or (2) compliance schedules requiring final compliance at earlier times than those specified in subpart C or in applicable guideline documents.

[40 FR 53346, Nov. 17, 1975, as amended at 60 FR 65414, Dec. 19, 1995; 65 FR 76384, Dec. 6, 2000]

§ 60.25 Emission inventories, source surveillance, reports.

(a) Each plan shall include an inventory of all designated facilities, including emission data for the designated pollutants and information related to emissions as specified in appendix D to this part. Such data shall be summarized in the plan, and emission rates of designated pollutants from designated facilities shall be correlated with applicable emission standards. As used in this subpart, ''correlated'' means presented in such a manner as to show the relationship between measured or estimated amounts of emissions and the amounts of such emissions allowable under applicable emission standards.

(b) Each plan shall provide for monitoring the status of compliance with applicable emission standards. Each plan shall, as a minimum, provide for:

(1) Legally enforceable procedures for requiring owners or operators of designated facilities to maintain records and periodically report to the State information on the nature and amount of emissions from such facilities, and/or such other information as may be necessary to enable the State to determine whether such facilities are in compliance with applicable portions of the plan.

(2) Periodic inspection and, when applicable, testing of designated facilities.

(c) Each plan shall provide that information obtained by the State under paragraph (b) of this section shall be correlated with applicable emission standards (see § 60.25(a)) and made available to the general public.

(d) The provisions referred to in paragraphs (b) and (c) of this section shall be specifically identified. Copies of such provisions shall be submitted with the plan unless:

(1) They have been approved as portions of a preceding plan submitted under this subpart or as portions of an implementation plan submitted under section 110 of the Act, and

(2) The State demonstrates:

(i) That the provisions are applicable to the designated pollutant(s) for which the plan is submitted, and

(ii) That the requirements of § 60.26 are met.

(e) The State shall submit reports on progress in plan enforcement to the Administrator on an annual (calendar year) basis, commencing with the first full report period after approval of a plan or after promulgation of a plan by the Administrator. Information required under this paragraph must be included in the annual report required by § 51.321 of this chapter.

(f) Each progress report shall include:

(1) Enforcement actions initiated against designated facilities during the reporting period, under any emission

standard or compliance schedule of the plan.

(2) Identification of the achievement of any increment of progress required by the applicable plan during the reporting period.

(3) Identification of designated facilities that have ceased operation during the reporting period.

(4) Submission of emission inventory data as described in paragraph (a) of this section for designated facilities that were not in operation at the time of plan development but began operation during the reporting period.

(5) Submission of additional data as necessary to update the information submitted under paragraph (a) of this section or in previous progress reports.

(6) Submission of copies of technical reports on all performance testing on designated facilities conducted under paragraph (b)(2) of this section, complete with concurrently recorded process data.

[40 FR 53346, Nov. 17, 1975, as amended at 44 FR 65071, Nov. 9, 1979]

§ 60.26 Legal authority.

(a) Each plan shall show that the State has legal authority to carry out the plan, including authority to:

(1) Adopt emission standards and compliance schedules applicable to designated facilities.

(2) Enforce applicable laws, regulations, standards, and compliance schedules, and seek injunctive relief.

(3) Obtain information necessary to determine whether designated facilities are in compliance with applicable laws, regulations, standards, and compliance schedules, including authority to require recordkeeping and to make inspections and conduct tests of designated facilities.

(4) Require owners or operators of designated facilities to install, maintain, and use emission monitoring devices and to make periodic reports to the State on the nature and amounts of emissions from such facilities; also authority for the State to make such data available to the public as reported and as correlated with applicable emission standards.

(b) The provisions of law or regulations which the State determines provide the authorities required by this section shall be specifically identified. Copies of such laws or regulations shall be submitted with the plan unless:

(1) They have been approved as portions of a preceding plan submitted under this subpart or as portions of an implementation plan submitted under section 110 of the Act, and

(2) The State demonstrates that the laws or regulations are applicable to the designated pollutant(s) for which the plan is submitted.

(c) The plan shall show that the legal authorities specified in this section are available to the State at the time of submission of the plan. Legal authority adequate to meet the requirements of paragraphs (a)(3) and (4) of this section may be delegated to the State under section 114 of the Act.

(d) A State governmental agency other than the State air pollution control agency may be assigned responsibility for carrying out a portion of a plan if the plan demonstrates to the Administrator's satisfaction that the State governmental agency has the legal authority necessary to carry out that portion of the plan.

(e) The State may authorize a local agency to carry out a plan, or portion thereof, within the local agency's jurisdiction if the plan demonstrates to the Administrator's satisfaction that the local agency has the legal authority necessary to implement the plan or portion thereof, and that the authorization does not relieve the State of responsibility under the Act for carrying out the plan or portion thereof.

§ 60.27 Actions by the Administrator.

(a) The Administrator may, whenever he determines necessary, extend the period for submission of any plan or plan revision or portion thereof.

(b) After receipt of a plan or plan revision, the Administrator will propose the plan or revision for approval or disapproval. The Administrator will, within four months after the date required for submission of a plan or plan revision, approve or disapprove such plan or revision or each portion thereof.

(c) The Administrator will, after consideration of any State hearing record, promptly prepare and publish proposed regulations setting forth a plan, or portion thereof, for a State if:

(1) The State fails to submit a plan within the time prescribed;

(2) The State fails to submit a plan revision required by § 60.23(a)(2) within the time prescribed; or

(3) The Administrator disapproves the State plan or plan revision or any portion thereof, as unsatisfactory because the requirements of this subpart have not been met.

(d) The Administrator will, within six months after the date required for submission of a plan or plan revision, promulgate the regulations proposed under paragraph (c) of this section with such modifications as may be appropriate unless, prior to such promulgation, the State has adopted and submitted a plan or plan revision which the Administrator determines to be approvable.

(e)(1) Except as provided in paragraph (e)(2) of this section, regulations proposed and promulgated by the Administrator under this section will prescribe emission standards of the same stringency as the corresponding emission guideline(s) specified in the final guideline document published under § 60.22(a) and will require final compliance with such standards as expeditiously as practicable but no later than the times specified in the guideline document.

(2) Upon application by the owner or operator of a designated facility to which regulations proposed and promulgated under this section will apply, the Administrator may provide for the application of less stringent emission standards or longer compliance schedules than those otherwise required by this section in accordance with the criteria specified in § 60.24(f).

(f) Prior to promulgation of a plan under paragraph (d) of this section, the Administrator will provide the opportunity for at least one public hearing in either:

(1) Each State that failed to hold a public hearing as required by § 60.23(c); or

(2) Washington, DC or an alternate location specified in the FEDERAL REGISTER.

[40 FR 53346, Nov. 17, 1975, as amended at 65 FR 76384, Dec. 6, 2000]

§ 60.28 Plan revisions by the State.

(a) Plan revisions which have the effect of delaying compliance with applicable emission standards or increments of progress or of establishing less stringent emission standards shall be submitted to the Administrator within 60 days after adoption in accordance with the procedures and requirements applicable to development and submission of the original plan.

(b) More stringent emission standards, or orders which have the effect of accelerating compliance, may be submitted to the Administrator as plan revisions in accordance with the procedures and requirements applicable to development and submission of the original plan.

(c) A revision of a plan, or any portion thereof, shall not be considered part of an applicable plan until approved by the Administrator in accordance with this subpart.

§ 60.29 Plan revisions by the Administrator.

After notice and opportunity for public hearing in each affected State, the Administrator may revise any provision of an applicable plan if:

(a) The provision was promulgated by the Administrator, and

(b) The plan, as revised, will be consistent with the Act and with the requirements of this subpart.

Subpart C—Emission Guidelines and Compliance Times

§ 60.30 Scope.

The following subparts contain emission guidelines and compliance times for the control of certain designated pollutants in accordance with section 111(d) and section 129 of the Clean Air Act and subpart B of this part.

(a) Subpart Ca [Reserved]

(b) Subpart Cb—Municipal Waste Combustors.

(c) Subpart Cc—Municipal Solid Waste Landfills.

(d) Subpart Cd—Sulfuric Acid Production Plants.

(e) Subpart Ce—Hospital/Medical/Infectious Waste Incinerators.

[62 FR 48379, Sept. 15, 1997]

§ 60.31 Definitions.

Terms used but not defined in this subpart have the meaning given them in the Act and in subparts A and B of this part.

[42 FR 55797, Oct. 18, 1977]

Subpart Ca [Reserved]

Subpart Cb—Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors That are Constructed on or Before September 20, 1994

SOURCE: 60 FR 65415, Dec. 19, 1995, unless otherwise noted.

§ 60.30b Scope.

This subpart contains emission guidelines and compliance schedules for the control of certain designated pollutants from certain municipal waste combustors in accordance with section 111(d) and section 129 of the Clean Air Act and subpart B of this part. The provisions in these emission guidelines supersede the provisions of § 60.24(f) of subpart B of this part.

§ 60.31b Definitions.

Terms used but not defined in this subpart have the meaning given them in the Clean Air Act and subparts A, B, and Eb of this part.

Municipal waste combustor plant means one or more designated facilities (as defined in § 60.32b) at the same location.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45119, 45125, Aug. 25, 1997]

§ 60.32b Designated facilities.

(a) The designated facility to which these guidelines apply is each municipal waste combustor unit with a combustion capacity greater than 250 tons per day of municipal solid waste for which construction was commenced on or before September 20, 1994.

(b) Any municipal waste combustion unit that is capable of combusting more than 250 tons per day of municipal solid waste and is subject to a federally enforceable permit limiting the maximum amount of municipal solid waste that may be combusted in the unit to less than or equal to 11 tons per day is not subject to this subpart if the owner or operator:

(1) Notifies the EPA Administrator of an exemption claim,

(2) Provides a copy of the federally enforceable permit that limits the firing of municipal solid waste to less than 11 tons per day, and

(3) Keeps records of the amount of municipal solid waste fired on a daily basis.

(c) Physical or operational changes made to an existing municipal waste combustor unit primarily for the purpose of complying with emission guidelines under this subpart are not considered in determining whether the unit is a modified or reconstructed facility under subpart Ea or subpart Eb of this part.

(d) A qualifying small power production facility, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy is not subject to this subpart if the owner or operator of the facility notifies the EPA Administrator of this exemption and provides data documenting that the facility qualifies for this exemption.

(e) A qualifying cogeneration facility, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy (such as heat) that are used for industrial, commercial, heating, or cooling purposes, is not subject to this subpart if the owner or operator of the facility notifies the EPA Administrator of this exemption and provides data documenting that the facility qualifies for this exemption.

(f) Any unit combusting a single-item waste stream of tires is not subject to this subpart if the owner or operator of the unit:

(1) Notifies the EPA Administrator of an exemption claim, and

(2) Provides data documenting that the unit qualifies for this exemption.

(g) Any unit required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(h) Any materials recovery facility (including primary or secondary smelters) that combusts waste for the primary purpose of recovering metals is not subject to this subpart.

(i) Any cofired combustor, as defined under § 60.51b of subpart Eb of this part, that meets the capacity specifications in paragraph (a) of this section is not subject to this subpart if the owner or operator of the cofired combustor:

(1) Notifies the EPA Administrator of an exemption claim,

(2) Provides a copy of the federally enforceable permit (specified in the definition of cofired combustor in this section), and

(3) Keeps a record on a calendar quarter basis of the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor.

(j) Air curtain incinerators, as defined under § 60.51b of subpart Eb of this part, that meet the capacity specifications in paragraph (a) of this section, and that combust a fuel stream composed of 100 percent yard waste are exempt from all provisions of this subpart except the opacity standard under § 60.37b, the testing procedures under § 60.38b, and the reporting and recordkeeping provisions under § 60.39b.

(k) Air curtain incinerators that meet the capacity specifications in paragraph (a) of this section and that combust municipal solid waste other than yard waste are subject to all provisions of this subpart.

(l) Pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit (as defined in § 60.51b) are not subject to this subpart if the owner or operator of the plastics/rubber recycling unit keeps records of the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis; the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis; and the name and address of the purchaser of the feedstocks. The combustion of gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units are not subject to this subpart.

(m) Cement kilns firing municipal solid waste are not subject to this subpart.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45119, 45125, Aug. 25, 1997]

§ 60.33b Emission guidelines for municipal waste combustor metals, acid gases, organics, and nitrogen oxides.

(a) The emission limits for municipal waste combustor metals are specified in paragraphs (a)(1) through (a)(3) of this section.

(1) For approval, a State plan shall include emission limits for particulate matter and opacity at least as protective as the emission limits for particulate matter and opacity specified in paragraphs (a)(1)(i) through (a)(1)(iii) of this section.

(i) The emission limit for particulate matter contained in the gases discharged to the atmosphere from a designated facility is 27 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(ii) [Reserved]

(iii) The emission limit for opacity exhibited by the gases discharged to the atmosphere from a designated facility is 10 percent (6-minute average).

(2) For approval, a State plan shall include emission limits for cadmium and lead at least as protective as the emission limits for cadmium and lead specified in paragraphs (a)(2)(i) through (a)(2)(iv) of this section.

(i) The emission limit for cadmium contained in the gases discharged to the atmosphere from a designated facility is 0.040 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(ii) [Reserved]

(iii) The emission limit for lead contained in the gases discharged to the atmosphere from a designated facility is 0.49 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(iv) [Reserved]

(3) For approval, a State plan shall include emission limits for mercury at least as protective as the emission limits specified in this paragraph. The emission limit for mercury contained in the gases discharged to the atmosphere from a designated facility is 0.080 milligrams per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.

(4) For approval, a State plan shall be submitted by August 25, 1998 and shall include an emission limit for lead at least as protective as the emission limit for lead specified in this paragraph. The emission limit for lead contained in the gases discharged to the atmosphere from a designated facility is 0.44 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(b) The emission limits for municipal waste combustor acid gases, expressed as sulfur dioxide and hydrogen chloride, are specified in paragraphs (b)(1) and (b)(2) of this section.

(1) For approval, a State plan shall include emission limits for sulfur dioxide at least as protective as the emission limits for sulfur dioxide specified in paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(i) The emission limit for sulfur dioxide contained in the gases discharged to the atmosphere from a designated facility is 31 parts per million by volume or 25 percent of the potential sulfur dioxide emission concentration (75-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. Compliance with this emission limit is based on a 24-hour daily geometric mean.

(ii) [Reserved]

(2) For approval, a State plan shall include emission limits for hydrogen chloride at least as protective as the emission limits for hydrogen chloride specified in paragraphs (b)(2)(i) and (b)(2)(ii) of this section.

(i) The emission limit for hydrogen chloride contained in the gases discharged to the atmosphere from a designated facility is 31 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent.

(ii) [Reserved]

(3) For approval, a State plan shall be submitted by August 25, 1998 and shall include emission limits for sulfur dioxide and hydrogen chloride at least as protective as the emission limits specified in paragraphs (b)(3)(i) and (b)(3)(ii) of this section.

(i) The emission limit for sulfur dioxide contained in the gases discharged to the atmosphere from a designated facility is 29 parts per million by volume or 25 percent of the potential sulfur dioxide emission concentration (75-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. Compliance with this emission limit is based on a 24-hour daily geometric mean.

(ii) The emission limit for hydrogen chloride contained in the gases discharged to the atmosphere from a designated facility is 29 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent.

(c) The emission limits for municipal waste combustor organics, expressed as total mass dioxins/furans, are specified in paragraphs (c)(1) and (c)(2) of this section.

(1) For approval, a State plan shall include an emission limit for dioxins/furans contained in the gases discharged to the atmosphere from a designated facility at least as protective as the emission limit for dioxins/furans specified in either paragraph (c)(1)(i) or (c)(1)(ii) of this section, as applicable.

(i) The emission limit for designated facilities that employ an electrostatic precipitator-based emission control system is 60 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(ii) The emission limit for designated facilities that do not employ an electrostatic precipitator-based emission control system is 30 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(2) [Reserved]

(d) For approval, a State plan shall include emission limits for nitrogen oxides at least as protective as the emission limits listed in table 1 of this subpart for designated facilities. Table 1 provides emission limits for the nitrogen oxides concentration level for each type of designated facility.

TABLE 1—NITROGEN OXIDES GUIDELINES FOR DESIGNATED FACILITIES

Municipal waste combustor technology	Nitrogen oxides emission limit (parts per million by volume) [a]
Mass burn waterwall	205
Mass burn rotary waterwall	250
Refuse-derived fuel combustor	250
Fluidized bed combustor	240
Mass burn refractory combustors	no limit

[a] Corrected to 7 percent oxygen, dry basis.

(1) A State plan may allow nitrogen oxides emissions averaging as specified in paragraphs (d)(1)(i) through (d)(1)(v) of this section.

(i) The owner or operator of a municipal waste combustor plant may elect to implement a nitrogen oxides emissions averaging plan for the designated facilities that are located at that plant and that are subject to subpart Cb, except as specified in paragraphs (d)(1)(i)(A) and (d)(1)(i)(B) of this section.

(A) Municipal waste combustor units subject to subpart Ea or Eb cannot be included in the emissions averaging plan.

(B) Mass burn refractory municipal waste combustor units and other municipal waste combustor technologies not listed in paragraph (d)(1)(iii) of this section may not be included in the emissions averaging plan.

(ii) The designated facilities included in the nitrogen oxides emissions averaging plan must be identified in the initial compliance report specified in § 60.59b(f) or in the annual report specified in § 60.59b(g), as applicable, prior to implementing the averaging plan. The designated facilities being included in the averaging plan may be redesignated each calendar year. Partial year redesignation is allowable with State approval.

(iii) To implement the emissions averaging plan, the average daily (24-hour) nitrogen oxides emission concentration level for gases discharged from the designated facilities being included in the emissions averaging plan must be no greater than the levels specified in table 2 of this subpart. Table 2 provides emission limits for the nitrogen oxides concentration level for each type of designated facility.

TABLE 2—NITROGEN OXIDES LIMITS FOR EXISTING DESIGNATED FACILITIES INCLUDED IN AN EMISSIONS AVERAGING PLAN AT A MUNICPIAL WASTE COMBUSTOR PLANT[a]

Municipal waste combustor technology	Nitrogen oxides emission limit (parts per million by volume)[b]
Mass burn waterwall	185
Mass burn rotary waterwall	220
Refuse-derived fuel combustor	230
Fluidized bed combustor	220

[a] Mass burn refractory municipal waste combustors and other MWC technologies not listed above may not be included in an emissions averaging plan.

[b] Corrected to 7 percent oxygen, dry basis.

(iv) Under the emissions averaging plan, the average daily nitrogen oxides emissions specified in paragraph (d)(1)(iii) of this section shall be calculated using equation (1). Designated facilities that are offline shall not be included in calculating the average daily nitrogen oxides emission level.

$$NO_{X_{24-hr}} = \frac{\sum_{i=1}^{h}\left(NO_{X_i}\right)\left(S_i\right)}{\sum_{i=1}^{h}\left(S_i\right)} \qquad (1)$$

where:

$NO_{X\ 24\text{-}hr}$=24-hr daily average nitrogen oxides emission concentration level for the emissions averaging plan (parts per million by volume corrected to 7 percent oxygen).

$NO_{X\ i\text{-}hr}$=24-hr daily average nitrogen oxides emission concentration level for designated facility i (parts per million by volume, corrected to 7 percent oxygen), calculated according to the procedures in § 60.58b(h) of this subpart.

S_i=maximum demonstrated municipal waste combustor unit load for designated facility i (pounds per hour steam or feedwater flow as determined in the most recent dioxin/furan performance test).

h=total number of designated facilities being included in the daily emissions average.

(v) For any day in which any designated facility included in the emissions averaging plan is offline, the owner or operator of the municipal waste combustor plant must demonstrate compliance according to either paragraph (d)(1)(v)(A) of this section or both paragraphs (d)(1)(v)(B) and (d)(1)(v)(C) of this section.

(A) Compliance with the applicable limits specified in table 2 of this subpart shall be demonstrated using the averaging procedure specified in paragraph (d)(1)(iv) of this section for the designated facilities that are online.

(B) For each of the designated facilities included in the emissions averaging plan, the nitrogen oxides emissions on a daily average basis shall be calculated and shall be equal to or less than the maximum daily nitrogen oxides emission level achieved by that designated facility on any of the days during which the emissions averaging plan was achieved with all designated facilities online during the most recent calendar quarter. The requirements of this paragraph do not apply during the first quarter of operation under the emissions averaging plan.

(C) The average nitrogen oxides emissions (kilograms per day) calculated according to paragraph (d)(1)(v)(C)(*2*) of this section shall not exceed the average nitrogen oxides emissions (kilograms per day) calculated according to paragraph (d)(1)(v)(C)(*1*) of this section.

(*1*) For all days during which the emissions averaging plan was implemented and achieved and during which all designated facilities were online, the average nitrogen oxides emissions shall be calculated. The average nitrogen oxides emissions (kilograms per day) shall be calculated on a calendar year basis according to paragraphs (d)(1)(v)(C)(*1*)(*i*) through (d)(1)(v)(C)(*1*)(*iii*) of this section.

(*i*) For each designated facility included in the emissions averaging plan, the daily amount of nitrogen oxides emitted (kilograms per day) shall be calculated based on the hourly nitrogen oxides data required under § 60.38b(a) and specified under § 60.58b(h)(5) of subpart Eb of this part, the flue gas flow rate determined using table 19–1 of EPA Reference Method 19 or a State-approved method, and the hourly average steam or feedwater flow rate.

(*ii*) The daily total nitrogen oxides emissions shall be calculated as the sum of the daily nitrogen oxides emissions from each designated facility calculated under paragraph (d)(1)(v)(C)(*1*)(*i*) of this section.

(*iii*) The average nitrogen oxides emissions (kilograms per day) on a calendar year basis shall be calculated as the sum of all daily total nitrogen oxides emissions calculated under paragraph (d)(1)(v)(C)(*1*)(*ii*) of this section divided by the number of calendar days for which a daily total was calculated.

(*2*) For all days during which one or more of the designated facilities under the emissions averaging plan was offline, the average nitrogen oxides emissions shall be calculated. The average nitrogen oxides emissions (kilograms per day) shall be calculated on a calendar year basis according to paragraphs (d)(1)(v)(C)(*2*)(*i*) through (d)(1)(v)(C)(*2*)(*iii*) of this section.

(*i*) For each designated facility included in the emissions averaging plan, the daily amount of nitrogen oxides emitted (kilograms per day) shall be calculated based on the hourly nitrogen oxides data required under § 60.38b(a) and specified under § 60.58b(h)(5) of subpart Eb of this part, the flue gas flow rate determined using table 19–1 of EPA Reference Method 19 or a State-approved method, and the hourly average steam or feedwater flow rate.

(*ii*) The daily total nitrogen oxides emissions shall be calculated as the sum of the daily nitrogen oxides emissions from each designated facility calculated under paragraph (d)(1)(v)(C)(*2*)(*i*) of this section.

(*iii*) The average nitrogen oxides emissions (kilograms per day) on a calendar year basis shall be calculated as the sum of all daily total nitrogen oxides emissions calculated under paragraph (d)(1)(v)(C)(*2*)(*ii*) of this section divided by the number of calendar days for which a daily total was calculated.

(2) A State plan may establish a program to allow owners or operators of municipal waste combustor plants to engage in trading of nitrogen oxides emission credits. A trading program must be approved by the Administrator before implementation.

(3) For approval, a State plan shall be submitted by August 25, 1998 and shall include emission limits for nitrogen oxides from fluidized bed combustors at least as protective as the emission limits listed in paragraphs (d)(3)(i) and (d)(3)(ii) of this section.

(i) The emission limit for nitrogen oxides contained in the gases discharged to the atmosphere from a designated facility that is a fluidized bed combustor is 180 parts per million by volume, corrected to 7 percent oxygen.

(ii) If a State plan allows nitrogen oxides emissions averaging as specified in paragraphs (d)(1)(i) through (d)(1)(v) of this section, the emission limit for nitrogen oxides contained in the gases discharged to the atmosphere from a designated facility that is a fluidized bed combustor is 165 parts per million by volume, corrected to 7 percent oxygen.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45119, 45125, Aug. 25, 1997]

§ 60.34b Emission guidelines for municipal waste combustor operating practices.

(a) For approval, a State plan shall include emission limits for carbon monoxide at least as protective as the emission limits for carbon monoxide listed in table 3 of this subpart. Table 3 provides emission limits for the carbon monoxide concentration level for each type of designated facility.

TABLE 3.—MUNICIPAL WASTE COMBUSTOR OPERATING GUIDELINES

Municipal waste combustor technology	Carbon monoxide emissions level (parts per million by volume)[a]	Averaging time (hrs)[b]
Mass burn waterwall	100	4
Mass burn refractory	100	4
Mass burn rotary refractory	100	24
Mass burn rotary waterwall	250	24
Modular starved air	50	4
Modular excess air	50	4
Refuse-derived fuel stoker	200	24
Buddling fluidized bed combustor	100	4
Circulating fluidized bed combustor	100	4
Pulverized coal/refuse-derived fuel mixed fuel-fired combustor	150	4
Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor	200	24

[a] Measured at the combustor outlet in conjunction with a measurement of oxygen concentration, corrected to 7 percent oxygen, dry basis. Calculated as an arithmetic average.

[b] Averaging times are 4-hour or 24-hour block averages.

(b) For approval, a State plan shall include requirements for municipal waste combustor operating practices at least as protective as those requirements listed in § 60.53b(b) and (c) of subpart Eb of this part.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45120, 45125, Aug. 25, 1997]

§ 60.35b Emission guidelines for municipal waste combustor operator training and certification.

For approval, a State plan shall include requirements for designated facilities for municipal waste combustor operator training and certification at least as protective as those requirements listed in § 60.54b of subpart Eb of this part. The State plan shall require compliance with these requirements according to the schedule specified in § 60.39b(c)(4).

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45120, Aug. 25, 1997]

§ 60.36b Emission guidelines for municipal waste combustor fugitive ash emissions.

For approval, a State plan shall include requirements for municipal waste combustor fugitive ash emissions at least as protective as those requirements listed in §60.55b of subpart Eb of this part.

§60.37b Emission guidelines for air curtain incinerators.

For approval, a State plan shall include emission limits for opacity for air curtain incinerators at least as protective as those listed in §60.56b of subpart Eb of this part.

§60.38b Compliance and performance testing.

(a) For approval, a State plan shall include the performance testing methods listed in §60.58b of subpart Eb of this part, as applicable, except as provided for under §60.24(b)(2) of subpart B of this part and paragraphs (b) and (c) of this section.

(b) For approval, a State plan shall include for designated facilities the alternative performance testing schedule for dioxins/furans specified in §60.58b(g)(5)(iii) of subpart Eb of this part, as applicable, for those designated facilities that achieve a dioxin/furan emission level less than or equal to 15 nanograms per dry standard cubic meter total mass, corrected to 7 percent oxygen.

(c) [Reserved]

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45120, Aug. 25, 1997]

§60.39b Reporting and recordkeeping guidelines and compliance schedules.

(a) For approval, a State plan shall include the reporting and recordkeeping provisions listed in §60.59b of subpart Eb of this part, as applicable, except for the siting requirements under §60.59b(a), (b)(5), and (d)(11) of subpart Eb of this part.

(b) Not later than December 19, 1996, each State in which a designated facility is located shall submit to the EPA Administrator a plan to implement and enforce all provisions of this subpart except those specified under §60.33b (a)(4), (b)(3), and (d)(3). The compliance schedule specified in this paragraph is in accordance with section 129(b)(2) of the Act and supersedes the compliance schedule provided in §60.23(a)(1) of subpart B of this part.

(c) For approval, a State plan shall include the compliance schedules specified in paragraphs (c)(1) through (c)(5) of this section.

(1) A State plan shall allow designated facilities to comply with all requirements of a State plan (or close) within 1 year after approval of the State plan, except as provided by paragraph (c)(1)(i) and (c)(1)(ii) of this section.

(i) A State plan that allows designated facilities more than 1 year but less than 3 years following the date of issuance of a revised construction or operation permit, if a permit modification is required, or more than 1 year but less than 3 years following approval of the State plan, if a permit modification is not required, shall include measurable and enforceable incremental steps of progress toward compliance. Suggested measurable and enforceable activities are specified in paragraphs (c)(1)(i)(A) through (c)(1)(i)(J) of this section.

(A) Date for obtaining services of an architectural and engineering firm regarding the air pollution control device(s);

(B) Date for obtaining design drawings of the air pollution control device(s);

(C) Date for submittal of permit modifications, if necessary;

(D) Date for submittal of the final control plan to the Administrator. [§60.21 (h)(1) of subpart B of this part.];

(E) Date for ordering the air pollution control device(s);

(F) Date for obtaining the major components of the air pollution control device(s);

(G) Date for initiation of site preparation for installation of the air pollution control device(s);

(H) Date for initiation of installation of the air pollution control device(s);

(I) Date for initial startup of the air pollution control device(s); and

(J) Date for initial performance test(s) of the air pollution control device(s).

(ii) A State plan that allows designated facilities more than 1 year but up to 3 years after State plan approval to close shall require a closure agreement. The closure agreement must include the date of plant closure.

(2) If the State plan requirements for a designated facility include a compliance schedule longer than 1 year after approval of the State plan in accordance with paragraph (c)(1)(i) or (c)(1)(ii) of this section, the State plan submittal (for approval) shall include performance test results for dioxin/furan emissions for each designated facility that has a compliance schedule longer than 1 year following the approval of the State plan, and the performance test results shall have been conducted during or after 1990. The performance test shall be conducted according to the procedures in § 60.38b.

(3) [Reserved]

(4) A State plan shall require compliance with the municipal waste combustor operator training and certification requirements under § 60.35b according to the schedule specified in paragraphs (c)(4)(i) through (c)(4)(iii) of this section.

(i) [Reserved]

(ii) For designated facilities, the State plan shall require compliance with the municipal waste combustor operator training and certification requirements specified under § 60.54b (a) through (c) of subpart Eb of this part by the date 6 months after the date of startup or 12 months after State plan approval, whichever is later.

(iii) For designated facilities, the State plan shall require compliance with the requirements specified in § 60.54b (d), (f), and (g) of subpart Eb of this part no later than 6 months after startup or 12 months after State plan approval, whichever is later.

(A) The requirement specified in § 60.54b(d) of subpart Eb of this part does not apply to chief facility operators, shift supervisors, and control room operators who have obtained full certification from the American Society of Mechanical Engineers on or before the date of State plan approval.

(B) The owner or operator of a designated facility may request that the EPA Administrator waive the requirement specified in § 60.54b(d) of subpart Eb of this part for chief facility operators, shift supervisors, and control room operators who have obtained provisional certification from the American Society of Mechanical Engineers on or before the date of State plan approval.

(C) The initial training requirements specified in § 60.54b(f)(1) of subpart Eb of this part shall be completed no later than the date specified in paragraph (c)(4)(iii)(C)(*1*), (c)(4)(iii)(C)(*2*), or (c)(4)(iii)(C)(*3*), of this section whichever is later.

(*1*) The date 6 months after the date of startup of the affected facility;

(*2*) Twelve months after State plan approval; or

(*3*) The date prior to the day when the person assumes responsibilities affecting municipal waste combustor unit operation.

(5) A State plan shall require all designated facilities for which construction, modification, or reconstruction is commenced after June 26, 1987 to comply with the emission limit for mercury specified in § 60.33b(a)(3) and the emission limit for dioxins/furans specified in § 60.33b(c)(1) within 1 year following issuance of a revised construction or operation permit, if a permit modification is required, or within 1 year following approval of the State plan, whichever is later.

(d) In the event no plan for implementing the emission guidelines is approved by EPA, all designated facilities meeting the applicability requirements under § 60.32b shall be in compliance with all of the guidelines, except those specified under § 60.33b (a)(4), (b)(3), and (d)(3), no later than December 19, 2000.

(e) Not later than August 25, 1998, each State in which a designated facility is operating shall submit to the EPA Administrator a plan to implement and enforce all provisions of this subpart specified in § 60.33b (a)(4), (b)(3), and (d)(3).

(f) In the event no plan for implementing the emission guidelines is approved by EPA, all designated facilities meeting the applicability requirements under § 60.32b shall be in compliance with all of the guidelines, including those specified under § 60.33b (a)(4), (b)(3), and (d)(3), no later than August 26, 2002.

[60 FR 65415, Dec. 19, 1995, as amended at 62 FR 45120, 45125, Aug. 25, 1997]

Subpart Cc—Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills

SOURCE: 61 FR 9919, Mar. 12, 1996, unless otherwise noted.

§ 60.30c Scope.

This subpart contains emission guidelines and compliance times for the control of certain designated pollutants from certain designated municipal solid waste landfills in accordance with section 111(d) of the Act and subpart B.

§ 60.31c Definitions.

Terms used but not defined in this subpart have the meaning given them in the Act and in subparts A, B, and WWW of this part.

Municipal solid waste landfill or *MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill or a lateral expansion.

§ 60.32c Designated facilities.

(a) The designated facility to which the guidelines apply is each existing MSW landfill for which construction, reconstruction or modification was commenced before May 30, 1991.

(b) Physical or operational changes made to an existing MSW landfill solely to comply with an emission guideline are not considered a modification or reconstruction and would not subject an existing MSW landfill to the requirements of subpart WWW [see § 60.750 of Subpart WWW].

(c) For purposes of obtaining an operating permit under title V of the Act, the owner or operator of a MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under part 70 or 71 of this chapter, unless the landfill is otherwise subject to either part 70 or 71. For purposes of submitting a timely application for an operating permit under part 70 or 71, the owner or operator of a MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters on the effective date of EPA approval of the State's program under section 111(d) of the Act, and not otherwise subject to either part 70 or 71, becomes subject to the requirements of §§ 70.5(a)(1)(i) or 71.5(a)(1)(i) of this chapter 90 days after the effective date of such 111(d) program approval, even if the design capacity report is submitted earlier.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met.

(1) The landfill was never subject to the requirement for a control system under § 60.33c(c) of this subpart; or

(2) The owner or operator meets the conditions for control system removal specified in § 60.752(b)(2)(v) of subpart WWW.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

§ 60.33c Emission guidelines for municipal solid waste landfill emissions.

(a) For approval, a State plan shall include control of MSW landfill emissions at each MSW landfill meeting the following three conditions:

(1) The landfill has accepted waste at any time since November 8, 1987, or has additional design capacity available for future waste deposition;

(2) The landfill has a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions

shall be documented and submitted with the design capacity report; and

(3) The landfill has a nonmethane organic compound emission rate of 50 megagrams per year or more.

(b) For approval, a State plan shall include the installation of a collection and control system meeting the conditions provided in § 60.752(b)(2)(ii) of this part at each MSW landfill meeting the conditions in paragraph (a) of this section. The State plan shall include a process for State review and approval of the site-specific design plans for the gas collection and control system(s).

(c) For approval, a State plan shall include provisions for the control of collected MSW landfill emissions through the use of control devices meeting the requirements of paragraph (c)(1), (2), or (3) of this section, except as provided in § 60.24.

(1) An open flare designed and operated in accordance with the parameters established in § 60.18; or

(2) A control system designed and operated to reduce NMOC by 98 weight percent; or

(3) An enclosed combustor designed and operated to reduce the outlet NMOC concentration to 20 parts per million as hexane by volume, dry basis at 3 percent oxygen, or less.

(d) For approval, a State plan shall require each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume to submit an initial design capacity report to the Administrator as provided in § 60.757(a)(2) of subpart WWW by the date specified in § 60.35c of this subpart. The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report shall fulfill the requirements of this subpart except as provided in paragraph (d)(1) and (d)(2) of this section.

(1) The owner or operator shall submit an amended design capacity report as provided in § 60.757(a)(3) of subpart WWW. [Guidance: Note that if the design capacity increase is the result of a modification, as defined in § 60.751 of subpart WWW, that was commenced on or after May 30, 1991, the landfill will become subject to subpart WWW instead of this subpart. If the design capacity increase is the result of a change in operating practices, density, or some other change that is not a modification, the landfill remains subject to this subpart.]

(2) When an increase in the maximum design capacity of a landfill with an initial design capacity less than 2.5 million megagrams or 2.5 million cubic meters results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with paragraph (e) of this section.

(e) For approval, a State plan shall require each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters to either install a collection and control system as provided in paragraph (b) of this section and § 60.752(b)(2) of subpart WWW or calculate an initial NMOC emission rate for the landfill using the procedures specified in § 60.34c of this subpart and § 60.754 of subpart WWW. The NMOC emission rate shall be recalculated annually, except as provided in § 60.757(b)(1)(ii) of subpart WWW.

(1) If the calculated NMOC emission rate is less than 50 megagrams per year, the owner or operator shall:

(i) Submit an annual emission report, except as provided for in § 60.757(b)(1)(ii); and

(ii) Recalculate the NMOC emission rate annually using the procedures specified in § 60.754(a)(1) of subpart WWW until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed.

(2)(i) If the NMOC emission rate, upon initial calculation or annual recalculation required in paragraph (e)(1)(ii) of this section, is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system as provided in paragraph (b) of this section and § 60.752(b)(2) of subpart WWW.

(ii) If the landfill is permanently closed, a closure notification shall be submitted to the Administrator as provided in § 60.35c of this subpart and § 60.757(d) of subpart WWW.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9261, Feb. 24, 1999]

§ 60.34c Test methods and procedures.

For approval, a State plan shall include provisions for: the calculation of the landfill NMOC emission rate listed in § 60.754, as applicable, to determine whether the landfill meets the condition in § 60.33c(a)(3); the operational standards in § 60.753; the compliance provisions in § 60.755; and the monitoring provisions in § 60.756.

§ 60.35c Reporting and recordkeeping guidelines.

For approval, a State plan shall include the recordkeeping and reporting provisions listed in §§ 60.757 and 60.758, as applicable, except as provided under § 60.24.

(a) For existing MSW landfills subject to this subpart the initial design capacity report shall be submitted no later than 90 days after the effective date of EPA approval of the State's plan under section 111(d) of the Act.

(b) For existing MSW landfills covered by this subpart with a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the initial NMOC emission rate report shall be submitted no later than 90 days after the effective date of EPA approval of the State's plan under section 111(d) of the Act.

[61 FR 9919, Mar. 12, 1996, as amended at 64 FR 9262, Feb. 24, 1999]

§ 60.36c Compliance times.

(a) Except as provided for under paragraph (b) of this section, planning, awarding of contracts, and installation of MSW landfill air emission collection and control equipment capable of meeting the emission guidelines established under § 60.33c shall be accomplished within 30 months after the date the initial NMOC emission rate report shows NMOC emissions equal or exceed 50 megagrams per year.

(b) For each existing MSW landfill meeting the conditions in § 60.33c(a)(1) and § 60.33c(a)(2) whose NMOC emission rate is less than 50 megagrams per year on the effective date of the State emission standard, installation of collection and control systems capable of meeting emission guidelines in § 60.33c shall be accomplished within 30 months of the date when the condition in § 60.33c(a)(3) is met (i.e., the date of the first annual nonmethane organic compounds emission rate which equals or exceeds 50 megagrams per year).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

Subpart Cd—Emissions Guidelines and Compliance Times for Sulfuric Acid Production Units

SOURCE: 60 FR 65414, Dec. 19, 1995, unless otherwise noted.

§ 60.30d Designated facilities.

Sulfuric acid production units. The designated facility to which §§ 60.31d and 60.32d apply is each existing ''sulfuric acid production unit'' as defined in § 60.81(a) of subpart H of this part.

§ 60.31d Emissions guidelines.

Sulfuric acid production units. The emission guideline for designated facilities is 0.25 grams sulfuric acid mist (as measured by EPA Reference Method 8 of appendix A of this part) per kilogram (0.5 pounds per ton) of sulfuric acid produced, the production being expressed as 100 percent sulfuric acid.

§ 60.32d Compliance times.

Sulfuric acid production units. Planning, awarding of contracts, and installation of equipment capable of attaining the level of the emission guideline established under § 60.31d can be accomplished within 17 months after the effective date of a State emission standard for sulfuric acid mist.

Subpart Ce—Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators

SOURCE: 62 FR 48379, Sept. 15, 1997, unless otherwise noted.

§ 60.30e Scope.

This subpart contains emission guidelines and compliance times for the control of certain designated pollutants from hospital/medical/infectious waste incinerator(s) (HMIWI) in accordance with sections 111 and 129 of the Clean Air Act and subpart B of this part. The provisions in these emission guidelines supersede the provisions of § 60.24(f) of subpart B of this part.

§ 60.31e Definitions.

Terms used but not defined in this subpart have the meaning given them in the Clean Air Act and in subparts A, B, and Ec of this part.

Standard Metropolitan Statistical Area or *SMSA* means any areas listed in OMB Bulletin No. 93–17 entitled ''Revised Statistical Definitions for Metropolitan Areas'' dated June 30, 1993 (incorporated by reference, see § 60.17).

§ 60.32e Designated facilities.

(a) Except as provided in paragraphs (b) through (h) of this section, the designated facility to which the guidelines apply is each individual HMIWI for which construction was commenced on or before June 20, 1996.

(b) A combustor is not subject to this subpart during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in § 60.51c) is burned, provided the owner or operator of the combustor:

(1) Notifies the Administrator of an exemption claim; and

(2) Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is burned.

(c) Any co-fired combustor (defined in § 60.51c) is not subject to this subpart if the owner or operator of the co-fired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels and/or wastes to be combusted; and

(3) Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

(d) Any combustor required to have a permit under Section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(e) Any combustor which meets the applicability requirements under subpart Cb, Ea, or Eb of this part (standards or guidelines for certain municipal waste combustors) is not subject to this subpart.

(f) Any pyrolysis unit (defined in § 60.51c) is not subject to this subpart.

(g) Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this subpart.

(h) Physical or operational changes made to an existing HMIWI unit solely for the purpose of complying with emission guidelines under this subpart are not considered a modification and do not result in an existing HMIWI unit becoming subject to the provisions of subpart Ec (see § 60.50c).

(i) Beginning September 15, 2000, or on the effective date of an EPA approved operating permit program under Clean Air Act title V and the implementing regulations under 40 CFR part 70 in the State in which the unit is located, whichever date is later, designated facilities subject to this subpart shall operate pursuant to a permit issued under the EPA-approved operating permit program.

§ 60.33e Emission guidelines.

(a) For approval, a State plan shall include the requirements for emission limits at least as protective as those requirements listed in Table 1 of this subpart, except as provided for in paragraph (b) of this section.

(b) For approval, a State plan shall include the requirements for emission limits at least as protective as those requirements listed in Table 2 of this subpart for any small HMIWI which is located more than 50 miles from the boundary of the nearest Standard Metropolitan Statistical Area (defined in § 60.31e) and which burns less than 2,000 pounds per week of hospital waste and medical/infectious waste. The 2,000 lb/week limitation does not apply during performance tests.

(c) For approval, a State plan shall include the requirements for stack opacity at least as protective as §60.52c(b) of subpart Ec of this part.

§60.34e Operator training and qualification guidelines.

For approval, a State plan shall include the requirements for operator training and qualification at least as protective as those requirements listed in §60.53c of subpart Ec of this part. The State plan shall require compliance with these requirements according to the schedule specified in §60.39e(e).

§60.35e Waste management guidelines.

For approval, a State plan shall include the requirements for a waste management plan at least as protective as those requirements listed in §60.55c of subpart Ec of this part.

§60.36e Inspection guidelines.

(a) For approval, a State plan shall require that each small HMIWI subject to the emission limits under §60.33e(b) undergo an initial equipment inspection that is at least as protective as the following within 1 year following approval of the State plan:

(1) At a minimum, an inspection shall include the following:

(i) Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation; clean pilot flame sensor, as necessary;

(ii) Ensure proper adjustment of primary and secondary chamber combustion air, and adjust as necessary;

(iii) Inspect hinges and door latches, and lubricate as necessary;

(iv) Inspect dampers, fans, and blowers for proper operation;

(v) Inspect HMIWI door and door gaskets for proper sealing;

(vi) Inspect motors for proper operation;

(vii) Inspect primary chamber refractory lining; clean and repair/replace lining as necessary;

(viii) Inspect incinerator shell for corrosion and/or hot spots;

(ix) Inspect secondary/tertiary chamber and stack, clean as necessary;

(x) Inspect mechanical loader, including limit switches, for proper operation, if applicable;

(xi) Visually inspect waste bed (grates), and repair/seal, as appropriate;

(xii) For the burn cycle that follows the inspection, document that the incinerator is operating properly and make any necessary adjustments;

(xiii) Inspect air pollution control device(s) for proper operation, if applicable;

(xiv) Inspect waste heat boiler systems to ensure proper operation, if applicable;

(xv) Inspect bypass stack components;

(xvi) Ensure proper calibration of thermocouples, sorbent feed systems and any other monitoring equipment; and

(xvii) Generally observe that the equipment is maintained in good operating condition.

(2) Within 10 operating days following an equipment inspection all necessary repairs shall be completed unless the owner or operator obtains written approval from the State agency establishing a date whereby all necessary repairs of the designated facility shall be completed.

(b) For approval, a State plan shall require that each small HMIWI subject to the emission limits under §60.33e(b) undergo an equipment inspection annually (no more than 12 months following the previous annual equipment inspection), as outlined in paragraphs (a)(1) and (a)(2) of this section.

§60.37e Compliance, performance testing, and monitoring guidelines.

(a) Except as provided in paragraph (b) of this section, for approval, a State plan shall include the requirements for compliance and performance testing listed in §60.56c of subpart Ec of this part, excluding the fugitive emissions testing requirements under §60.56c(b)(12) and (c)(3).

(b) For approval, a State plan shall require any small HMIWI subject to the emission limits under §60.33e(b) to meet the following compliance and performance testing requirements:

(1) Conduct the performance testing requirements in §60.56c(a), (b)(1) through (b)(9), (b)(11) (Hg only), and (c)(1) of subpart Ec of this part. The 2,000 lb/week limitation under

§ 60.33e(b) does not apply during performance tests.

(2) Establish maximum charge rate and minimum secondary chamber temperature as site-specific operating parameters during the initial performance test to determine compliance with applicable emission limits.

(3) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, ensure that the designated facility does not operate above the maximum charge rate or below the minimum secondary chamber temperature measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times except during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during performance tests. Operation above the maximum charge rate or below the minimum secondary chamber temperature shall constitute a violation of the established operating parameter(s).

(4) Except as provided in paragraph (b)(5) of this section, operation of the designated facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the PM, CO, and dioxin/furan emission limits.

(5) The owner or operator of a designated facility may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s) to demonstrate that the designated facility is not in violation of the applicable emission limit(s). Repeat performance tests conducted pursuant to this paragraph must be conducted using the identical operating parameters that indicated a violation under paragraph (b)(4) of this section.

(c) For approval, a State plan shall include the requirements for monitoring listed in § 60.57c of subpart Ec of this part, except as provided for under paragraph (d) of this section.

(d) For approval, a State plan shall include requirements for any small HMIWI subject to the emission limits under § 60.33e(b) to meet the following monitoring requirements:

(1) Install, calibrate (to manufacturers' specifications), maintain, and operate a device for measuring and recording the temperature of the secondary chamber on a continuous basis, the output of which shall be recorded, at a minimum, once every minute throughout operation.

(2) Install, calibrate (to manufacturers' specifications), maintain, and operate a device which automatically measures and records the date, time, and weight of each charge fed into the HMIWI.

(3) The owner or operator of a designated facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day and for 90 percent of the operating hours per calendar quarter that the designated facility is combusting hospital waste and/or medical/infectious waste.

§ 60.38e Reporting and recordkeeping guidelines.

(a) For approval, a State plan shall include the reporting and recordkeeping requirements listed in § 60.58c(b), (c), (d), (e), and (f) of subpart Ec of this part, excluding § 60.58c(b)(2)(ii) (fugitive emissions) and (b)(7) (siting).

(b) For approval, a State plan shall require the owner or operator of each small HMIWI subject to the emission limits under § 60.33e(b) to:

(1) Maintain records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the State regulatory agency; and

(2) Submit an annual report containing information recorded under paragraph (b)(1) of this section no later than 60 days following the year in which data were collected. Subsequent reports shall be sent no later than 12 calendar months following the previous report (once the unit is subject to permitting requirements under Title V of the Act, the owner or operator must submit these reports semiannually).

The report shall be signed by the facilities manager.

§60.39e Compliance times.

(a) Not later than September 15, 1998, each State in which a designated facility is operating shall submit to the Administrator a plan to implement and enforce the emission guidelines.

(b) Except as provided in paragraphs (c) and (d) of this section, State plans shall provide that designated facilities comply with all requirements of the State plan on or before the date 1 year after EPA approval of the State plan, regardless of whether a designated facility is identified in the State plan inventory required by §60.25(a) of subpart B of this part.

(c) State plans that specify measurable and enforceable incremental steps of progress towards compliance for designated facilities planning to install the necessary air pollution control equipment may allow compliance on or before the date 3 years after EPA approval of the State plan (but not later than the September 16, 2002. Suggested measurable and enforceable activities to be included in State plans are:

(1) Date for submitting a petition for site specific operating parameters under §60.56c(i) of subpart Ec of this part.

(2) Date for obtaining services of an architectural and engineering firm regarding the air pollution control device(s);

(3) Date for obtaining design drawings of the air pollution control device(s);

(4) Date for ordering the air pollution control device(s);

(5) Date for obtaining the major components of the air pollution control device(s);

(6) Date for initiation of site preparation for installation of the air pollution control device(s);

(7) Date for initiation of installation of the air pollution control device(s);

(8) Date for initial startup of the air pollution control device(s); and

(9) Date for initial compliance test(s) of the air pollution control device(s).

(d) State plans that include provisions allowing designated facilities to petition the State for extensions beyond the compliance times required in paragraph (b) of this section shall:

(1) Require that the designated facility requesting an extension submit the following information in time to allow the State adequate time to grant or deny the extension within 1 year after EPA approval of the State plan:

(i) Documentation of the analyses undertaken to support the need for an extension, including an explanation of why up to 3 years after EPA approval of the State plan is sufficient time to comply with the State plan while 1 year after EPA approval of the State plan is not sufficient. The documentation shall also include an evaluation of the option to transport the waste offsite to a commercial medical waste treatment and disposal facility on a temporary or permanent basis; and

(ii) Documentation of measurable and enforceable incremental steps of progress to be taken towards compliance with the emission guidelines.

(2) Include procedures for granting or denying the extension; and

(3) If an extension is granted, require compliance with the emission guidelines on or before the date 3 years after EPA approval of the State plan (but not later than September 16, 2002.

(e) For approval, a State plan shall require compliance with §60.34e—Operator training and qualification guidelines and §60.36e—Inspection guidelines by the date 1 year after EPA approval of a State plan.

(f) The Administrator shall develop, implement, and enforce a plan for existing HMIWI located in any State that has not submitted an approvable plan within date 2 years after September 15, 1997. Such plans shall ensure that each designated facility is in compliance with the provisions of this subpart no later than date 5 years after September 15, 1997.

TABLE 1 TO SUBPART CE—EMISSION LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits		
		HMIWI size		
		Small	Medium	Large
Particulate matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot).	115 (0.05)	69 (0.03)	34 (0.015).
Carbon monoxide	Parts per million by volume	40	40	40.
Dioxins/furans	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet).	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0).
Hydrogen chloride	Parts per million by volume or percent reduction	100 or 93%	100 or 93%	100 or 93%.
Sulfur dioxide	Parts per million by volume	55	55	55.
Nitrogen oxides	Parts per million by volume	250	250	250.
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	1.2 (0.52) or 70%	1.2 (0.52) or 70%	1.2 (0.52) or 70%.
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	0.16 (0.07) or 65%	0.16 (0.07) or 65%..	
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	0.55 (0.24) or 85%	0.55 (0.24) or 85%	0.55 (0.24) or 85%.

Table 2 to Subpart Ce—Emissions Limits for Small HMIWI Which Meet the Criteria Under § 60.33e(b)

Pollutant	Units (7 percent oxygen, dry basis)	HMIWI emission limits
Particulate matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot).	197 (0.086).
Carbon monoxide	Parts per million by volume	40.
Dioxins/furans	nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet).	800 (350) or 15 (6.6).
Hydrogen chloride	Parts per million by volume	3100.
Sulfur dioxide	Parts per million by volume	55.
Nitrogen oxides	Parts per million by volume	250.
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet).	10 (4.4).
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet).	4 (1.7).
Mercury	Milligrams per dry standard cubic meter (grains per thousands dry standard cubic feet).	7.5 (3.3).

Subpart D—Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971

§ 60.40 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each fossil-fuel-fired steam generating unit of more than 73 megawatts heat input rate (250 million Btu per hour).

(2) Each fossil-fuel and wood-residue-fired steam generating unit capable of firing fossil fuel at a heat input rate of more than 73 megawatts (250 million Btu per hour).

(b) Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels as defined in this subpart, shall not bring that unit under the applicability of this subpart.

(c) Except as provided in paragraph (d) of this section, any facility under paragraph (a) of this section that commenced construction or modification after August 17, 1971, is subject to the requirements of this subpart.

(d) The requirements of §§ 60.44 (a)(4), (a)(5), (b) and (d), and 60.45(f)(4)(vi) are applicable to lignite-fired steam generating units that commenced construction or modification after December 22, 1976.

(e) Any facility covered under subpart Da is not covered under this subpart.

[42 FR 37936, July 25, 1977, as amended at 43 FR 9278, Mar. 7, 1978; 44 FR 33612, June 17, 1979]

§ 60.41 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, and in subpart A of this part.

(a) *Fossil-fuel fired steam generating unit* means a furnace or boiler used in the process of burning fossil fuel for the purpose of producing steam by heat transfer.

(b) *Fossil fuel* means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

(c) *Coal refuse* means waste-products of coal mining, cleaning, and coal preparation operations (e.g. culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material.

(d) *Fossil fuel and wood residue-fired steam generating unit* means a furnace or boiler used in the process of burning fossil fuel and wood residue for the purpose of producing steam by heat transfer.

(e) *Wood residue* means bark, sawdust, slabs, chips, shavings, mill trim, and other wood products derived from wood processing and forest management operations.

(f) *Coal* means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by ASTM D388–77, 90, 91, 95, or 98a (incorporated by reference—see § 60.17).

[39 FR 20791, June 14, 1974, as amended at 40 FR 2803, Jan. 16, 1975; 41 FR 51398, Nov. 22, 1976; 43 FR 9278, Mar. 7, 1978; 48 FR 3736, Jan. 27, 1983; 65 FR 61752, Oct. 17, 2000]

§ 60.42 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain particulate matter in excess of 43 nanograms per joule heat input (0.10 lb per million Btu) derived from fossil fuel or fossil fuel and wood residue.

(2) Exhibit greater than 20 percent opacity except for one six-minute period per hour of not more than 27 percent opacity.

(b)(1) On or after December 28, 1979, no owner or operator shall cause to be discharged into the atmosphere from the Southwestern Public Service Company's Harrington Station #1, in Amarillo, TX, any gases which exhibit greater than 35 percent opacity, except that a maximum or 42 percent opacity shall be permitted for not more than 6 minutes in any hour.

(2) Interstate Power Company shall not cause to be discharged into the atmosphere from its Lansing Station Unit No. 4 in Lansing, IA, any gases which exhibit greater than 32 percent opacity, except that a maximum of 39 percent opacity shall be permitted for not more than six minutes in any hour.

[39 FR 20792, June 14, 1974, as amended at 41 FR 51398, Nov. 22, 1976; 42 FR 61537, Dec. 5, 1977; 44 FR 76787, Dec. 28, 1979; 45 FR 36077, May 29, 1980; 45 FR 47146, July 14, 1980; 46 FR 57498, Nov. 24, 1981; 61 FR 49976, Sept. 24, 1996; 65 FR 61752, Oct. 17, 2000]

§ 60.43 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of:

(1) 340 nanograms per joule heat input (0.80 lb per million Btu) derived from liquid fossil fuel or liquid fossil fuel and wood residue.

(2) 520 nanograms per joule heat input (1.2 lb per million Btu) derived from solid fossil fuel or solid fossil fuel and wood residue, except as provided in paragraph (e) of this section.

(b) When different fossil fuels are burned simultaneously in any combination, the applicable standard (in ng/J) shall be determined by proration using the following formula:

$$PS_{SO2}=[y(340)+z(520)]/(y+z)$$

where:

PS_{SO2} is the prorated standard for sulfur dioxide when burning different fuels simultaneously, in nanograms per joule heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired,

y is the percentage of total heat input derived from liquid fossil fuel, and

z is the percentage of total heat input derived from solid fossil fuel.

(c) Compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels.

(d) [Reserved]

(e) Units 1 and 2 (as defined in appendix G) at the Newton Power Station owned or operated by the Central Illinois Public Service Company will be in compliance with paragraph (a)(2) of this section if Unit 1 and Unit 2 individually comply with paragraph (a)(2) of this section or if the combined emission rate from Units 1 and 2 does not exceed 470 nanograms per joule (1.1 lb per million Btu) combined heat input to Units 1 and 2.

[39 FR 20792, June 14, 1974, as amended at 41 FR 51398, Nov. 22, 1976; 52 FR 28954, Aug. 4, 1987]

§ 60.44 Standard for nitrogen oxides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain nitrogen oxides, expressed as NO_2 in excess of:

(1) 86 nanograms per joule heat input (0.20 lb per million Btu) derived from gaseous fossil fuel.

(2) 129 nanograms per joule heat input (0.30 lb per million Btu) derived from liquid fossil fuel, liquid fossil fuel and wood residue, or gaseous fossil fuel and wood residue.

(3) 300 nanograms per joule heat input (0.70 lb per million Btu) derived from solid fossil fuel or solid fossil fuel and wood residue (except lignite or a solid fossil fuel containing 25 percent, by weight, or more of coal refuse).

(4) 260 nanograms per joule heat input (0.60 lb per million Btu) derived from lignite or lignite and wood residue (except as provided under paragraph (a)(5) of this section).

(5) 340 nanograms per joule heat input (0.80 lb per million Btu) derived from lignite which is mined in North Dakota, South Dakota, or Montana and which is burned in a cyclone-fired unit.

(b) Except as provided under paragraphs (c) and (d) of this section, when different fossil fuels are burned simultaneously in any combination, the applicable standard (in ng/J) is determined by proration using the following formula:

$$PS_{\mathrm{NOx}} = \frac{w(260) + x(86) + y(130) + z(300)}{w + x + y + z}$$

where:

PS_{NOx}=is the prorated standard for nitrogen oxides when burning different fuels simultaneously, in nanograms per joule heat input derived from all fossil fuels fired or from all fossil fuels and wood residue fired;

w= is the percentage of total heat input derived from lignite;

x= is the percentage of total heat input derived from gaseous fossil fuel;

y= is the percentage of total heat input derived from liquid fossil fuel; and

z= is the percentage of total heat input derived from solid fossil fuel (except lignite).

(c) When a fossil fuel containing at least 25 percent, by weight, of coal refuse is burned in combination with gaseous, liquid, or other solid fossil fuel or wood residue, the standard for nitrogen oxides does not apply.

(d) Cyclone-fired units which burn fuels containing at least 25 percent of lignite that is mined in North Dakota, South Dakota, or Montana remain subject to paragraph (a)(5) of this section regardless of the types of fuel combusted in combination with that lignite.

[39 FR 20792, June 14, 1974, as amended at 41 FR 51398, Nov. 22, 1976; 43 FR 9278, Mar. 7, 1978; 51 FR 42797, Nov. 25, 1986]

§ 60.45 Emission and fuel monitoring.

(a) Each owner or operator shall install, calibrate, maintain, and operate continuous monitoring systems for measuring the opacity of emissions, sulfur dioxide emissions, nitrogen oxides emissions, and either oxygen or carbon dioxide except as provided in paragraph (b) of this section.

(b) Certain of the continuous monitoring system requirements under paragraph (a) of this section do not apply to owners or operators under the following conditions:

(1) For a fossil fuel-fired steam generator that burns only gaseous fossil fuel, continuous monitoring systems for measuring the opacity of emissions and sulfur dioxide emissions are not required.

(2) For a fossil fuel-fired steam generator that does not use a flue gas desulfurization device, a continuous monitoring system for measuring sulfur dioxide emissions is not required if the owner or operator monitors sulfur dioxide emissions by fuel sampling and analysis.

(3) Notwithstanding § 60.13(b), installation of a continuous monitoring system for nitrogen oxides may be delayed until after the initial performance tests under § 60.8 have been conducted. If the owner or operator demonstrates during the performance test that emissions of nitrogen oxides are less than 70 percent of the applicable standards in § 60.44, a continuous monitoring system for measuring nitrogen oxides emissions is not required. If the initial performance test results show that nitrogen oxide emissions are greater than 70 percent of the applicable standard, the owner or operator shall install a continuous monitoring system for nitrogen oxides within one year after the date of the initial performance tests under § 60.8 and comply with all other applicable monitoring requirements under this part.

(4) If an owner or operator does not install any continuous monitoring systems for sulfur oxides and nitrogen oxides, as provided under paragraphs (b)(1) and (b)(3) or paragraphs (b)(2) and (b)(3) of this section a continuous monitoring system for measuring either oxygen or carbon dioxide is not required.

(c) For performance evaluations under § 60.13(c) and calibration checks under § 60.13(d), the following procedures shall be used:

(1) Methods 6, 7, and 3B, as applicable, shall be used for the performance evaluations of sulfur dioxide and nitrogen oxides continuous monitoring systems. Acceptable alternative methods for Methods 6, 7, and 3B are given in § 60.46(d).

(2) Sulfur dioxide or nitric oxide, as applicable, shall be used for preparing calibration gas mixtures under Performance Specification 2 of appendix B to this part.

(3) For affected facilities burning fossil fuel(s), the span value for a continuous monitoring system measuring the opacity of emissions shall be 80, 90, or 100 percent and for a continuous monitoring system measuring sulfur oxides or nitrogen oxides the span value shall be determined as follows:

[In parts per million]

Fossil fuel	Span value for sulfur dioxide	Span value for nitrogen oxides
Gas	([1])	500
Liquid	1,000	500
Solid	1,500	1000
Combinations	1,000*y*+1,500*z*	500(*x*+*y*)+1,000*z*

[1] Not applicable.

where:

x=the fraction of total heat input derived from gaseous fossil fuel, and

y=the fraction of total heat input derived from liquid fossil fuel, and

z=the fraction of total heat input derived from solid fossil fuel.

(4) All span values computed under paragraph (c)(3) of this section for burning combinations of fossil fuels shall be rounded to the nearest 500 ppm.

(5) For a fossil fuel-fired steam generator that simultaneously burns fossil fuel and nonfossil fuel, the span value of all continuous monitoring systems shall be subject to the Administrator's approval.

(d) [Reserved]

(e) For any continuous monitoring system installed under paragraph (a) of this section, the following conversion procedures shall be used to convert the continuous monitoring data into units of the applicable standards (ng/J, lb/million Btu):

(1) When a continuous monitoring system for measuring oxygen is selected, the measurement of the pollutant concentration and oxygen concentration shall each be on a consistent basis (wet or dry). Alternative procedures approved by the Administrator shall be used when measurements are on a wet basis. When measurements are on a dry basis, the following conversion procedure shall be used:

$E=CF[20.9/(20.9\text{—percent } O_2)]$

where:

E, C, F, and $\%O_2$ are determined under paragraph (f) of this section.

(2) When a continuous monitoring system for measuring carbon dioxide is selected, the measurement of the pollutant concentration and carbon dioxide concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure shall be used:

$E=CF_c\ [100/\text{percent } CO_2]$

where:

E, C, F_c and $\%CO_2$ are determined under paragraph (f) of this section.

(f) The values used in the equations under paragraphs (e) (1) and (2) of this section are derived as follows:

(1) *E*=pollutant emissions, ng/J (lb/million Btu).

(2) *C*=pollutant concentration, ng/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each one-hour period by 4.15×10^{4} M ng/dscm per ppm (2.59×10^{-9} M lb/dscf per ppm) where *M*=pollutant molecular weight, g/g-mole (lb/lb-mole). *M*=64.07 for sulfur dioxide and 46.01 for nitrogen oxides.

(3) $\%O_2$, $\%CO_2$=oxygen or carbon dioxide volume (expressed as percent), determined with equipment specified under paragraph (a) of this section.

(4) F, F_c=a factor representing a ratio of the volume of dry flue gases generated to the calorific value of the fuel combusted (F), and a factor representing a ratio of the volume of carbon dioxide generated to the calorific

value of the fuel combusted (F_c), respectively. Values of F and F_c are given as follows:

(i) For anthracite coal as classified according to ASTM D388–77, 90, 91, 95, or 98a (incorporated by reference—see § 60.17), $F=2{,}723\times10^{-17}$ dscm/J (10,140 dscf/million Btu and $F_c=0.532\times10^{-17}$ scm CO_2/J (1,980 scf CO_2/million Btu).

(ii) For subbituminous and bituminous coal as classified according to ASTM D388–77, 90, 91, 95, or 98a (incorporated by reference—see § 60.17), $F=2.637\times10^{-7}$ dscm/J (9,820 dscf/million Btu) and $F_c=0.486\times10^{-7}$ scm CO_2/J (1,810 scf CO_2/million Btu).

(iii) For liquid fossil fuels including crude, residual, and distillate oils, $F=2.476\times10^{-7}$ dscm/J (9,220 dscf/million Btu) and $F_c=0.384\times10^{-7}$ scm CO_2/J (1,430 scf CO_2/million Btu).

(iv) For gaseous fossil fuels, $F=2.347\times10^{-7}$ dscm/J (8,740 dscf/million Btu). For natural gas, propane, and butane fuels, $F_c=0.279\times10^{-7}$ scm CO_2/J (1,040 scf CO_2/million Btu) for natural gas, 0.322×10^{-7} scm CO_2/J (1,200 scf CO_2/million Btu) for propane, and 0.338×10^{-7} scm CO_2/J (1,260 scf CO_2/million Btu) for butane.

(v) For bark $F=2.589\times10^{-7}$ dscm/J (9,640 dscf/million Btu) and $F_c=0.500\times10^{-7}$ scm CO_2/J (1,840 scf CO_2/million Btu). For wood residue other than bark $F=2.492\times10^{-7}$ dscm/J (9,280 dscf/million Btu) and $F_c=0.494\times10^{-7}$ scm CO_2/J (1,860 scf CO_2/ million Btu).

(vi) For lignite coal as classified according to ASTM D388–77, 90, 91, 95, or 98a (incorporated by reference—see § 60.17), $F=2.659\times10^{-7}$ dscm/J (9,900 dscf/million Btu) and $F_c=0.516\times10^{-7}$ scm CO_2/J (1,920 scf CO_2/million Btu).

(5) The owner or operator may use the following equation to determine an F factor (dscm/J or dscf/million Btu) on a dry basis (if it is desired to calculate F on a wet basis, consult the Administrator) or F_c factor (scm CO_2/J, or scf CO_2/million Btu) on either basis in lieu of the F or F_c factors specified in paragraph (f)(4) of this section:

$$F = 10^{-6}\,\frac{\left[227.2\,(\text{pct. II}) + 95.5\,(\text{pct. C}) + 35.6\,(\text{pct. S}) + 8.7\,(\text{pct. N}) - 28.7\,(\text{pct. O})\right]}{\text{GCV}}$$

$$F_c = \frac{2.0\times10^{-5}\,(\text{pct. C})}{\text{GCV}\left(\text{SI units}\right)}$$

$$F = \frac{10^{6}\left[3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O)\right]}{GCV\,(\text{English units})}$$

$$F_c = \frac{20.0\,(\%C)}{GCV\,(\text{SI units})}$$

$$F_c = \frac{321\times10^{3}(\%C)}{GCV(\text{English units})}$$

(i) H, C, S, N, and O are content by weight of hydrogen, carbon, sulfur, nitrogen, and oxygen (expressed as percent), respectively, as determined on the same basis as GCV by ultimate analysis of the fuel fired, using ASTM D3178–73 (Reapproved 1979), 89, or D3176–74 or 89 (solid fuels) or computed from results using ASTM D1137–53 or 75, D1945–64, 76, 91, or 96 or D1946–77 or 90 (Reapproved 1994) (gaseous fuels) as applicable. (These five methods are incorporated by reference—see § 60.17.)

(ii) GVC is the gross calorific value (kJ/kg, Btu/lb) of the fuel combusted determined by the ASTM test methods D2015–77 for solid fuels and D1826–77 for gaseous fuels as applicable. (These two methods are incorporated by reference—see § 60.17.)

(iii) For affected facilities which fire both fossil fuels and nonfossil fuels, the

F or F_c value shall be subject to the Administrator's approval.

(6) For affected facilities firing combinations of fossil fuels or fossil fuels and wood residue, the F or F_c factors determined by paragraphs (f)(4) or (f)(5) of this section shall be prorated in accordance with the applicable formula as follows:

$$F = \sum_{i=1}^{n} X_i F_i \text{ or } F_c = \sum_{i=1}^{n} X_i (F_c)_i$$

where:

X_i=the fraction of total heat input derived from each type of fuel (e.g. natural gas, bituminous coal, wood residue, etc.)

F_i or $(F_c)_i$=the applicable F or F_c factor for each fuel type determined in accordance with paragraphs (f)(4) and (f)(5) of this section.

n=the number of fuels being burned in combination.

(g) Excess emission and monitoring system performance reports shall be submitted to the Administrator semiannually for each six-month period in the calendar year. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period. Each excess emission and MSP report shall include the information required in § 60.7(c). Periods of excess emissions and monitoring systems (MS) downtime that shall be reported are defined as follows:

(1) *Opacity*. Excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 20 percent opacity, except that one six-minute average per hour of up to 27 percent opacity need not be reported.

(i) For sources subject to the opacity standard of § 60.42(b)(1), excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 35 percent opacity, except that one six-minute average per hour of up to 42 percent opacity need not be reported.

(ii) For sources subject to the opacity standard of § 60.42(b)(2), excess emissions are defined as any six-minute period during which the average opacity of emissions exceeds 32 percent opacity, except that one six-minute average per hour of up to 39 percent opacity need not be reported.

(2) *Sulfur dioxide*. Excess emissions for affected facilities are defined as:

(i) Any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) of sulfur dioxide as measured by a continuous monitoring system exceed the applicable standard under § 60.43.

(3) *Nitrogen oxides*. Excess emissions for affected facilities using a continuous monitoring system for measuring nitrogen oxides are defined as any three-hour period during which the average emissions (arithmetic average of three contiguous one-hour periods) exceed the applicable standards under § 60.44.

[40 FR 46256, Oct. 6, 1975]

EDITORIAL NOTE 1: For FEDERAL REGISTER citations affecting § 60.45, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

EDITORIAL NOTE 2: At 65 FR 61752, Oct. 17, 2000, § 60.45(f)(5)(ii) was amended by revising the words "ASTM D1826–77" to read "ASTM D1826–77 or 94." and by revising the words "ASTM D2015–77" to read "ASTM D2015–77 (Reapproved 1978), 96, or D5865–98." However, this amendment could not be incorporated because these words do not exist in paragraph (f)(5)(ii).

§ 60.46 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (d) of this section.

(b) The owner or operator shall determine compliance with the particulate matter, SO_2, and NO_x standards in §§ 60.42, 60.43, and 60.44 as follows:

(1) The emission rate (E) of particulate matter, SO_2, or NO_x shall be computed for each run using the following equation:

$E=C\ F_d\ (20.9)/(20.9-\%\ 0_2)$

E = emission rate of pollutant, ng/J (1b/million Btu).

C = concentration of pollutant, ng/dscm (1b/dscf).

$\%O_2$ = oxygen concentration, percent dry basis.

F_d = factor as determined from Method 19.

(2) Method 5 shall be used to determine the particular matter concentration (C) at affected facilities without wet flue-gas-desulfurization (FGD) systems and Method 5B shall be used to determine the particulate matter concentration (C) after FGD systems.

(i) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). The probe and filter holder heating systems in the sampling train shall be set to provide an average gas temperature of 160±14 °C (320±25 °F).

(ii) The emission rate correction factor, integrated or grab sampling and analysis procedure of Method 3B shall be used to determine the O_2 concentration (%O_2). The O_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate sample. If the grab sampling procedure is used, the O_2 concentration for the run shall be the arithmetic mean of the sample O_2 concentrations at all traverse points.

(iii) If the particulate run has more than 12 traverse points, the O_2 traverse points may be reduced to 12 provided that Method 1 is used to locate the 12 O_2 traverse points.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(4) Method 6 shall be used to determine the SO_2 concentration.

(i) The sampling site shall be the same as that selected for the particulate sample. The sampling location in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). The sampling time and sample volume for each sample run shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Two samples shall be taken during a 1-hour period, with each sample taken within a 30-minute interval.

(ii) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the O_2 concentration (%O_2). The O_2 sample shall be taken simultaneously with, and at the same point as, the SO_2 sample. The SO_2 emission rate shall be computed for each pair of SO_2 and O_2 samples. The SO_2 emission rate (E) for each run shall be the arithmetic mean of the results of the two pairs of samples.

(5) Method 7 shall be used to determine the NO_x concentration.

(i) The sampling site and location shall be the same as for the SO_2 sample. Each run shall consist of four grab samples, with each sample taken at about 15-minute intervals.

(ii) For each NO_x sample, the emission rate correction factor, grab sampling and analysis procedure of Method 3B shall be used to determine the O_2 concentration (%O_2). The sample shall be taken simultaneously with, and at the same point as, the NO_x sample.

(iii) The NO_x emission rate shall be computed for each pair of NO_x and O_2 samples. The NO_x emission rate (E) for each run shall be the arithmetic mean of the results of the four pairs of samples.

(c) When combinations of fossil fuels or fossil fuel and wood residue are fired, the owner or operator (in order to compute the prorated standard as shown in §§ 60.43(b) and 60.44(b)) shall determine the percentage (w, x, y, or z) of the total heat input derived from each type of fuel as follows:

(1) The heat input rate of each fuel shall be determined by multiplying the gross calorific value of each fuel fired by the rate of each fuel burned.

(2) ASTM Methods D2015–77 (Reapproved 1978), 96, or D5865–98 (solid fuels), D240–76 or 92 (liquid fuels), or D1826–77 or 94 (gaseous fuels) (incorporated by reference—see § 60.17) shall be used to determine the gross calorific values of the fuels. The method used to determine the calorific value of wood residue must be approved by the Administrator.

(3) Suitable methods shall be used to determine the rate of each fuel burned during each test period, and a material balance over the steam generating system shall be used to confirm the rate.

(d) The owner or operator may use the following as alternatives to the reference methods and procedures in this section or in other sections as specified:

(1) The emission rate (E) of particulate matter, SO_2 and NO_x may be determined by using the F_c factor, provided that the following procedure is used:

(i) The emission rate (E) shall be computed using the following equation:

$$E=C\ F_c\ (100/\%CO_2)$$

where:

E=emission rate of pollutant, ng/J (lb/million Btu).

C=concentration of pollutant, ng/dscm (lb/dscf).

$\%CO_2$=carbon dioxide concentration, percent dry basis.

F_c=factor as determined in appropriate sections of Method 19.

(ii) If and only if the average F_c factor in Method 19 is used to calculate E and either E is from 0.97 to 1.00 of the emission standard or the relative accuracy of a continuous emission monitoring system is from 17 to 20 percent, then three runs of Method 3B shall be used to determine the O_2 and CO_2 concentration according to the procedures in paragraph (b) (2)(ii), (4)(ii), or (5)(ii) of this section. Then if F_o (average of three runs), as calculated from the equation in Method 3B, is more than ±3 percent than the average F_o value, as determined from the average values of F_d and F_c in Method 19, i.e., $F_{oa}=0.209\ (F_{da}/F_{ca})$, then the following procedure shall be followed:

(A) When F_o is less than 0.97 F_{oa}, then E shall be increased by that proportion under 0.97 F_{oa}, e.g., if F_o is 0.95 F_{oa}, E shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the emission standard.

(B) When F_o is less than 0.97 F_{oa} and when the average difference ($\bar{d}$) between the continuous monitor minus the reference methods is negative, then E shall be increased by that proportion under 0.97 F_{oa}, e.g., if F_o is 0.95 F_{oa}, E shall be increased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification.

(C) When F_o is greater than 1.03 F_{oa} and when the average difference $\bar{d}$ is positive, then E shall be decreased by that proportion over 1.03 F_{oa}, e.g., if F_o is 1.05 F_{oa}, E shall be decreased by 2 percent. This recalculated value shall be used to determine compliance with the relative accuracy specification.

(2) For Method 5 or 5B, Method 17 may be used at facilities with or without wet FGD systems if the stack gas temperature at the sampling location does not exceed an average temperature of 160 °C (320 °F). The procedures of sections 2.1 and 2.3 of Method 5B may be used with Method 17 only if it is used after wet FGD systems. Method 17 shall not be used after wet FGD systems if the effluent gas is saturated or laden with water droplets.

(3) Particulate matter and SO_2 may be determined simultaneously with the Method 5 train provided that the following changes are made:

(i) The filter and impinger apparatus in sections 2.1.5 and 2.1.6 of Method 8 is used in place of the condenser (section 2.1.7) of Method 5.

(ii) All applicable procedures in Method 8 for the determination of SO_2 (including moisture) are used:

(4) For Method 6, Method 6C may be used. Method 6A may also be used whenever Methods 6 and 3B data are specified to determine the SO_2 emission rate, under the conditions in paragraph (d)(1) of this section.

(5) For Method 7, Method 7A, 7C, 7D, or 7E may be used. If Method 7C, 7D, or 7E is used, the sampling time for each run shall be at least 1 hour and the integrated sampling approach shall be used to determine the O_2 concentration ($\%O_2$) for the emission rate correction factor.

(6) For Method 3, Method 3A or 3B may be used.

(7) For Method 3B, Method 3A may be used.

[54 FR 6662, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 55 FR 5212, Feb. 14, 1990; 65 FR 61752, Oct. 17, 2000]

Subpart Da—Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978

SOURCE: 44 FR 33613, June 11, 1979, unless otherwise noted.

§ 60.40a Applicability and designation of affected facility.

(a) The affected facility to which this subpart applies is each electric utility steam generating unit:

(1) That is capable of combusting more than 73 megawatts (250 million

Btu/hour) heat input of fossil fuel (either alone or in combination with any other fuel); and

(2) For which construction or modification is commenced after September 18, 1978.

(b) Unless and until subpart GG of this part extends the applicability of subpart GG of this part to electric utility steam generators, this subpart applies to electric utility combined cycle gas turbines that are capable of combusting more than 73 megawatts (250 million Btu/hour) heat input of fossil fuel in the steam generator. Only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The gas turbine emissions are subject to subpart GG of this part.)

(c) Any change to an existing fossil-fuel-fired steam generating unit to accommodate the use of combustible materials, other than fossil fuels, shall not bring that unit under the applicability of this subpart.

(d) Any change to an existing steam generating unit originally designed to fire gaseous or liquid fossil fuels, to accommodate the use of any other fuel (fossil or nonfossil) shall not bring that unit under the applicability of this subpart.

[44 FR 33613, June 11, 1979, as amended at 63 FR 49453, Sept. 16, 1998]

§60.41a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Anthracite means coal that is classified as anthracite according to the American Society of Testing and Materials' (ASTM) Standard Specification for Classification of Coals by Rank D388–77 (incorporated by reference—see §60.17).

Available purchase power means the lesser of the following:

(a) The sum of available system capacity in all neighboring companies.

(b) The sum of the rated capacities of the power interconnection devices between the principal company and all neighboring companies, minus the sum of the electric power load on these interconnections.

(c) The rated capacity of the power transmission lines between the power interconnection devices and the electric generating units (the unit in the principal company that has the malfunctioning flue gas desulfurization system and the unit(s) in the neighboring company supplying replacement electrical power) less the electric power load on these transmission lines.

Available system capacity means the capacity determined by subtracting the system load and the system emergency reserves from the net system capacity.

Boiler operating day means a 24-hour period during which fossil fuel is combusted in a steam generating unit for the entire 24 hours.

Coal refuse means waste products of coal mining, physical coal cleaning, and coal preparation operations (e.g. culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material.

Combined cycle gas turbine means a stationary turbine combustion system where heat from the turbine exhaust gases is recovered by a steam generating unit.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

Electric utility combined cycle gas turbine means any combined cycle gas turbine used for electric generation that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam distribution system that is constructed for the purpose of providing steam to a steam electric generator that would produce electrical power for sale is also considered in determining the electrical energy output capacity of the affected facility.

Electric utility company means the largest interconnected organization, business, or governmental entity that generates electric power for sale (e.g., a holding company with operating subsidiary companies).

Electric utility steam generating unit means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

Emergency condition means that period of time when:

(a) The electric generation output of an affected facility with a malfunctioning flue gas desulfurization system cannot be reduced or electrical output must be increased because:

(1) All available system capacity in the principal company interconnected with the affected facility is being operated, and

(2) All available purchase power interconnected with the affected facility is being obtained, or

(b) The electric generation demand is being shifted as quickly as possible from an affected facility with a malfunctioning flue gas desulfurization system to one or more electrical generating units held in reserve by the principal company or by a neighboring company, or

(c) An affected facility with a malfunctioning flue gas desulfurization system becomes the only available unit to maintain a part or all of the principal company's system emergency reserves and the unit is operated in spinning reserve at the lowest practical electric generation load consistent with not causing significant physical damage to the unit. If the unit is operated at a higher load to meet load demand, an emergency condition would not exist unless the conditions under (a) of this definition apply.

Fossil fuel means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such material for the purpose of creating useful heat.

Gross output means the gross useful work performed by the steam generated. For units generating only electricity, the gross useful work performed is the gross electrical output from the turbine/generator set. For cogeneration units, the gross useful work performed is the gross electrical output plus one half the useful thermal output (i.e., steam delivered to an industrial process).

24-hour period means the period of time between 12:01 a.m. and 12:00 midnight.

Interconnected means that two or more electric generating units are electrically tied together by a network of power transmission lines, and other power transmission equipment.

Lignite means coal that is classified as lignite A or B according to the American Society of Testing and Materials' (ASTM) Standard Specification for Classification of Coals by Rank D388–77, 90, 91, 95, or 98a (incorporated by reference—see §60.17).

Neighboring company means any one of those electric utility companies with one or more electric power interconnections to the principal company and which have geographically adjoining service areas.

Net system capacity means the sum of the net electric generating capability (not necessarily equal to rated capacity) of all electric generating equipment owned by an electric utility company (including steam generating units, internal combustion engines, gas turbines, nuclear units, hydroelectric units, and all other electric generating equipment) plus firm contractual purchases that are interconnected to the affected facility that has the malfunctioning flue gas desulfurization system. The electric generating capability of equipment under multiple ownership is prorated based on ownership unless the proportional entitlement to electric output is otherwise established by contractual arrangement.

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Potential combustion concentration means the theoretical emissions (ng/J, lb/million Btu heat input) that would result from combustion of a fuel in an uncleaned state without emission control systems) and:

(a) For particulate matter is:

(1) 3,000 ng/J (7.0 lb/million Btu) heat input for solid fuel; and

(2) 73 ng/J (0.17 lb/million Btu) heat input for liquid fuels.

(b) For sulfur dioxide is determined under § 60.48a(b).

(c) For nitrogen oxides is:

(1) 290 ng/J (0.67 lb/million Btu) heat input for gaseous fuels;

(2) 310 ng/J (0.72 lb/million Btu) heat input for liquid fuels; and

(3) 990 ng/J (2.30 lb/million Btu) heat input for solid fuels.

Potential electrical output capacity is defined as 33 percent of the maximum design heat input capacity of the steam generating unit (e.g., a steam generating unit with a 100–MW (340 million Btu/hr) fossil-fuel heat input capacity would have a 33–MW potential electrical output capacity). For electric utility combined cycle gas turbines the potential electrical output capacity is determined on the basis of the fossil-fuel firing capacity of the steam generator exclusive of the heat input and electrical power contribution by the gas turbine.

Principal company means the electric utility company or companies which own the affected facility.

Resource recovery unit means a facility that combusts more than 75 percent non-fossil fuel on a quarterly (calendar) heat input basis.

Solid-derived fuel means any solid, liquid, or gaseous fuel derived from solid fuel for the purpose of creating useful heat and includes, but is not limited to, solvent refined coal, liquified coal, and gasified coal.

Spare flue gas desulfurization system module means a separate system of sulfur dioxide emission control equipment capable of treating an amount of flue gas equal to the total amount of flue gas generated by an affected facility when operated at maximum capacity divided by the total number of nonspare flue gas desulfurization modules in the system.

Spinning reserve means the sum of the unutilized net generating capability of all units of the electric utility company that are synchronized to the power distribution system and that are capable of immediately accepting additional load. The electric generating capability of equipment under multiple ownership is prorated based on ownership unless the proportional entitlement to electric output is otherwise established by contractual arrangement.

Steam generating unit means any furnace, boiler, or other device used for combusting fuel for the purpose of producing steam (including fossil-fuel-fired steam generators associated with combined cycle gas turbines; nuclear steam generators are not included).

Subbituminous coal means coal that is classified as subbituminous A, B, or C according to the American Society of Testing and Materials (ASTM) Standard Specification for Classification of Coals by Rank D388–77, 90, 91, 95, or 98a (incorporated by reference—see §60.17).

System emergency reserves means an amount of electric generating capacity equivalent to the rated capacity of the single largest electric generating unit in the electric utility company (including steam generating units, internal combustion engines, gas turbines, nuclear units, hydroelectric units, and all other electric generating equipment) which is interconnected with the affected facility that has the malfunctioning flue gas desulfurization system. The electric generating capability of equipment under multiple ownership is prorated based on ownership unless the proportional entitlement to electric output is otherwise established by contractual arrangement.

System load means the entire electric demand of an electric utility company's service area interconnected with the affected facility that has the malfunctioning flue gas desulfurization system plus firm contractual sales to other electric utility companies. Sales to other electric utility companies (e.g., emergency power) not on a firm contractual basis may also be included in the system load when no available system capacity exists in the electric utility company to which the power is supplied for sale.

[44 FR 33613, June 11, 1979, as amended at 48 FR 3737, Jan. 27, 1983; 63 FR 49453, Sept. 16, 1998; 65 FR 61752, Oct. 17, 2000; 66 FR 18551, Apr. 10, 2001]

§ 60.42a Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted under § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of:

(1) 13 ng/J (0.03 lb/million Btu) heat input derived from the combustion of solid, liquid, or gaseous fuel;

(2) 1 percent of the potential combustion concentration (99 percent reduction) when combusting solid fuel; and

(3) 30 percent of potential combustion concentration (70 percent reduction) when combusting liquid fuel.

(b) On and after the date the particulate matter performance test required to be conducted under § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

§ 60.43a Standard for sulfur dioxide.

(a) On and after the date on which the initial performance test required to be conducted under § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility which combusts solid fuel or solid-derived fuel, except as provided under paragraphs (c), (d), (f) or (h) of this section, any gases which contain sulfur dioxide in excess of:

(1) 520 ng/J (1.20 lb/million Btu) heat input and 10 percent of the potential combustion concentration (90 percent reduction), or

(2) 30 percent of the potential combustion concentration (70 percent reduction), when emissions are less than 260 ng/J (0.60 lb/million Btu) heat input.

(b) On and after the date on which the initial performance test required to be conducted under § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility which combusts liquid or gaseous fuels (except for liquid or gaseous fuels derived from solid fuels and as provided under paragraphs (e) or (h) of this section), any gases which contain sulfur dioxide in excess of:

(1) 340 ng/J (0.80 lb/million Btu) heat input and 10 percent of the potential combustion concentration (90 percent reduction), or

(2) 100 percent of the potential combustion concentration (zero percent reduction) when emissions are less than 86 ng/J (0.20 lb/million Btu) heat input.

(c) On and after the date on which the initial performance test required to be conducted under § 60.8 is complete, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility which combusts solid solvent refined coal (SRC–I) any gases which contain sulfur dioxide in excess of 520 ng/J (1.20 lb/million Btu) heat input and 15 percent of the potential combustion concentration (85 percent reduction) except as provided under paragraph (f) of this section; compliance with the emission limitation is determined on a 30-day rolling average basis and compliance with the percent reduction requirement is determined on a 24-hour basis.

(d) Sulfur dioxide emissions are limited to 520 ng/J (1.20 lb/million Btu) heat input from any affected facility which:

(1) Combusts 100 percent anthracite,

(2) Is classified as a resource recovery unit, or

(3) Is located in a noncontinental area and combusts solid fuel or solid-derived fuel.

(e) Sulfur dioxide emissions are limited to 340 ng/J (0.80 lb/million Btu) heat input from any affected facility which is located in a noncontinental area and combusts liquid or gaseous fuels (excluding solid-derived fuels).

(f) The emission reduction requirements under this section do not apply to any affected facility that is operated under an SO_2 commercial demonstration permit issued by the Administrator in accordance with the provisions of § 60.45a.

(g) Compliance with the emission limitation and percent reduction requirements under this section are both determined on a 30-day rolling average basis except as provided under paragraph (c) of this section.

(h) When different fuels are combusted simultaneously, the applicable standard is determined by proration using the following formula:

(1) If emissions of sulfur dioxide to the atmosphere are greater than 260 ng/J (0.60 lb/million Btu) heat input

$E_s=(340x+520\ y)/100$ and
$\%P_s=10$

(2) If emissions of sulfur dioxide to the atmosphere are equal to or less than 260 ng/J (0.60 lb/million Btu) heat input:

$E_s=(340x+520\ y)/100$ and
$\%P_s=(10x+30\ y)/100$

where:

E_s is the prorated sulfur dioxide emission limit (ng/J heat input),

$\%P_s$ is the percentage of potential sulfur dioxide emission allowed.

x is the percentage of total heat input derived from the combustion of liquid or gaseous fuels (excluding solid-derived fuels)

y is the percentage of total heat input derived from the combustion of solid fuel (including solid-derived fuels)

[44 FR 33613, June 11, 1979, as amended at 54 FR 6663, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 65 FR 61752, Oct. 17, 2000]

§ 60.44a Standard for nitrogen oxides.

(a) On and after the date on which the initial performance test required to be conducted under § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility, except as provided under paragraphs (b) and (d) of this section, any gases which contain nitrogen oxides (expressed as NO_2) in excess of the following emission limits, based on a 30-day rolling average, except as provided under § 60.46a(j)(1):

(1) *NO_x emission limits.*

Fuel type	Emission limit for heat input	
	ng/J	(lb/million Btu)
Gaseous fuels:		
Coal-derived fuels	210	0.50
All other fuels	86	0.20
Liquid fuels:		
Coal-derived fuels	210	0.50
Shale oil	210	0.50
All other fuels	130	0.30
Solid fuels:		
Coal-derived fuels	210	0.50
Any fuel containing more than 25%, by weight, coal refuse	(1)	(1)
Any fuel containing more than 25%, by weight, lignite if the lignite is mined in North Dakota, South Dakota, or Montana, and is combusted in a slag tap furnace[2]	340	0.80
Any fuel containing more than 25%, by weight, lignite not subject to the 340 ng/J heat input emission limit[2]..		
Subbituminous coal	210	0.50
Bituminous coal	260	0.60
Anthracite coal	260	0.60
All other fuels	260	0.60

[1] Exempt from NO_x standards and NO_x monitoring requirements.

[2] Any fuel containing less than 25%, by weight, lignite is not prorated but its percentage is added to the percentage of the predominant fuel.

(2) *NO_x reduction requirement.*

Fuel type	Percent reduction of potential combustion concentration
Gaseous fuels	25
Liquid fuels	30
Solid fuels	65

(b) The emission limitations under paragraph (a) of this section do not apply to any affected facility which is combusting coal-derived liquid fuel and is operating under a commercial demonstration permit issued by the Administrator in accordance with the provisions of § 60.45a.

(c) Except as provided under paragraph (d) of this section, when two or more fuels are combusted simultaneously, the applicable standard is determined by proration using the following formula:

$E_n=[86\ w+130x+210\ y+260\ z+340\ v]/100$

where:

E_n is the applicable standard for nitrogen oxides when multiple fuels are combusted simultaneously (ng/J heat input);

w is the percentage of total heat input derived from the combustion of fuels subject to the 86 ng/J heat input standard;

x is the percentage of total heat input derived from the combustion of fuels subject to the 130 ng/J heat input standard;

y is the percentage of total heat input derived from the combustion of fuels subject to the 210 ng/J heat input standard;

z is the percentage of total heat input derived from the combustion of fuels subject to the 260 ng/J heat input standard; and

v is the percentage of total heat input delivered from the combustion of fuels subject to the 340 ng/J heat input standard.

(d)(1) On and after the date on which the initial performance test required to be conducted under § 60.8 is completed, no new source owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility for which construction commenced after July 9, 1997 any gases which contain nitrogen oxides (expressed as NO_2) in excess of 200 nanograms per joule (1.6 pounds per megawatt-hour) gross energy output, based on a 30-day rolling average, except as provided under § 60.46a(k)(1).

(2) On and after the date on which the initial performance test required to be conducted under § 60.8 is completed, no existing source owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility for which reconstruction commenced after July 9, 1997 any gases which contain nitrogen oxides (expressed as NO_2) in excess of 65 ng/Jl (0.15 pounds per million Btu) heat input, based on a 30-day rolling average.

[44 FR 33613, June 11, 1979, as amended at 54 FR 6664, Feb. 14, 1989; 63 FR 49453, Sept. 16, 1998; 66 FR 18551, Apr. 10, 2001; 66 FR 42610, Aug. 14, 2001]

§ 60.45a Commercial demonstration permit.

(a) An owner or operator of an affected facility proposing to demonstrate an emerging technology may apply to the Administrator for a commercial demonstration permit. The Administrator will issue a commercial demonstration permit in accordance with paragraph (e) of this section. Commercial demonstration permits may be issued only by the Administrator, and this authority will not be delegated.

(b) An owner or operator of an affected facility that combusts solid solvent refined coal (SRC–I) and who is issued a commercial demonstration permit by the Administrator is not subject to the SO_2 emission reduction requirements under § 60.43a(c) but must, as a minimum, reduce SO_2 emissions to 20 percent of the potential combustion concentration (80 percent reduction) for each 24-hour period of steam generator operation and to less than 520 ng/J (1.20 lb/million Btu) heat input on a 30-day rolling average basis.

(c) An owner or operator of a fluidized bed combustion electric utility steam generator (atmospheric or pressurized) who is issued a commercial demonstration permit by the Administrator is not subject to the SO_2 emission reduction requirements under § 60.43a(a) but must, as a minimum, reduce SO_2 emissions to 15 percent of the potential combustion concentration (85 percent reduction) on a 30-day rolling average basis and to less than 520 ng/J (1.20 lb/million Btu) heat input on a 30-day rolling average basis.

(d) The owner or operator of an affected facility that combusts coal-derived liquid fuel and who is issued a commercial demonstration permit by the Administrator is not subject to the applicable NO_x emission limitation and percent reduction under § 60.44a(a) but must, as a minimum, reduce emissions to less than 300 ng/J (0.70 lb/million Btu) heat input on a 30-day rolling average basis.

(e) Commercial demonstration permits may not exceed the following equivalent MW electrical generation capacity for any one technology category, and the total equivalent MW electrical generation capacity for all commercial demonstration plants may not exceed 15,000 MW.

Technology	Pollutant	Equivalent electrical capacity (MW electrical output)
Solid solvent refined coal (SRC I)	SO_2	6,000–10,000
Fluidized bed combustion (atmospheric)	SO_2	400–3,000
Fluidized bed combustion (pressurized)	SO_2	400–1,200
Coal liquification	NO_x	750–10,000
Total allowable for all technologies		15,000

§ 60.46a Compliance provisions.

(a) Compliance with the particulate matter emission limitation under

§ 60.42a(a)(1) constitutes compliance with the percent reduction requirements for particulate matter under § 60.42a(a)(2) and (3).

(b) Compliance with the nitrogen oxides emission limitation under § 60.44a(a) constitutes compliance with the percent reduction requirements under § 60.44a(a)(2).

(c) The particulate matter emission standards under § 60.42a and the nitrogen oxides emission standards under § 60.44a apply at all times except during periods of startup, shutdown, or malfunction. The sulfur dioxide emission standards under § 60.43a apply at all times except during periods of startup, shutdown, or when both emergency conditions exist and the procedures under paragraph (d) of this section are implemented.

(d) During emergency conditions in the principal company, an affected facility with a malfunctioning flue gas desulfurization system may be operated if sulfur dioxide emissions are minimized by:

(1) Operating all operable flue gas desulfurization system modules, and bringing back into operation any malfunctioned module as soon as repairs are completed,

(2) Bypassing flue gases around only those flue gas desulfurization system modules that have been taken out of operation because they were incapable of any sulfur dioxide emission reduction or which would have suffered significant physical damage if they had remained in operation, and

(3) Designing, constructing, and operating a spare flue gas desulfurization system module for an affected facility larger than 365 MW (1,250 million Btu/hr) heat input (approximately 125 MW electrical output capacity). The Administrator may at his discretion require the owner or operator within 60 days of notification to demonstrate spare module capability. To demonstrate this capability, the owner or operator must demonstrate compliance with the appropriate requirements under paragraph (a), (b), (d), (e), and (h) under § 60.43a for any period of operation lasting from 24 hours to 30 days when:

(i) Any one flue gas desulfurization module is not operated,

(ii) The affected facility is operating at the maximum heat input rate,

(iii) The fuel fired during the 24-hour to 30-day period is representative of the type and average sulfur content of fuel used over a typical 30-day period, and

(iv) The owner or operator has given the Administrator at least 30 days notice of the date and period of time over which the demonstration will be performed.

(e) After the initial performance test required under § 60.8, compliance with the sulfur dioxide emission limitations and percentage reduction requirements under § 60.43a and the nitrogen oxides emission limitations under § 60.44a is based on the average emission rate for 30 successive boiler operating days. A separate performance test is completed at the end of each boiler operating day after the initial performance test, and a new 30 day average emission rate for both sulfur dioxide and nitrogen oxides and a new percent reduction for sulfur dioxide are calculated to show compliance with the standards.

(f) For the initial performance test required under § 60.8, compliance with the sulfur dioxide emission limitations and percent reduction requirements under § 60.43a and the nitrogen oxides emission limitation under § 60.44a is based on the average emission rates for sulfur dioxide, nitrogen oxides, and percent reduction for sulfur dioxide for the first 30 successive boiler operating days. The initial performance test is the only test in which at least 30 days prior notice is required unless otherwise specified by the Administrator. The initial performance test is to be scheduled so that the first boiler operating day of the 30 successive boiler operating days is completed within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility.

(g) Compliance is determined by calculating the arithmetic average of all hourly emission rates for SO_2 and NO_x for the 30 successive boiler operating days, except for data obtained during startup, shutdown, malfunction (NO_x only), or emergency conditions (SO_2 only). Compliance with the percentage reduction requirement for SO_2 is determined based on the average inlet and average outlet SO_2 emission rates for the 30 successive boiler operating days.

(h) If an owner or operator has not obtained the minimum quantity of emission data as required under § 60.47a of this subpart, compliance of the affected facility with the emission requirements under §§ 60.43a and 60.44a of this subpart for the day on which the 30-day period ends may be determined by the Administrator by following the applicable procedures in section 7 of Method 19.

(i) *Compliance provisions for sources subject to § 60.44a(d)(1).* The owner or operator of an affected facility subject to § 60.44a(d)(1) (new source constructed after July 7, 1997) shall calculate NO_X emissions by multiplying the average hourly NO_X output concentration, measured according to the provisions of § 60.47a(c), by the average hourly flow rate, measured according to the provisions of § 60.47a(l), and divided by the average hourly gross energy output, measured according to the provisions of § 60.47a(k).

(j) *Compliance provisions for duct burners subject to § 60.44a(a)(1).* To determine compliance with the emissions limits for NO_X required by § 60.44a(a) for duct burners used in combined cycle systems, either of the procedures described in paragraph (j)(1) or (2) of this section may be used:

(1) The owner or operator of an affected duct burner shall conduct the performance test required under § 60.8 using the appropriate methods in appendix A of this part. Compliance with the emissions limits under § 60.44a(a)(1) is determined on the average of three (nominal 1-hour) runs for the initial and subsequent performance tests. During the performance test, one sampling site shall be located in the exhaust of the turbine prior to the duct burner. A second sampling site shall be located at the outlet from the heat recovery steam generating unit. Measurements shall be taken at both sampling sites during the performance test; or

(2) The owner or operator of an affected duct burner may elect to determine compliance by using the continuous emission monitoring system specified under § 60.47a for measuring NO_X and oxygen and meet the requirements of § 60.47a. Data from a CEMS certified (or recertified) according to the provisions of 40 CFR 75.20, meeting the QA and QC requirements of 40 CFR 75.21, and validated according to 40 CFR 75.23 may be used. The sampling site shall be located at the outlet from the steam generating unit. The NO_X emission rate at the outlet from the steam generating unit shall constitute the NO_X emission rate from the duct burner of the combined cycle system.

(k) *Compliance provisions for duct burners subject to § 60.44a(d)(1).* To determine compliance with the emissions limits for NO_X required by § 60.44a(d)(1) for duct burners used in combined cycle systems, either of the procedures described in paragraphs (k)(1) and (2) of this section may be used:

(1) The owner or operator of an affected duct burner used in combined cycle systems shall determine compliance with the NO_X standard in § 60.44a(d)(1) as follows:

(i) The emission rate (E) of NO_X shall be computed using Equation 1 of this section:

$$E = [(Csg \times Qsg) - (Cte \times Qte)]/(Osg \times h) \quad \text{(Eq. 1)}$$

Where:

E = emission rate of NO_X from the duct burner, ng/J (lb/Mwh) gross output

Csg = average hourly concentration of NO_X exiting the steam generating unit, ng/dscm (lb/dscf)

Cte = average hourly concentration of NO_X in the turbine exhaust upstream from duct burner, ng/dscm (lb/dscf)

Qsg = average hourly volumetric flow rate of exhaust gas from steam generating unit, dscm/hr (dscf/hr)

Qte = average hourly volumetric flow rate of exhaust gas from combustion turbine, dscm/hr (dscf/hr)

Osg = average hourly gross energy output from steam generating unit, J (Mwh)

h = average hourly fraction of the total heat input to the steam generating unit derived from the combustion of fuel in the affected duct burner

(ii) Method 7E of appendix A of this part shall be used to determine the NO_X concentrations (Csg and Cte). Method 2, 2F or 2G of appendix A of this part, as appropriate, shall be used to determine the volumetric flow rates (Qsg and Qte) of the exhaust gases. The volumetric flow rate measurements shall be taken at the same time as the concentration measurements.

(iii) The owner or operator shall develop, demonstrate, and provide information satisfactory to the Administrator to determine the average hourly gross energy output from the steam generating unit, and the average hourly percentage of the total heat input to the steam generating unit derived from the combustion of fuel in the affected duct burner.

(iv) Compliance with the emissions limits under § 60.44a (d)(1) is determined by the three-run average (nominal 1-hour runs) for the initial and subsequent performance tests.

(2) The owner or operator of an affected duct burner used in a combined cycle system may elect to determine compliance with the NO_X standard in § 60.44a(d)(1) on a 30-day rolling average basis as indicated in paragraphs (k)(2)(i) through (iv) of this section.

(i) The emission rate (E) of NO_X shall be computed using Equation 2 of this section:

$$E = (Csg \times Qsd) / Occ \quad \text{(Eq. 2)}$$

Where:

E = emission rate of NO_X from the duct burner, ng/J (lb/Mwh) gross output

Csg = average hourly concentration of NO_X exiting the steam generating unit, ng/dscm (lb/dscf)

Qsg = average hourly volumetric flow rate of exhaust gas from steam generating unit, dscm/hr (dscf/hr)

Occ = average hourly gross energy output from entire combined cycle unit, J (Mwh)

(ii) The continuous emissions monitoring system specified under § 60.47a for measuring NO_X and oxygen shall be used to determine the average hourly NO_X concentrations (Csg). The continuous flow monitoring system specified in § 60.47a(l) shall be used to determine the volumetric flow rate (Qsg) of the exhaust gas. The sampling site shall be located at the outlet from the steam generating unit. Data from a continuous flow monitoring system certified (or recertified) following procedures specified in 40 CFR 75.20, meeting the quality assurance and quality control requirements of 40 CFR 75.21, and validated according to 40 CFR 75.23 may be used.

(iii) The continuous monitoring system specified under § 60.47a(k) for measuring and determining gross energy output shall be used to determine the average hourly gross energy output from the entire combined cycle unit (Occ), which is the combined output from the combustion turbine and the steam generating unit.

(iv) The owner or operator may, in lieu of installing, operating, and recording data from the continuous flow monitoring system specified in § 60.47a(l), determine the mass rate (lb/hr) of NO_X emissions by installing, operating, and maintaining continuous fuel flowmeters following the appropriate measurements procedures specified in appendix D of 40 CFR part 75. If this compliance option is selected, the emission rate (E) of NO_X shall be computed using Equation 3 of this section:

$$E = (ERsg \times Hcc) / Occ \quad \text{(Eq. 3)}$$

Where:

E = emission rate of NO_X from the duct burner, ng/J (lb/Mwh) gross output

ERsg = average hourly emission rate of NO_X exiting the steam generating unit heat input calculated using appropriate F-factor as described in Method 19, ng/J (lb/million Btu)

Hcc = average hourly heat input rate of entire combined cycle unit, J/hr (million Btu/hr)

Occ = average hourly gross energy output from entire combined cycle unit, J (Mwh)

(3) When an affected duct burner steam generating unit utilizes a common steam turbine with one or more affected duct burner steam generating units, the owner or operator shall either:

(i) Determine compliance with the applicable NO_X emissions limits by measuring the emissions combined with the emissions from the other unit(s) utilizing the common steam turbine; or

(ii) Develop, demonstrate, and provide information satisfactory to the Administrator on methods for apportioning the combined gross energy output from the steam turbine for each of the affected duct burners. The Administrator may approve such demonstrated substitute methods for apportioning the combined gross energy output measured at the steam turbine whenever the demonstration ensures accurate estimation of emissions regulated under this part.

[44 FR 33613, June 11, 1979, as amended at 54 FR 6664, Feb. 14, 1989; 63 FR 49454, Sept. 16, 1998; 66 FR 18552, Apr. 10, 2001; 66 FR 31178, June 11, 2001]

§ 60.47a Emission monitoring.

(a) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring the opacity of emissions discharged to the atmosphere, except where gaseous fuel is the only fuel combusted. If opacity interference due to water droplets exists in the stack (for example, from the use of an FGD system), the opacity is monitored upstream of the interference (at the inlet to the FGD system). If opacity interference is experienced at all locations (both at the inlet and outlet of the sulfur dioxide control system), alternate parameters indicative of the particulate matter control system's performance are monitored (subject to the approval of the Administrator).

(b) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring sulfur dioxide emissions, except where natural gas is the only fuel combusted, as follows:

(1) Sulfur dioxide emissions are monitored at both the inlet and outlet of the sulfur dioxide control device.

(2) For a facility which qualifies under the provisions of § 60.43a(d), sulfur dioxide emissions are only monitored as discharged to the atmosphere.

(3) An ''as fired'' fuel monitoring system (upstream of coal pulverizers) meeting the requirements of Method 19may be used to determine potential sulfur dioxide emissions in place of a continuous sulfur dioxide emission monitor at the inlet to the sulfur dioxide control device as required under paragraph (b)(1) of this section.

(c)(1) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere; or

(2) If the owner or operator has installed a nitrogen oxides emission rate continuous emission monitoring system (CEMS) to meet the requirements of part 75 of this chapter and is continuing to meet the ongoing requirements of part 75 of this chapter, that CEMS may be used to meet the requirements of this section, except that the owner or operator shall also meet the requirements of § 60.49a. Data reported to meet the requirements of § 60.49a shall not include data substituted using the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter.

(d) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring the oxygen or carbon dioxide content of the flue gases at each location where sulfur dioxide or nitrogen oxides emissions are monitored.

(e) The continuous monitoring systems under paragraphs (b), (c), and (d) of this section are operated and data recorded during all periods of operation of the affected facility including periods of startup, shutdown, malfunction or emergency conditions, except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments.

(f) The owner or operator shall obtain emission data for at least 18 hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement cannot be met with a continuous monitoring system, the owner or operator shall supplement emission data with other monitoring systems approved by the Administrator or the reference methods and procedures as described in paragraph (h) of this section.

(g) The 1-hour averages required under paragraph § 60.13(h) are expressed in ng/J (lb/million Btu) heat input and used to calculate the average emission rates under § 60.46a. The 1-hour averages are calculated using the data points required under § 60.13(b). At least two data points must be used to calculate the 1-hour averages.

(h) When it becomes necessary to supplement continuous monitoring system data to meet the minimum data requirements in paragraph (f) of this section, the owner or operator shall use the reference methods and procedures as specified in this paragraph. Acceptable alternative methods and procedures are given in paragraph (j) of this section.

(1) Method 6 shall be used to determine the SO_2 concentration at the same location as the SO_2 monitor. Samples shall be taken at 60-minute intervals. The sampling time and sample volume for each sample shall be at least 20 minutes and 0.020 dscm (0.71 dscf). Each sample represents a 1-hour average.

(2) Method 7 shall be used to determine the NO_x concentration at the same location as the NO_x monitor. Samples shall be taken at 30-minute intervals. The arithmetic average of two consecutive samples represents a 1-hour average.

(3) The emission rate correction factor, integrated bag sampling and analysis procedure of Method 3B shall be used to determine the O_2 or CO_2 concentration at the same location as the O_2 or CO_2 monitor. Samples shall be taken for at least 30 minutes in each hour. Each sample represents a 1-hour average.

(4) The procedures in Method 19 shall be used to compute each 1-hour average concentration in ng/J (1b/million Btu) heat input.

(i) The owner or operator shall use methods and procedures in this paragraph to conduct monitoring system performance evaluations under § 60.13(c) and calibration checks under § 60.13(d). Acceptable alternative methods and procedures are given in paragraph (j) of this section.

(1) Methods 3B, 6, and 7 shall be used to determine O_2, SO_2, and NO_X concentrations, respectively.

(2) SO_2 or NO_x (NO), as applicable, shall be used for preparing the calibration gas mixtures (in N_2, as applicable) under Performance Specification 2 of appendix B of this part.

(3) For affected facilities burning only fossil fuel, the span value for a continuous monitoring system for measuring opacity is between 60 and 80 percent and for a continuous monitoring system measuring nitrogen oxides is determined as follows:

Fossil fuel	Span value for nitrogen oxides (ppm)
Gas	500
Liquid	500
Solid	1,000
Combination	500 (x+y)+1,000z

where:

x is the fraction of total heat input derived from gaseous fossil fuel,

y is the fraction of total heat input derived from liquid fossil fuel, and

z is the fraction of total heat input derived from solid fossil fuel.

(4) All span values computed under paragraph (b)(3) of this section for burning combinations of fossil fuels are rounded to the nearest 500 ppm.

(5) For affected facilities burning fossil fuel, alone or in combination with non-fossil fuel, the span value of the sulfur dioxide continuous monitoring system at the inlet to the sulfur dioxide control device is 125 percent of the maximum estimated hourly potential emissions of the fuel fired, and the outlet of the sulfur dioxide control device is 50 percent of maximum estimated hourly potential emissions of the fuel fired.

(j) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 6, Method 6A or 6B (whenever Methods 6 and 3 or 3B data are used) or 6C may be used. Each Method 6B sample obtained over 24 hours represents 24 1-hour averages. If Method 6A or 6B is used under paragraph (i) of this section, the conditions under § 60.46(d)(1) apply; these conditions do not apply under paragraph (h) of this section.

(2) For Method 7, Method 7A, 7C, 7D, or 7E may be used. If Method 7C, 7D, or 7E is used, the sampling time for each run shall be 1 hour.

(3) For Method 3, Method 3A or 3B may be used if the sampling time is 1 hour.

(4) For Method 3B, Method 3A may be used.

(k) The procedures specified in paragraphs (k)(1) through (3) of this section shall be used to determine gross output for sources demonstrating compliance with the output-based standard under § 60.44a(d)(1).

(1) The owner or operator of an affected facility with electricity generation shall install, calibrate, maintain, and operate a wattmeter; measure gross electrical output in megawatt-hour on a continuous basis; and record the output of the monitor.

(2) The owner or operator of an affected facility with process steam generation shall install, calibrate, maintain, and operate meters for steam flow, temperature, and pressure; measure gross process steam output in joules per hour (or Btu per hour) on a continuous basis; and record the output of the monitor.

(3) For affected facilities generating process steam in combination with electrical generation, the gross energy output is determined from the gross electrical output measured in accordance with paragraph (k)(1) of this section plus 50 percent of the gross thermal output of the process steam measured in accordance with paragraph (k)(2) of this section.

(l) The owner or operator of an affected facility demonstrating compliance with the output-based standard under § 60.44a(d)(1) shall install, certify, operate, and maintain a continuous flow monitoring system meeting the requirements of Performance Specification 6 of appendix B and procedure 1 of appendix F of this subpart, and record the output of the system, for measuring the flow of exhaust gases discharged to the atmosphere; or

(m) Alternatively, data from a continuous flow monitoring system certified according to the requirements of 40 CFR 75.20, meeting the applicable quality control and quality assurance requirements of 40 CFR 75.21, and validated according to 40 CFR 75.23, may be used.

(n) Gas-fired and oil-fired units. The owner or operator of an affected unit that qualifies as a gas-fired or oil-fired unit, as defined in 40 CFR 72.2, may use, as an alternative to the requirements specified in either paragraph (l) or (m) of this section, a fuel flow monitoring system certified and operated according to the requirements of appendix D of 40 CFR part 75.

(o) The owner or operator of a duct burner, as described in § 60.41a, which is subject to the NO_X standards of § 60.44a(a)(1) or (d)(1) is not required to install or operate a continuous emissions monitoring system to measure NO_X emissions; a wattmeter to measure gross electrical output; meters to measure steam flow, temperature, and pressure; and a continuous flow monitoring system to measure the flow of exhaust gases discharged to the atmosphere.

[44 FR 33613, June 11, 1979, as amended at 54 FR 6664, Feb. 14, 1989; 55 FR 5212, Feb. 14, 1990; 55 FR 18876, May 7, 1990; 63 FR 49454, Sept. 16, 1998; 65 FR 61752, Oct. 17, 2000; 66 FR 18553, Apr. 10, 2001]

§ 60.48a Compliance determination procedures and methods.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the methods in appendix A of this part or the methods and procedures as specified in this section, except as provided in § 60.8(b). Section 60.8(f) does not apply to this section for SO_2 and $NO_{x.}$ Acceptable alternative methods are given in paragraph (e) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.42a as follows:

(1) The dry basis F factor (O_2) procedures in Method 19 shall be used to compute the emission rate of particulate matter.

(2) For the particular matter concentration, Method 5 shall be used at affected facilities without wet FGD systems and Method 5B shall be used after wet FGD systems.

(i) The sampling time and sample volume for each run shall be at least 120 minutes and 1.70 dscm (60 dscf). The probe and filter holder heating system in the sampling train may be set to provide an average gas temperature of no greater than 160±14 ° C (320±25° F).

(ii) For each particulate run, the emission rate correction factor, integrated or grab sampling and analysis procedures of Method 3B shall be used to determine the O_2 concentration. The

O_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate run. If the particulate run has more than 12 traverse points, the O_2 traverse points may be reduced to 12 provided that Method 1 is used to locate the 12 O_2 traverse points. If the grab sampling procedure is used, the O_2 concentration for the run shall be the arithmetic mean of the sample O_2 concentrations at all traverse points.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator shall determine compliance with the SO_2 standards in § 60.43a as follows:

(1) The percent of potential SO_2 emissions (%P_s) to the atmosphere shall be computed using the following equation:

$$\%P_s=[(100—\%R_f)\ (100—\%R_g)]/100$$

where:

%P_s=percent of potential SO_2 emissions, percent.

%R_f=percent reduction from fuel pretreatment, percent.

%R_g=percent reduction by SO_2 control system, percent.

(2) The procedures in Method 19 may be used to determine percent reduction (%R_f) of sulfur by such processes as fuel pretreatment (physical coal cleaning, hydrodesulfurization of fuel oil, etc.), coal pulverizers, and bottom and flyash interactions. This determination is optional.

(3) The procedures in Method 19 shall be used to determine the percent SO_2 reduction (%R_g) of any SO_2 control system. Alternatively, a combination of an ‘‘as fired’’ fuel monitor and emission rates measured after the control system, following the procedures in Method 19, may be used if the percent reduction is calculated using the average emission rate from the SO_2 control device and the average SO_2 input rate from the ‘‘as fired’’ fuel analysis for 30 successive boiler operating days.

(4) The appropriate procedures in Method 19 shall be used to determine the emission rate.

(5) The continuous monitoring system in § 60.47a (b) and (d) shall be used to determine the concentrations of SO_2 and CO_2 or O_2.

(d) The owner or operator shall determine compliance with the NO_x standard in § 60.44a as follows:

(1) The appropriate procedures in Method 19 shall be used to determine the emission rate of NO_x.

(2) The continous monitoring system in § 60.47a (c) and (d) shall be used to determine the concentrations of NO_x and CO_2 or O_2.

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5 or 5B, Method 17 may be used at facilities with or without wet FGD systems if the stack temperature at the sampling location does not exceed an average temperature of 160 °C (320 °F). The procedures of §§ 2.1 and 2.3 of Method 5B may be used in Method 17 only if it is used after wet FGD systems. Method 17 shall not be used after wet FGD systems if the effluent is saturated or laden with water droplets.

(2) The F_c factor (CO_2) procedures in Method 19 may be used to compute the emission rate of particulate matter under the stipulations of § 60.46(d)(1). The CO_2 shall be determined in the same manner as the O_2 concentration.

(f) Electric utility combined cycle gas turbines are performance tested for particulate matter, sulfur dioxide, and nitrogen oxides using the procedures of Method 19. The sulfur dioxide and nitrogen oxides emission rates from the gas turbine used in Method 19 calculations are determined when the gas turbine is performance tested under subpart GG. The potential uncontrolled particulate matter emission rate from a gas turbine is defined as 17 ng/J (0.04 lb/million Btu) heat input.

[44 FR 33613, June 11, 1979, as amended at 54 FR 6664, Feb. 14, 1989; 55 FR 5212, Feb. 14, 1990; 65 FR 61752, Oct. 17, 2000]

§ 60.49a Reporting requirements.

(a) For sulfur dioxide, nitrogen oxides, and particulate matter emissions, the performance test data from the initial performance test and from the performance evaluation of the continuous monitors (including the transmissometer) are submitted to the Administrator.

(b) For sulfur dioxide and nitrogen oxides the following information is reported to the Administrator for each 24-hour period.

(1) Calendar date.

(2) The average sulfur dioxide and nitrogen oxide emission rates (ng/J or lb/million Btu) for each 30 successive boiler operating days, ending with the last 30-day period in the quarter; reasons for non-compliance with the emission standards; and, description of corrective actions taken.

(3) Percent reduction of the potential combustion concentration of sulfur dioxide for each 30 successive boiler operating days, ending with the last 30-day period in the quarter; reasons for non-compliance with the standard; and, description of corrective actions taken.

(4) Identification of the boiler operating days for which pollutant or dilutent data have not been obtained by an approved method for at least 18 hours of operation of the facility; justification for not obtaining sufficient data; and description of corrective actions taken.

(5) Identification of the times when emissions data have been excluded from the calculation of average emission rates because of startup, shutdown, malfunction (NO_x only), emergency conditions (SO_2 only), or other reasons, and justification for excluding data for reasons other than startup, shutdown, malfunction, or emergency conditions.

(6) Identification of ''F'' factor used for calculations, method of determination, and type of fuel combusted.

(7) Identification of times when hourly averages have been obtained based on manual sampling methods.

(8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.

(9) Description of any modifications to the continuous monitoring system which could affect the ability of the continuous monitoring system to comply with Performance Specifications 2 or 3.

(c) If the minimum quantity of emission data as required by § 60.47a is not obtained for any 30 successive boiler operating days, the following information obtained under the requirements of § 60.46a(h) is reported to the Administrator for that 30-day period:

(1) The number of hourly averages available for outlet emission rates (n_o) and inlet emission rates (n_i) as applicable.

(2) The standard deviation of hourly averages for outlet emission rates (s_o) and inlet emission rates (s_i) as applicable.

(3) The lower confidence limit for the mean outlet emission rate (E_o*) and the upper confidence limit for the mean inlet emission rate (E_i*) as applicable.

(4) The applicable potential combustion concentration.

(5) The ratio of the upper confidence limit for the mean outlet emission rate (E_o*) and the allowable emission rate (E_{std}) as applicable.

(d) If any standards under § 60.43a are exceeded during emergency conditions because of control system malfunction, the owner or operator of the affected facility shall submit a signed statement:

(1) Indicating if emergency conditions existed and requirements under § 60.46a(d) were met during each period, and

(2) Listing the following information:

(i) Time periods the emergency condition existed;

(ii) Electrical output and demand on the owner or operator's electric utility system and the affected facility;

(iii) Amount of power purchased from interconnected neighboring utility companies during the emergency period;

(iv) Percent reduction in emissions achieved;

(v) Atmospheric emission rate (ng/J) of the pollutant discharged; and

(vi) Actions taken to correct control system malfunction.

(e) If fuel pretreatment credit toward the sulfur dioxide emission standard under § 60.43a is claimed, the owner or operator of the affected facility shall submit a signed statement:

(1) Indicating what percentage cleaning credit was taken for the calendar quarter, and whether the credit was determined in accordance with the provisions of § 60.48a and Method 19 (appendix A); and

(2) Listing the quantity, heat content, and date each pretreated fuel shipment was received during the previous quarter; the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the previous quarter.

(f) For any periods for which opacity, sulfur dioxide or nitrogen oxides emissions data are not available, the owner or operator of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(g) The owner or operator of the affected facility shall submit a signed statement indicating whether:

(1) The required continuous monitoring system calibration, span, and drift checks or other periodic audits have or have not been performed as specified.

(2) The data used to show compliance was or was not obtained in accordance with approved methods and procedures of this part and is representative of plant performance.

(3) The minimum data requirements have or have not been met; or, the minimum data requirements have not been met for errors that were unavoidable.

(4) Compliance with the standards has or has not been achieved during the reporting period.

(h) For the purposes of the reports required under §60.7, periods of excess emissions are defined as all 6-minute periods during which the average opacity exceeds the applicable opacity standards under §60.42a(b). Opacity levels in excess of the applicable opacity standard and the date of such excesses are to be submitted to the Administrator each calendar quarter.

(i) The owner or operator of an affected facility shall submit the written reports required under this section and subpart A to the Administrator semiannually for each six-month period. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.

(j) The owner or operator of an affected facility may submit electronic quarterly reports for SO_2 and/or NO_X and/or opacity in lieu of submitting the written reports required under paragraphs (b) and (h) of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.

[44 FR 33613, June 11, 1979, as amended at 63 FR 49454, Sept. 16, 1998; 64 FR 7464, Feb. 12, 1999]

Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

§ 60.40b Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 million Btu/hour).

(b) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1984, but on or before June 19, 1986, is subject to the following standards:

(1) Coal-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 million Btu/hour), inclusive, are subject to the particulate matter and nitrogen oxides standards under this subpart.

(2) Coal-fired affected facilities having a heat input capacity greater than 73 MW (250 million Btu/hour) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; § 60.40) are subject to the particulate matter and nitrogen oxides standards under this subpart and to the sulfur dioxide standards under subpart D (§ 60.43).

(3) Oil-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 million Btu/hour), inclusive, are subject to the nitrogen oxides standards under this subpart.

(4) Oil-fired affected facilities having a heat input capacity greater than 73 MW (250 million Btu/hour) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; § 60.40) are also subject to the nitrogen oxides standards under this subpart and the particulate matter and sulfur dioxide standards under subpart D (§ 60.42 and § 60.43).

(c) Affected facilities which also meet the applicability requirements under subpart J (Standards of performance for petroleum refineries; § 60.104) are subject to the particulate matter and nitrogen oxides standards under this subpart and the sulfur dioxide standards under subpart J (§ 60.104).

(d) Affected facilities which also meet the applicability requirements under subpart E (Standards of performance for incinerators; § 60.50) are subject to the nitrogen oxides and particulate matter standards under this subpart.

(e) Steam generating units meeting the applicability requirements under subpart Da (Standards of performance for electric utility steam generating units; § 60.40a) are not subject to this subpart.

(f) Any change to an existing steam generating unit for the sole purpose of combusting gases containing TRS as defined under § 60.281 is not considered a modification under § 60.14 and the steam generating unit is not subject to this subpart.

(g) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the following authorities shall be retained by the Administrator and not transferred to a State.

(1) Section 60.44b(f).

(2) Section 60.44b(g).

(3) Section 60.49b(a)(4).

(h) Affected facilities which meet the applicability requirements under subpart Eb (Standards of performance for municipal waste combustors; § 60.50b) are not subject to this subpart.

(i) Unless and until subpart GG of this part is revised to extend the applicability of subpart GG of this part to steam generator units subject to this subpart, this subpart will continue to apply to combined cycle gas turbines that are capable of combusting more than 29 MW (100 million Btu/hour) heat input of fossil fuel in the steam generator. Only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The gas turbine emissions are subject to subpart GG of this part.)

(j) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1986 is not subject to Subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators, § 60.40).

[52 FR 47842, Dec. 16, 1987, as amended at 63 FR 49454, Sept. 16, 1998; 65 FR 61752, Oct. 17, 2000]

§ 60.41b Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from the fuels listed in § 60.42b(a), § 60.43b(a), or § 60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year.

Byproduct/waste means any liquid or gaseous substance produced at chemical manufacturing plants, petroleum refineries, or pulp and paper mills (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide levels greater than 50 percent or carbon monoxide levels greater than 10 percent are not byproduct/waste for the purpose of this subpart.

Chemical manufacturing plants means industrial plants which are classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 28.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388–77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR—see § 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any byproduct of coal mining or coal cleaning operations with an ash content greater than 50 percent, by weight, and a heating value less than 13,900 kJ/kg (6,000 Btu/lb) on a dry basis.

Combined cycle system means a system in which a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a heat recovery steam generating unit.

Conventional technology means wet flue gas desulfurization (FGD) technology, dry FGD technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, Standard Specifications for Fuel Oils (incorporated by reference—see § 60.17).

Dry flue gas desulfurization technology means a sulfur dioxide control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a heat recovery steam generating unit.

Emerging technology means any sulfur dioxide control system that is not defined as a conventional technology under this section, and for which the owner or operator of the facility has applied to the Administrator and received approval to operate as an emerging technology under § 60.49b(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State Implementation Plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed combustion technology means combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Full capacity means operation of the steam generating unit at 90 percent or more of the maximum steady-state design heat input capacity.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

Heat release rate means the steam generating unit design heat input capacity (in MW or Btu/hour) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

Heat transfer medium means any material that is used to transfer heat from one point to another point.

High heat release rate means a heat release rate greater than 730,000 J/sec-m^3 (70,000 Btu/hour-ft^3).

Lignite means a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388–77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR—see § 60.17).

Low heat release rate means a heat release rate of 730,000 J/sec-m^3 (70,000 Btu/hour-ft^3) or less.

Mass-feed stoker steam generating unit means a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted.

Maximum heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit.

Municipal-type solid waste means refuse, more than 50 percent of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock.

Natural gas means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or (2) liquid petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835–82, 86, 87, 91, or 97, ''Standard Specification for Liquid Petroleum Gases'' (IBR—see § 60.17).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil.

Petroleum refinery means industrial plants as classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 29.

Potential sulfur dioxide emission rate means the theoretical sulfur dioxide emissions (ng/J, lb/million Btu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Pulp and paper mills means industrial plants which are classified by the Department of Commerce under North American Industry Classification System (NAICS) Code 322 or Standard Industrial Classification (SIC) Code 26.

Pulverized coal-fired steam generating unit means a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units.

Residual oil means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396–78, Standard Specifications for Fuel Oils (IBR—see § 60.17).

Spreader stoker steam generating unit means a steam generating unit in which solid fuel is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Steam generating unit means a device that combusts any fuel or byproduct/waste to produce steam or to heat water or any other heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Very low sulfur oil means an oil that contains no more than 0.5 weight percent sulfur or that, when combusted without sulfur dioxide emission control, has a sulfur dioxide emission rate equal to or less than 215 ng/J (0.5 lb/million Btu) heat input.

Wet flue gas desulfurization technology means a sulfur dioxide control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gas with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet flue gas desulfurization technology include, but are not limited to, lime, limestone, and sodium.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter or sulfur dioxide.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including, but not limited to, sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51819, Dec. 18, 1989; 65 FR 61752, Oct. 17, 2000; 66 FR 49834, Oct. 1, 2001]

§ 60.42b Standard for sulfur dioxide.

(a) Except as provided in paragraphs (b), (c), (d), or (j) of this section, on and after the date on which the performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal or oil shall cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 10 percent (0.10) of the potential sulfur dioxide emission rate (90 percent reduction) and that contain sulfur dioxide in excess of the emission limit determined according to the following formula:

$E_s=(K_a\ H_a+K_b\ H_b)/(H_a+H_b)$

where:

E_s is the sulfur dioxide emission limit, in ng/J or lb/million Btu heat input,

K_a is 520 ng/J (or 1.2 lb/million Btu),

K_b is 340 ng/J (or 0.80 lb/million Btu),

H_a is the heat input from the combustion of coal, in J (million Btu),

H_b is the heat input from the combustion of oil, in J (million Btu).

Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels or heat input to the affected facility from exhaust gases from another source, such as gas turbines, internal combustion engines, kilns, etc.

(b) On and after the date on which the performance test is completed or required to be completed under § 60.8 of this part, whichever comes first, no owner or operator of an affected facility that combusts coal refuse alone in a fluidized bed combustion steam generating unit shall cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 20 percent of the potential sulfur dioxide emission rate (80 percent reduction) and that contain sulfur dioxide in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal or oil is fired with coal refuse, the affected facility is subject to paragraph (a) or (d) of this section, as applicable.

(c) On and after the date on which the performance test is completed or is required to be completed under §60.8 of this part, whichever comes first, no owner or operator of an affected facility that combusts coal or oil, either alone or in combination with any other fuel, and that uses an emerging technology for the control of sulfur dioxide emissions, shall cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 50 percent of the potential sulfur dioxide emission rate (50 percent reduction) and that contain sulfur dioxide in excess of the emission limit determined according to the following formula:

$$E_s=(K_c\ H_c+K_d\ H_d)/H_c+H_d)$$

where:

E_s is the sulfur dioxide emission limit, expressed in ng/J (lb/million Btu) heat input,
K_c is 260 ng/J (0.60 lb/million Btu),
K_d is 170 ng/J (0.40 lb/million Btu),
H_c is the heat input from the combustion of coal, J (million Btu),
H_d is the heat input from the combustion of oil, J (million Btu).

Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from the combustion of natural gas, wood, municipal-type solid waste, or other fuels, or from the heat input to the affected facility from exhaust gases from another source, such as gas turbines, internal combustion engines, kilns, etc.

(d) On and after the date on which the performance test is completed or required to be completed under §60.8 of this part, whichever comes first, no owner or operator of an affected facility listed in paragraphs (d) (1), (2), or (3) of this section shall cause to be discharged into the atmosphere any gases that contain sulfur dioxide in excess of 520 ng/J (1.2 lb/million Btu) heat input if the affected facility combusts coal, or 215 ng/J (0.5 lb/million Btu) heat input if the affected facility combusts oil other than very low sulfur oil. Percent reduction requirements are not applicable to affected facilities under paragraphs (d)(1), (2), or (3).

(1) Affected facilities that have an annual capacity factor for coal and oil of 30 percent (0.30) or less and are subject to a Federally enforceable permit limiting the operation of the affected facility to an annual capacity factor for coal and oil of 30 percent (0.30) or less;

(2) Affected facilities located in a noncontinental area; or

(3) Affected facilities combusting coal or oil, alone or in combination with any other fuel, in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat input to the steam generating unit is from combustion of coal and oil in the duct burner and 70 percent (0.70) or more of the heat input to the steam generating unit is from the exhaust gases entering the duct burner.

(e) Except as provided in paragraph (f) of this section, compliance with the emission limits, fuel oil sulfur limits, and/or percent reduction requirements under this section are determined on a 30-day rolling average basis.

(f) Except as provided in paragraph (j)(2) of this section, compliance with the emission limits or fuel oil sulfur limits under this section is determined on a 24-hour average basis for affected facilities that (1) have a Federally enforceable permit limiting the annual capacity factor for oil to 10 percent or less, (2) combust only very low sulfur oil, and (3) do not combust any other fuel.

(g) Except as provided in paragraph (i) of this section, the sulfur dioxide emission limits and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(h) Reductions in the potential sulfur dioxide emission rate through fuel pretreatment are not credited toward the percent reduction requirement under paragraph (c) of this section unless:

(1) Fuel pretreatment results in a 50 percent or greater reduction in potential sulfur dioxide emissions and

(2) Emissions from the pretreated fuel (without combustion or post combustion sulfur dioxide control) are equal to or less than the emission limits specified in paragraph (c) of this section.

(i) An affected facility subject to paragraph (a), (b), or (c) of this section may combust very low sulfur oil or natural gas when the sulfur dioxide control system is not being operated because of malfunction or maintenance of the sulfur dioxide control system.

(j) Percent reduction requirements are not applicable to affected facilities combusting only very low sulfur oil. The owner or operator of an affected facility combusting very low sulfur oil shall demonstrate that the oil meets the definition of very low sulfur oil by: (1) Following the performance testing procedures as described in §60.45b(c) or §60.45b(d), and following the monitoring procedures as described in §60.47b(a) or §60.47b(b) to determine sulfur dioxide emission rate or fuel oil sulfur content; or (2) maintaining fuel receipts as described in §60.49b(r).

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51819, Dec. 18, 1989; 65 FR 61752, Oct. 17, 2000]

§60.43b Standard for particulate matter.

(a) On and after the date on which the initial performance test is completed or is required to be completed under §60.8 of this part, whichever comes first, no owner or operator of an affected facility which combusts coal or combusts mixtures of coal with other fuels, shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of the following emission limits:

(1) 22 ng/J (0.051 lb/million Btu) heat input,

(i) If the affected facility combusts only coal, or

(ii) If the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/million Btu) heat input if the affected facility combusts coal and other fuels and has an annual capacity factor for the other fuels greater than 10 percent (0.10) and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(3) 86 ng/J (0.20 lb/million Btu) heat input if the affected facility combusts coal or coal and other fuels and

(i) Has an annual capacity factor for coal or coal and other fuels of 30 percent (0.30) or less,

(ii) Has a maximum heat input capacity of 73 MW (250 million Btu/hour) or less,

(iii) Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for coal or coal and other solid fuels, and

(iv) Construction of the affected facility commenced after June 19, 1984, and before November 25, 1986.

(b) On and after the date on which the performance test is completed or required to be completed under 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil (or mixtures of oil with other fuels) and uses a conventional or emerging technology to reduce sulfur dioxide emissions shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of 43 ng/J (0.10 lb/million Btu) heat input.

(c) On and after the date on which the initial performance test is completed or is required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts wood, or wood with other fuels, except coal, shall cause to be discharged from that affected facility any gases that contain particulate matter in excess of the following emission limits:

(1) 43 ng/J (0.10 lb/million Btu) heat input if the affected facility has an annual capacity factor greater than 30 percent (0.30) for wood.

(2) 86 ng/J (0.20 lb/million Btu) heat input if

(i) The affected facility has an annual capacity factor of 30 percent (0.30) or less for wood,

(ii) Is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) or less for wood, and

(iii) Has a maximum heat input capacity of 73 MW (250 million Btu/hour) or less.

(d) On and after the date on which the initial performance test is completed or is required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts municipal-type solid waste or mixtures of municipal-type solid waste with other fuels, shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of the following emission limits:

(1) 43 ng/J (0.10 lb/million Btu) heat input,

(i) If the affected facility combusts only municipal-type solid waste, or

(ii) If the affected facility combusts municipal-type solid waste and other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 86 ng/J (0.20 lb/million Btu) heat input if the affected facility combusts municipal-type solid waste or municipal-type solid waste and other fuels; and

(i) Has an annual capacity factor for municipal-type solid waste and other fuels of 30 percent (0.30) or less,

(ii) Has a maximum heat input capacity of 73 MW (250 million Btu/hour) or less,

(iii) Has a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor of 30 percent (0.30) for municipal-type solid waste, or municipal-type solid waste and other fuels, and

(iv) Construction of the affected facility commenced after June 19, 1984, but before November 25, 1986.

(e) For the purposes of this section, the annual capacity factor is determined by dividing the actual heat input to the steam generating unit during the calendar year from the combustion of coal, wood, or municipal-type solid waste, and other fuels, as applicable, by the potential heat input to the steam generating unit if the steam generating unit had been operated for 8,760 hours at the maximum design heat input capacity.

(f) On and after the date on which the initial performance test is completed or is required to be completed under 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, wood, or mixtures of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(g) The particulate matter and opacity standards apply at all times, except during periods of startup, shutdown or malfunction.

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51819, Dec. 18, 1989; 65 FR 61752, Oct. 17, 2000]

§ 60.44b Standard for nitrogen oxides.

(a) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that is subject to the provisions of this section and that combusts only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides (expressed as NO_2) in excess of the following emission limits:

Fuel/Steam generating unit type	Nitrogen oxide emission limits ng/J (lb/million Btu) (expressed as NO_2) heat input
(1) Natural gas and distillate oil, except (4):	
(i) Low heat release rate	43 (0.10)
(ii) High heat release rate	86 (0.20)
(2) Residual oil:	
(i) Low heat release rate	130 (0.30)
(ii) High heat release rate	170 (0.40)
(3) Coal:	
(i) Mass-feed stoker	210 (0.50)
(ii) Spreader stoker and fluidized bed combustion	260 (0.60)
(iii) Pulverized coal	300 (0.70)
(iv) Lignite, except (v)	260 (0.60)
(v) Lignite mined in North Dakota, South Dakota, or Montana and combusted in a slag tap furnace	340 (0.80)
(vi) Coal-derived synthetic fuels	210 (0.50)
(4) Duct burner used in a combined cycle system:	
(i) Natural gas and distillate oil	86 (0.20)
(ii) Residual oil	170 (0.40)

(b) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts mixtures of coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of a limit determined by the use of the following formula:

$$E_n=[(EL_{go}\quad H_{go})+(EL_{ro}\quad H_{ro})+(EL_c\quad H_c)]/(H_{go}+H_{ro}+H_c)$$

where:

E_n is the nitrogen oxides emission limit (expressed as NO_2), ng/J (lb/million Btu)

EL_{go} is the appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/million Btu)

H_{go} is the heat input from combustion of natural gas or distillate oil,

EL_{ro} is the appropriate emission limit from paragraph (a)(2) for combustion of residual oil,

H_{ro} is the heat input from combustion of residual oil,

EL_c is the appropriate emission limit from paragraph (a)(3) for combustion of coal, and

H_c is the heat input from combustion of coal.

(c) Except as provided under paragraph (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts coal or oil, or a mixture of these fuels with natural gas, and wood, municipal-type solid waste, or any other fuel shall cause to be discharged into the atmosphere any gases that contain nitrogen oxides in excess of the emission limit for the coal or oil, or mixtures of these fuels with natural gas combusted in the affected facility, as determined pursuant to paragraph (a) or (b) of this section, unless the affected facility has an annual capacity factor for coal or oil, or mixture of these fuels with natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, or a mixture of these fuels with natural gas.

(d) On and after the date on which the initial performance test is completed or is required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts natural gas with wood, municipal-type solid waste, or other solid fuel, except coal, shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 130 ng/J (0.30 lb/million Btu) heat input unless the affected facility has an annual capacity factor for natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less for natural gas.

(e) Except as provided under paragraph (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that simultaneously combusts coal, oil, or natural gas with byproduct/waste shall cause to be discharged into the atmosphere any gases that contain nitrogen oxides in excess of the emission limit determined by the following formula unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the affected facility to an annual capacity factor of 10 percent (0.10) or less:

$$E_n=[(EL_{go}\quad H_{go})+(EL_{ro}\quad H_{ro})+\ (EL_c\quad H_c)]/(H_{go}+H_{ro}+H_c)$$

where:

E_n is the nitrogen oxides emission limit (expressed as NO_2), ng/J (lb/million Btu)

EL_{go} is the appropriate emission limit from paragraph (a)(1) for combustion of natural gas or distillate oil, ng/J (lb/million Btu).

H_{go} is the heat input from combustion of natural gas, distillate oil and gaseous byproduct/waste, ng/J (lb/million Btu).

EL_{ro} is the appropriate emission limit from paragraph (a)(2) for combustion of residual oil, ng/J (lb/million Btu)

H_{ro} is the heat input from combustion of residual oil and/or liquid byproduct/waste.

EL_c is the appropriate emission limit from paragraph (a)(3) for combustion of coal, and

H_c is the heat input from combustion of coal.

(f) Any owner or operator of an affected facility that combusts byproduct/waste with either natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility to establish a nitrogen oxides emission limit which shall apply specifically to that affected facility when the byproduct/waste is combusted. The petition shall include sufficient and appropriate data, as determined by the Administrator, such as nitrogen oxides emissions from the affected facility, waste composition (including nitrogen content), and combustion conditions to allow the Administrator to confirm that the affected facility is unable to comply with the emission limits in paragraph (e) of this section and to determine the appropriate emission limit for the affected facility.

(1) Any owner or operator of an affected facility petitioning for a facility-specific nitrogen oxides emission limit under this section shall:

(i) Demonstrate compliance with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) of this section, as appropriate, by conducting a 30-day performance test as provided in §60.46b(e). During the performance test only natural gas, distillate oil, or residual oil shall be combusted in the affected facility; and

(ii) Demonstrate that the affected facility is unable to comply with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) of this section, as appropriate, when gaseous or liquid byproduct/waste is combusted in the affected facility under the same conditions and using the same technological system of emission reduction applied when demonstrating compliance under paragraph (f)(1)(i) of this section.

(2) The nitrogen oxides emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) of this section, as appropriate, shall be applicable to the affected facility until and unless the petition is approved by the Administrator. If the petition is approved by the Administrator, a facility-specific nitrogen oxides emission limit will be established at the nitrogen oxides emission level achievable when the affected facility is combusting oil or natural gas and byproduct/waste in a manner that the Administrator determines to be consistent with minimizing nitrogen oxides emissions.

(g) Any owner or operator of an affected facility that combusts hazardous waste (as defined by 40 CFR part 261 or 40 CFR part 761) with natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility for a waiver from compliance with the nitrogen oxides emission limit which applies specifically to that affected facility. The petition must include sufficient and appropriate data, as determined by the Administrator, on nitrogen oxides emissions from the affected facility, waste destruction efficiencies, waste composition (including nitrogen content), the quantity of specific wastes to be combusted and combustion conditions to allow the Administrator to determine if the affected facility is able to comply with the nitrogen oxides emission limits required by this section. The owner or operator of the affected facility shall demonstrate that when hazardous waste is combusted in the affected facility, thermal destruction efficiency requirements for hazardous waste specified in an applicable federally enforceable requirement preclude compliance with the nitrogen oxides emission limits of this section. The nitrogen oxides emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) of this section, as appropriate, are applicable to the affected facility until and unless the petition is approved by the Administrator. (See 40 CFR 761.70 for regulations applicable to the incineration of materials containing polychlorinated biphenyls (PCB's).)

(h) For purposes of paragraph (i) of this section, the nitrogen oxide standards under this section apply at all times including periods of startup, shutdown, or malfunction.

(i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

(j) Compliance with the emission limits under this section is determined on a 24-hour average basis for the initial performance test and on a 3-hour average basis for subsequent performance tests for any affected facilities that:

(1) Combust, alone or in combination, only natural gas, distillate oil, or residual oil with a nitrogen content of 0.30 weight percent or less;

(2) Have a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil with a nitrogen content of 0.30 weight percent or less; and

(3) Are subject to a Federally enforceable requirement limiting operation of the affected facility to the firing of natural gas, distillate oil, and/or residual oil with a nitrogen content of 0.30 weight percent or less and limiting operation of the affected facility to a combined annual capacity factor of 10 percent or less for natural gas, distillate oil, and residual oil and a nitrogen content of 0.30 weight percent or less.

(k) Affected facilities that meet the criteria described in paragraphs (j) (1), (2), and (3) of this section, and that have a heat input capacity of 73 MW (250 million Btu/hour) or less, are not subject to the nitrogen oxides emission limits under this section.

(l) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility which commenced construction or reconstruction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides (expressed as NO_2) in excess of the following limits:

(1) If the affected facility combusts coal, oil, or natural gas, or a mixture of these fuels, or with any other fuels: A limit of 86 ng/J_I (0.20 lb/million Btu) heat input unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas; or

(2) If the affected facility has a low heat release rate and combusts natural gas or distillate oil in excess of 30 percent of the heat input from the combustion of all fuels, a limit determined by use of the following formula:

$$E_n = [(0.10 * H_{go}) + (0.20 * H_r)]/(H_{go} + H_r)$$

Where:

E_n is the NO_X emission limit, (lb/million Btu),

H_{go} is the heat input from combustion of natural gas or distillate oil, and

H_r is the heat input from combustion of any other fuel.

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51825, Dec. 18, 1989; 63 FR 49454, Sept. 16, 1998; 66 FR 42610, Aug. 14, 2001]

§ 60.45b Compliance and performance test methods and procedures for sulfur dioxide.

(a) The sulfur dioxide emission standards under § 60.42b apply at all times.

(b) In conducting the performance tests required under § 60.8, the owner or operator shall use the methods and procedures in appendix A of this part or the methods and procedures as specified in this section, except as provided in § 60.8(b). Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(c) The owner or operator of an affected facility shall conduct performance tests to determine compliance with the percent of potential sulfur dioxide emission rate (% P_s) and the sulfur dioxide emission rate (E_s) pursuant to § 60.42b following the procedures listed below, except as provided under paragraph (d) of this section.

(1) The initial performance test shall be conducted over the first 30 consecutive operating days of the steam generating unit. Compliance with the sulfur dioxide standards shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility.

(2) If only coal or only oil is combusted, the following procedures are used:

(i) The procedures in Method 19 are used to determine the hourly sulfur dioxide emission rate (E_{ho}) and the 30-day average emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the continuous emission monitoring system of § 60.47b (a) or (b).

(ii) The percent of potential sulfur dioxide emission rate (% P_s) emitted to the atmosphere is computed using the following formula:

$$\% P_s = 100 (1 - \% R_g/100)(1 - \% R_f/100)$$

where:

% R_g is the sulfur dioxide removal efficiency of the control device as determined by Method 19, in percent.

% R_f is the sulfur dioxide removal efficiency of fuel pretreatment as determined by Method 19, in percent.

(3) If coal or oil is combusted with other fuels, the same procedures required in paragraph (c)(2) of this section are used, except as provided in the following:

(i) An adjusted hourly sulfur dioxide emission rate ($E_{ho}{}^{o}$) is used in Equation 19–19 of Method 19 to compute an adjusted 30-day average emission rate ($E_{ao}{}^{o}$). The E_{ho} is computed using the following formula:

$$E_{ho}{}^{o} = [E_{ho} - E_w(1 - X_k)]/X_k$$

where:

$E_{ho}{}^{o}$ is the adjusted hourly sulfur dioxide emission rate, ng/J (lb/million Btu).

E_{ho} is the hourly sulfur dioxide emission rate, ng/J (lb/million Btu).

E_w is the sulfur dioxide concentration in fuels other than coal and oil combusted in the affected facility, as determined by the fuel sampling and analysis procedures in Method 19, ng/J (lb/million Btu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted.

X_k is the fraction of total heat input from fuel combustion derived from coal, oil, or coal and oil, as determined by applicable procedures in Method 19.

(ii) To compute the percent of potential sulfur dioxide emission rate (% P_s), an adjusted % R_g (% $R_g{}^{o}$) is computed from the adjusted $E_{ao}{}^{o}$ from paragraph (b)(3)(i) of this section and an adjusted average sulfur dioxide inlet rate ($E_{ai}{}^{o}$) using the following formula:

$$\% R_g{}^{o} = 100 (1.0 - E_{ao}{}^{o}/E_{ai}{}^{o})$$

To compute $E_{ai}{}^{o}$, an adjusted hourly sulfur dioxide inlet rate ($E_{hi}{}^{o}$) is used. The $E_{hi}{}^{o}$ is computed using the following formula:

$$E_{hi}{}^{o} = [E_{hi} - E_w(1 - X_k)]/X_k$$

where:

$E_{hi}{}^{o}$ is the adjusted hourly sulfur dioxide inlet rate, ng/J (lb/million Btu).

E_{hi} is the hourly sulfur dioxide inlet rate, ng/J (lb/million Btu).

(4) The owner or operator of an affected facility subject to paragraph (b)(3) of this section does not have to measure parameters E_w or X_k if the owner or operator elects to assume that X_k=1.0. Owners or operators of affected facilities who assume X_k=1.0 shall

(i) Determine % P_s following the procedures in paragraph (c)(2) of this section, and

(ii) Sulfur dioxide emissions (E_s) are considered to be in compliance with sulfur dioxide emission limits under § 60.42b.

(5) The owner or operator of an affected facility that qualifies under the provisions of § 60.42b(d) does not have to measure parameters E_w or X_k under paragraph (b)(3) of this section if the owner or operator of the affected facility elects to measure sulfur dioxide emission rates of the coal or oil following the fuel sampling and analysis procedures under Method 19.

(d) Except as provided in paragraph (j), the owner or operator of an affected facility that combusts only very low sulfur oil, has an annual capacity factor for oil of 10 percent (0.10) or less, and is subject to a Federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for oil of 10 percent (0.10) or less shall:

(1) Conduct the initial performance test over 24 consecutive steam generating unit operating hours at full load;

(2) Determine compliance with the standards after the initial performance test based on the arithmetic average of the hourly emissions data during each steam generating unit operating day if a continuous emission measurement system (CEMS) is used, or based on a daily average if Method 6B or fuel sampling and analysis procedures under Method 19 are used.

(e) The owner or operator of an affected facility subject to § 60.42b(d)(1) shall demonstrate the maximum design capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. This demonstration will be made during the initial performance test and a subsequent demonstration may be requested at any other time. If the 24-hour average firing rate for the affected facility is less than the maximum design capacity provided by the manufacturer of the affected facility, the 24-hour average firing rate shall be used to determine the capacity utilization rate for the affected facility, otherwise the maximum design capacity provided by the manufacturer is used.

(f) For the initial performance test required under § 60.8, compliance with the sulfur dioxide emission limits and percent reduction requirements under § 60.42b is based on the average emission rates and the average percent reduction for sulfur dioxide for the first 30 consecutive steam generating unit operating days, except as provided under paragraph (d) of this section. The initial performance test is the only test for which at least 30 days prior notice is required unless otherwise specified by the Administrator. The initial performance test is to be scheduled so that the first steam generating unit operating day of the 30 successive steam generating unit operating days is completed within 30 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of the facility. The boiler load during the 30-day period does not have to be the maximum design load, but must be representative of future operating conditions and include at least one 24-hour period at full load.

(g) After the initial performance test required under § 60.8, compliance with the sulfur dioxide emission limits and percent reduction requirements under § 60.42b is based on the average emission rates and the average percent reduction for sulfur dioxide for 30 successive steam generating unit operating days, except as provided under paragraph (d). A separate performance test is completed at the end of each steam generating unit operating day after the initial performance test, and a new 30-day average emission rate and percent reduction for sulfur dioxide are calculated to show compliance with the standard.

(h) Except as provided under paragraph (i) of this section, the owner or operator of an affected facility shall use all valid sulfur dioxide emissions data in calculating % P_s and E_{ho} under paragraph (c), of this section whether or not the minimum emissions data requirements under § 60.46b are achieved. All valid emissions data, including valid sulfur dioxides emission data collected during periods of startup, shutdown and malfunction, shall be used in calculating % P_s and E_{ho} pursuant to paragraph (c) of this section.

(i) During periods of malfunction or maintenance of the sulfur dioxide control systems when oil is combusted as provided under § 60.42b(i), emission data are not used to calculate % P_s or E_s under § 60.42b (a), (b) or (c), however, the emissions data are used to determine compliance with the emission limit under § 60.42b(i).

(j) The owner or operator of an affected facility that combusts very low sulfur oil is not subject to the compliance and performance testing requirements of this section if the owner or operator obtains fuel receipts as described in § 60.49b(r).

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51820, 51825, Dec. 18, 1989]

§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

(a) The particulate matter emission standards and opacity limits under § 60.43b apply at all times except during periods of startup, shutdown, or malfunction. The nitrogen oxides emission standards under § 60.44b apply at all times.

(b) Compliance with the particulate matter emission standards under § 60.43b shall be determined through performance testing as described in paragraph (d) of this section.

(c) Compliance with the nitrogen oxides emission standards under § 60.44b shall be determined through performance testing under paragraph (e) or (f), or under paragraphs (g) and (h) of this section, as applicable.

(d) To determine compliance with the particulate matter emission limits and opacity limits under § 60.43b, the owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8 using the following procedures and reference methods:

(1) Method 3B is used for gas analysis when applying Method 5 or Method 17.

(2) Method 5, Method 5B, or Method 17 shall be used to measure the concentration of particulate matter as follows:

(i) Method 5 shall be used at affected facilities without wet flue gas desulfurization (FGD) systems; and

(ii) Method 17 may be used at facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of sections 2.1 and 2.3 of Method 5B may be used in Method 17 only if it is used after a wet FGD system. Do not use Method 17 after wet FGD systems if the effluent is saturated or laden with water droplets.

(iii) Method 5B is to be used only after wet FGD systems.

(3) Method 1 is used to select the sampling site and the number of traverse sampling points. The sampling time for each run is at least 120 minutes and the minimum sampling volume is 1.7 dscm (60 dscf) except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(4) For Method 5, the temperature of the sample gas in the probe and filter holder is monitored and is maintained at 160±14 °C (320±25 °F).

(5) For determination of particulate matter emissions, the oxygen or carbon dioxide sample is obtained simultaneously with each run of Method 5, Method 5B or Method 17 by traversing the duct at the same sampling location.

(6) For each run using Method 5, Method 5B or Method 17, the emission rate expressed in nanograms per joule heat input is determined using:

(i) The oxygen or carbon dioxide measurements and particulate matter measurements obtained under this section,

(ii) The dry basis F factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19.

(7) Method 9 is used for determining the opacity of stack emissions.

(e) To determine compliance with the emission limits for nitrogen oxides required under § 60.44b, the owner or operator of an affected facility shall conduct the performance test as required under § 60.8 using the continuous system for monitoring nitrogen oxides under § 60.48(b).

(1) For the initial compliance test, nitrogen oxides from the steam generating unit are monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the nitrogen oxides emission standards under § 60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

(2) Following the date on which the initial performance test is completed or is required to be completed under § 60.8 of this part, whichever date comes first, the owner or operator of an affected facility which combusts coal or which combusts residual oil having a nitrogen content greater than 0.30 weight percent shall determine compliance with the nitrogen oxides emission standards under § 60.44b on a continuous basis through the use of a 30-day rolling average emission rate. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

(3) Following the date on which the initial performance test is completed or is required to be completed under § 60.8 of this part, whichever date comes first, the owner or operator of an affected facility which has a heat input capacity greater than 73 MW (250 million Btu/hour) and which combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight percent or less shall determine compliance with the nitrogen oxides standards under § 60.44b on a continuous basis through the use of a 30-day rolling average emission rate. A new

30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

(4) Following the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, the owner or operator of an affected facility which has a heat input capacity of 73 MW (250 million Btu/hour) or less and which combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight percent or less shall upon request determine compliance with the nitrogen oxides standards under § 60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, nitrogen oxides emissions data collected pursuant to § 60.48b(g)(1) or § 60.48b(g)(2) are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the nitrogen oxides emission standards. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

(5) If the owner or operator of an affected facility which combusts residual oil does not sample and analyze the residual oil for nitrogen content, as specified in § 60.49b(e), the requirements of paragraph (iii) of this section apply and the provisions of paragraph (iv) of this section are inapplicable.

(f) To determine compliance with the emissions limits for NO_X required by § 60.44b(a)(4) or § 60.44b(l) for duct burners used in combined cycle systems, either of the procedures described in paragraph (f)(1) or (2) of this section may be used:

(1) The owner or operator of an affected facility shall conduct the performance test required under § 60.8 as follows:

(i) The emissions rate (E) of NO_X shall be computed using Equation of 1 this section:

$$E = Esg + (Hg / Hb)(Esg - Eg) \quad \text{(Eq. 1)}$$

Where:

E = emissions rate of NO_X from the duct burner, ng/J (lb/million Btu) heat input
Esg = combined effluent emissions rate, in ng/J (lb/million Btu) heat input using appropriate F-Factor as described in Method 19
Hg = heat input rate to the combustion turbine, in Joules/hour (million Btu/hour)
Hb = heat input rate to the duct burner, in Joules/hour (million Btu/hour)
Eg = emissions rate from the combustion turbine, in ng/J (lb/million Btu) heat input calculated using appropriate F-Factor as described in Method 19

(ii) Method 7E of appendix A of this part shall be used to determine the NO_X concentrations. Method 3A or 3B of appendix A of this part shall be used to determine oxygen concentration.

(iii) The owner or operator shall identify and demonstrate to the Administrator's satisfaction suitable methods to determine the average hourly heat input rate to the combustion turbine and the average hourly heat input rate to the affected duct burner.

(iv) Compliance with the emissions limits under § 60.44b (a)(4) or § 60.44b(l) is determined by the three-run average (nominal 1-hour runs) for the initial and subsequent performance tests; or

(2) The owner or operator of an affected facility may elect to determine compliance on a 30-day rolling average basis by using the continuous emission monitoring system specified under § 60.48b for measuring NO_X and oxygen and meet the requirements of § 60.48b. The sampling site shall be located at the outlet from the steam generating unit. The NO_X emissions rate at the outlet from the steam generating unit shall constitute the NO_X emissions rate from the duct burner of the combined cycle system.

(g) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) shall demonstrate the maximum heat input capacity of the steam generating unit by operating the facility at maximum capacity for 24 hours. The owner or operator of an affected facility shall determine the maximum heat input capacity using the heat loss method described in sections 5 and 7.3 of the ASME *Power Test Codes* 4.1 (see IBR § 60.17(h)). This demonstration of maximum heat input capacity shall be made during the initial performance test for affected facilities that meet the criteria of § 60.44b(j). It shall be made within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start-up of each facility, for affected facilities meeting the criteria of § 60.44b(k). Subsequent demonstrations may be required by the Administrator at any other time. If this demonstration indicates that the maximum heat input capacity of the affected facility is less than that stated by the manufacturer of the affected facility, the maximum heat input capacity determined during this demonstration shall be used to determine the capacity utilization rate for the affected facility. Otherwise, the maximum heat input capacity provided by the manufacturer is used.

(h) The owner or operator of an affected facility described in § 60.44b(j) that has a heat input capacity greater than 73 MW (250 million Btu/hour) shall:

(1) Conduct an initial performance test as required under § 60.8 over a minimum of 24 consecutive steam generating unit operating hours at maximum heat input capacity to demonstrate compliance with the nitrogen oxides emission standards under § 60.44b using Method 7, 7A, 7E, or other approved reference methods; and

(2) Conduct subsequent performance tests once per calendar year or every 400 hours of operation (whichever comes first) to demonstrate compliance with the nitrogen oxides emission standards under § 60.44b over a minimum of 3 consecutive steam generating unit operating hours at maximum heat input capacity using Method 7, 7A, 7E, or other approved reference methods.

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51820, 51825, Dec. 18, 1989; 55 FR 18876, May 7, 1990; 65 FR 61752, Oct. 17, 2000; 66 FR 18553, Apr. 10, 2001]

§ 60.47b Emission monitoring for sulfur dioxide.

(a) Except as provided in paragraphs (b) and (f) of this section, the owner or operator of an affected facility subject to the sulfur dioxide standards under § 60.42b shall install, calibrate, maintain, and operate continuous emission monitoring systems (CEMS) for measuring sulfur dioxide concentrations and either oxygen (O_2) or carbon dioxide (CO_2) concentrations and shall record the output of the systems. The sulfur dioxide and either oxygen or carbon dioxide concentrations shall both be monitored at the inlet and outlet of the sulfur dioxide control device.

(b) As an alternative to operating CEMS as required under paragraph (a) of this section, an owner or operator may elect to determine the average sulfur dioxide emissions and percent reduction by:

(1) Collecting coal or oil samples in an as-fired condition at the inlet to the steam generating unit and analyzing them for sulfur and heat content according to Method 19. Method 19 provides procedures for converting these measurements into the format to be used in calculating the average sulfur dioxide input rate, or

(2) Measuring sulfur dioxide according to Method 6B at the inlet or outlet to the sulfur dioxide control system. An initial stratification test is required to verify the adequacy of the Method 6B sampling location. The stratification test shall consist of three paired runs of a suitable sulfur dioxide and carbon dioxide measurement train operated at the candidate location and a second similar train operated according to the procedures in section 3.2 and the applicable procedures in section 7 of Performance Specification 2. Method 6B, Method 6A, or a combination of Methods 6 and 3 or 3B or Methods 6C and 3A are suitable measurement techniques. If Method 6B is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent.

(3) A daily sulfur dioxide emission rate, E_D, shall be determined using the procedure described in Method 6A, section 7.6.2 (Equation 6A–8) and stated in ng/J (lb/million Btu) heat input.

(4) The mean 30-day emission rate is calculated using the daily measured

values in ng/J (lb/million Btu) for 30 successive steam generating unit operating days using equation 19–20 of Method 19.

(c) The owner or operator of an affected facility shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive boiler operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator or the reference methods and procedures as described in paragraph (b) of this section.

(d) The 1-hour average sulfur dioxide emission rates measured by the CEMS required by paragraph (a) of this section and required under §60.13(h) is expressed in ng/J or lb/million Btu heat input and is used to calculate the average emission rates under §60.42b. Each 1-hour average sulfur dioxide emission rate must be based on more than 30 minutes of steam generating unit operation and include at least 2 data points with each representing a 15-minute period. Hourly sulfur dioxide emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 (appendix B).

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F).

(3) For affected facilities combusting coal or oil, alone or in combination with other fuels, the span value of the sulfur dioxide CEMS at the inlet to the sulfur dioxide control device is 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the fuel combusted, and the span value of the CEMS at the outlet to the sulfur dioxide control device is 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the fuel combusted.

(f) The owner or operator of an affected facility that combusts very low sulfur oil is not subject to the emission monitoring requirements of this section if the owner or operator obtains fuel receipts as described in §60.49b(r).

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51820, Dec. 18, 1989; 55 FR 5212, Feb. 14, 1990; 55 FR 18876, May 7, 1990]

§ 60.48b Emission monitoring for particulate matter and nitrogen oxides.

(a) The owner or operator of an affected facility subject to the opacity standard under §60.43b shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the opacity of emissions discharged to the atmosphere and record the output of the system.

(b) Except as provided under paragraphs (g), (h), and (i) of this section, the owner or operator of an affected facility shall comply with either paragraphs (b)(1) or (b)(2) of this section.

(1) Install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere; or

(2) If the owner or operator has installed a nitrogen oxides emission rate continuous emission monitoring system (CEMS) to meet the requirements of part 75 of this chapter and is continuing to meet the ongoing requirements of part 75 of this chapter, that CEMS may be used to meet the requirements of this section, except that the owner or operator shall also meet the requirements of §60.49b. Data reported to meet the requirements of §60.49b shall not include data substituted using the missing data procedures in subpart D of part 75 of this chapter, nor shall the data have been bias adjusted according to the procedures of part 75 of this chapter.

(c) The continuous monitoring systems required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(d) The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor required by paragraph (b) of this section and required under § 60.13(h) shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average emission rates under § 60.44b. The 1-hour averages shall be calculated using the data points required under § 60.13(b). At least 2 data points must be used to calculate each 1-hour average.

(e) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.

(1) For affected facilities combusting coal, wood or municipal-type solid waste, the span value for a continuous monitoring system for measuring opacity shall be between 60 and 80 percent.

(2) For affected facilities combusting coal, oil, or natural gas, the span value for nitrogen oxides is determined as follows:

Fuel	Span values for nitrogen oxides (PPM)
Natural gas	500
Oil	500
Coal	1,000
Mixtures	500(x+y)+1,000z

where:

x is the fraction of total heat input derived from natural gas,

y is the fraction of total heat input derived from oil, and

z is the fraction of total heat input derived from coal.

(3) All span values computed under paragraph (e)(2) of this section for combusting mixtures of regulated fuels are rounded to the nearest 500 ppm.

(f) When nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

(g) The owner or operator of an affected facility that has a heat input capacity of 73 MW (250 million Btu/hour) or less, and which has an annual capacity factor for residual oil having a nitrogen content of 0.30 weight percent or less, natural gas, distillate oil, or any mixture of these fuels, greater than 10 percent (0.10) shall:

(1) Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of this section, or

(2) Monitor steam generating unit operating conditions and predict nitrogen oxides emission rates as specified in a plan submitted pursuant to § 60.49b(c).

(h) The owner or operator of a duct burner, as described in § 60.41b, which is subject to the NO_X standards of § 60.44b(a)(4) or § 60.44b(l) is not required to install or operate a continuous emissions monitoring system to measure NO_X emissions.

(i) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) is not required to install or operate a continuous monitoring system for measuring nitrogen oxides emissions.

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51825, Dec. 18, 1989; 63 FR 49455, Sept. 16, 1998; 66 FR 18553, Apr. 10, 2001]

§ 60.49b Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by § 60.7. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility,

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §§ 60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(iii), 60.44b(c), (d), (e), (i), (j), (k), 60.45b(d), (g), 60.46b(h), or 60.48b(i),

(3) The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired, and,

(4) Notification that an emerging technology will be used for controlling

emissions of sulfur dioxide. The Administrator will examine the description of the emerging technology and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42b(a) unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the sulfur dioxide, particulate matter, and/or nitrogen oxides emission limits under §§60.42b, 60.43b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B. The owner or operator of each affected facility described in §60.44b(j) or §60.44b(k) shall submit to the Administrator the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility.

(c) The owner or operator of each affected facility subject to the nitrogen oxides standard of §60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions under the provisions of §60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored under §60.48b(g)(2) and the records to be maintained under §60.49b(j). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. The plan shall:

(1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and nitrogen oxides emission rates (i.e., ng/J or lbs/million Btu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (i.e., the ratio of primary air to secondary and/or tertiary air) and the level of excess air (i.e., flue gas oxygen level);

(2) Include the data and information that the owner or operator used to identify the relationship between nitrogen oxides emission rates and these operating conditions;

(3) Identify how these operating conditions, including steam generating unit load, will be monitored under §60.48b(g) on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator under §60.49b(j).

If the plan is approved, the owner or operator shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan.

(d) The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

(e) For an affected facility that combusts residual oil and meets the criteria under §§60.46b(e)(4), 60.44b (j), or (k), the owner or operator shall maintain records of the nitrogen content of the residual oil combusted in the affected facility and calculate the average fuel nitrogen content for the reporting period. The nitrogen content shall be determined using ASTM Method D3431–80, Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons (IBR-see §60.17), or fuel suppliers. If residual oil blends are being combusted, fuel nitrogen specifications may be prorated based on the ratio of residual oils of different nitrogen content in the fuel blend.

(f) For facilities subject to the opacity standard under § 60.43b, the owner or operator shall maintain records of opacity.

(g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the nitrogen oxides standards under § 60.44b shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date.

(2) The average hourly nitrogen oxides emission rates (expressed as NO_2) (ng/J or lb/million Btu heat input) measured or predicted.

(3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days.

(4) Identification of the steam generating unit operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions standards under § 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken.

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data.

(7) Identification of ‘‘F’’ factor used for calculations, method of determination, and type of fuel combusted.

(8) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system.

(9) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(h) The owner or operator of any affected facility in any category listed in paragraphs (h) (1) or (2) of this section is required to submit excess emission reports for any excess emissions which occurred during the reporting period.

(1) Any affected facility subject to the opacity standards under § 60.43b(e) or to the operating parameter monitoring requirements under § 60.13(i)(1).

(2) Any affected facility that is subject to the nitrogen oxides standard of § 60.44b, and that

(i) Combusts natural gas, distillate oil, or residual oil with a nitrogen content of 0.3 weight percent or less, or

(ii) Has a heat input capacity of 73 MW (250 million Btu/hour) or less and is required to monitor nitrogen oxides emissions on a continuous basis under § 60.48b(g)(1) or steam generating unit operating conditions under § 60.48b(g)(2).

(3) For the purpose of § 60.43b, excess emissions are defined as all 6-minute periods during which the average opacity exceeds the opacity standards under § 60.43b(f).

(4) For purposes of § 60.48b(g)(1), excess emissions are defined as any calculated 30-day rolling average nitrogen oxides emission rate, as determined under § 60.46b(e), which exceeds the applicable emission limits in § 60.44b.

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for nitrogen oxides under § 60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

(j) The owner or operator of any affected facility subject to the sulfur dioxide standards under § 60.42b shall submit reports.

(k) For each affected facility subject to the compliance and performance testing requirements of § 60.45b and the reporting requirement in paragraph (j) of this section, the following information shall be reported to the Administrator:

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average sulfur dioxide emission rate (ng/J or 1b/million Btu heat input) measured during the reporting period, ending with the last 30-day period; reasons for noncompliance

with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent reduction in sulfur dioxide emissions calculated during the reporting period, ending with the last 30-day period; reasons for noncompliance with the emission standards; and a description of corrective actions taken.

(4) Identification of the steam generating unit operating days that coal or oil was combusted and for which sulfur dioxide or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours in the steam generating unit operating day; justification for not obtaining sufficient data; and description of corrective action taken.

(5) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of ''F'' factor used for calculations, method of determination, and type of fuel combusted.

(7) Identification of times when hourly averages have been obtained based on manual sampling methods.

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS.

(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3.

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(11) The annual capacity factor of each fired as provided under paragraph (d) of this section.

(l) For each affected facility subject to the compliance and performance testing requirements of §60.45b(d) and the reporting requirements of paragraph (j) of this section, the following information shall be reported to the Administrator:

(1) Calendar dates when the facility was in operation during the reporting period;

(2) The 24-hour average sulfur dioxide emission rate measured for each steam generating unit operating day during the reporting period that coal or oil was combusted, ending in the last 24-hour period in the quarter; reasons for noncompliance with the emission standards; and a description of corrective actions taken;

(3) Identification of the steam generating unit operating days that coal or oil was combusted for which sulfur dioxide or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and description of corrective action taken.

(4) Identification of the times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and description of corrective action taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(5) Identification of ''F'' factor used for calculations, method of determination, and type of fuel combusted.

(6) Identification of times when hourly averages have been obtained based on manual sampling methods.

(7) Identification of the times when the pollutant concentration exceeded full span of the CEMS.

(8) Description of any modifications to the CEMS which could affect the ability of the CEMS to comply with Performance Specification 2 or 3.

(9) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(m) For each affected facility subject to the sulfur dioxide standards under §60.42(b) for which the minimum amount of data required under §60.47b(f) were not obtained during the reporting period, the following information is reported to the Administrator in addition to that required under paragraph (k) of this section:

(1) The number of hourly averages available for outlet emission rates and inlet emission rates.

(2) The standard deviation of hourly averages for outlet emission rates and

inlet emission rates, as determined in Method 19, section 7.

(3) The lower confidence limit for the mean outlet emission rate and the upper confidence limit for the mean inlet emission rate, as calculated in Method 19, section 7.

(4) The ratio of the lower confidence limit for the mean outlet emission rate and the allowable emission rate, as determined in Method 19, section 7.

(n) If a percent removal efficiency by fuel pretreatment (i.e., % R_f) is used to determine the overall percent reduction (i.e., % R_o) under § 60.45b, the owner or operator of the affected facility shall submit a signed statement with the report.

(1) Indicating what removal efficiency by fuel pretreatment (i.e., % R_f) was credited during the reporting period;

(2) Listing the quantity, heat content, and date each pre-treated fuel shipment was received during the reporting period, the name and location of the fuel pretreatment facility; and the total quantity and total heat content of all fuels received at the affected facility during the reporting period.

(3) Documenting the transport of the fuel from the fuel pretreatment facility to the steam generating unit.

(4) Including a signed statement from the owner or operator of the fuel pretreatment facility certifying that the percent removal efficiency achieved by fuel pretreatment was determined in accordance with the provisions of Method 19 (appendix A) and listing the heat content and sulfur content of each fuel before and after fuel pretreatment.

(o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of such record.

(p) The owner or operator of an affected facility described in § 60.44b(j) or (k) shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date,

(2) The number of hours of operation, and

(3) A record of the hourly steam load.

(q) The owner or operator of an affected facility described in § 60.44b(j) or § 60.44b(k) shall submit to the Administrator a report containing:

(1) The annual capacity factor over the previous 12 months;

(2) The average fuel nitrogen content during the reporting period, if residual oil was fired; and

(3) If the affected facility meets the criteria described in § 60.44b(j), the results of any nitrogen oxides emission tests required during the reporting period, the hours of operation during the reporting period, and the hours of operation since the last nitrogen oxides emission test.

(r) The owner or operator of an affected facility who elects to demonstrate that the affected facility combusts only very low sulfur oil under § 60.42b(j)(2) shall obtain and maintain at the affected facility fuel receipts from the fuel supplier which certify that the oil meets the definition of distillate oil as defined in § 60.41b. For the purposes of this section, the oil need not meet the fuel nitrogen content specification in the definition of distillate oil. Reports shall be submitted to the Administrator certifying that only very low sulfur oil meeting this definition was combusted in the affected facility during the reporting period.

(s) Facility specific nitrogen oxides standard for Cytec Industries Fortier Plant's C.AOG incinerator located in Westwego, Louisiana:

(1) *Definitions.*

Oxidation zone is defined as the portion of the C.AOG incinerator that extends from the inlet of the oxidizing zone combustion air to the outlet gas stack.

Reducing zone is defined as the portion of the C.AOG incinerator that extends from the burner section to the inlet of the oxidizing zone combustion air.

Total inlet air is defined as the total amount of air introduced into the C.AOG incinerator for combustion of natural gas and chemical by-product waste and is equal to the sum of the air flow into the reducing zone and the air flow into the oxidation zone.

(2) *Standard for nitrogen oxides.* (i) When fossil fuel alone is combusted, the nitrogen oxides emission limit for fossil fuel in § 60.44b(a) applies.

(ii) When natural gas and chemical by-product waste are simultaneously combusted, the nitrogen oxides emission limit is 289 ng/J (0.67 lb/million Btu) and a maximum of 81 percent of the total inlet air provided for combustion shall be provided to the reducing zone of the C.AOG incinerator.

(3) *Emission monitoring.* (i) The percent of total inlet air provided to the reducing zone shall be determined at least every 15 minutes by measuring the air flow of all the air entering the reducing zone and the air flow of all the air entering the oxidation zone, and compliance with the percentage of total inlet air that is provided to the reducing zone shall be determined on a 3-hour average basis.

(ii) The nitrogen oxides emission limit shall be determined by the compliance and performance test methods and procedures for nitrogen oxides in §60.46b(i).

(iii) The monitoring of the nitrogen oxides emission limit shall be performed in accordance with §60.48b.

(4) *Reporting and recordkeeping requirements.* (i) The owner or operator of the C.AOG incinerator shall submit a report on any excursions from the limits required by paragraph (a)(2) of this section to the Administrator with the quarterly report required by paragraph (i) of this section.

(ii) The owner or operator of the C.AOG incinerator shall keep records of the monitoring required by paragraph (a)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner of operator of the C.AOG incinerator shall perform all the applicable reporting and recordkeeping requirements of this section.

(t) Facility-specific nitrogen oxides standard for Rohm and Haas Kentucky Incorporated's Boiler No. 100 located in Louisville, Kentucky:

(1) *Definitions.*

Air ratio control damper is defined as the part of the low nitrogen oxides burner that is adjusted to control the split of total combustion air delivered to the reducing and oxidation portions of the combustion flame.

Flue gas recirculation line is defined as the part of Boiler No. 100 that recirculates a portion of the boiler flue gas back into the combustion air.

(2) *Standard for nitrogen oxides.* (i) When fossil fuel alone is combusted, the nitrogen oxides emission limit for fossil fuel in §60.44b(a) applies.

(ii) When fossil fuel and chemical byproduct waste are simultaneously combusted, the nitrogen oxides emission limit is 473 ng/J (1.1 lb/million Btu), and the air ratio control damper tee handle shall be at a minimum of 5 inches (12.7 centimeters) out of the boiler, and the flue gas recirculation line shall be operated at a minimum of 10 percent open as indicated by its valve opening position indicator.

(3) *Emission monitoring for nitrogen oxides.* (i) The air ratio control damper tee handle setting and the flue gas recirculation line valve opening position indicator setting shall be recorded during each 8-hour operating shift.

(ii) The nitrogen oxides emission limit shall be determined by the compliance and performance test methods and procedures for nitrogen oxides in §60.46b.

(iii) The monitoring of the nitrogen oxides emission limit shall be performed in accordance with §60.48b.

(4) *Reporting and recordkeeping requirements.* (i) The owner or operator of Boiler No. 100 shall submit a report on any excursions from the limits required by paragraph (b)(2) of this section to the Administrator with the quarterly report required by §60.49b(i).

(ii) The owner or operator of Boiler No. 100 shall keep records of the monitoring required by paragraph (b)(3) of this section for a period of 2 years following the date of such record.

(iii) The owner of operator of Boiler No. 100 shall perform all the applicable reporting and recordkeeping requirements of §60.49b.

(u) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* (1) This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia (''site'') and only to the natural gas-fired boilers installed as part of the powerhouse conversion required pursuant to 40 CFR 52.2454(g). The requirements of this paragraph shall apply, and the requirements of §§ 60.40b through 60.49b(t) shall not apply, to the natural gas-fired boilers installed pursuant to 40 CFR 52.2454(g).

(i) The site shall equip the natural gas-fired boilers with low nitrogen oxide (NO_X) technology.

(ii) The site shall install, calibrate, maintain, and operate a continuous monitoring and recording system for measuring NO_X emissions discharged to the atmosphere and opacity using a continuous emissions monitoring system or a predictive emissions monitoring system.

(iii) Within 180 days of the completion of the powerhouse conversion, as required by 40 CFR 52.2454, the site shall perform a stack test to quantify criteria pollutant emissions.

(2) [Reserved]

(v) The owner or operator of an affected facility may submit electronic quarterly reports for SO_2 and/or NO_X and/or opacity in lieu of submitting the written reports required under paragraphs (h), (i), (j), (k) or (l) of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.

(w) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[52 FR 47842, Dec. 16, 1987, as amended at 54 FR 51820, 51825, Dec. 18, 1989; 60 FR 28062, May 30, 1995; 61 FR 14031, Mar. 29, 1996; 62 FR 52641, Oct. 8, 1997; 63 FR 49455, Sept. 16, 1998; 64 FR 7464, Feb. 12, 1999; 65 FR 13243, Mar. 13, 2000]

Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

SOURCE: 55 FR 37683, Sept. 12, 1990, unless otherwise noted.

§ 60.40c Applicability and delegation of authority.

(a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million Btu per hour (Btu/hr)) or less, but greater than or equal to 2.9 MW (10 million Btu/hr).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units which meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§ 60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in § 60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under § 60.14.

[55 FR 37683, Sept. 12, 1990, as amended at 61 FR 20736, May 8, 1996]

§ 60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam ch a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society for Testing and Materials in ASTM D388–77, ''Standard Specification for Classification of Coals by Rank'' (incorporated by reference—see § 60.17); coal refuse; and petroleum coke. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Cogeneration steam generating unit means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, ''Standard Specification for Fuel Oils'' (incorporated by reference—see § 60.17).

Dry flue gas desulfurization technology means a sulfur dioxide (SO_2) control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR Parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

Natural gas means (1) a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane, or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835–86, 87, 91, or 97, ''Standard Specification for Liquefied Petroleum Gases'' (incorporated by reference—see § 60.17).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule [ng/J], or pounds per million Btu [lb/million Btu] heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396–78, 89, 90, 92, 96, or 98, ''Standard Specification for Fuel Oils'' (incorporated by reference—see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Wet flue gas desulfurization technology means an SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of particulate matter (PM) or SO_2.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[55 FR 37683, Sept. 12, 1990, as amended at 61 FR 20736, May 8, 1996; 65 FR 61752, Oct. 17, 2000]

§60.42c Standard for sulfur dioxide.

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, the owner or operator of an affected facility that combusts only coal shall neither: (1) cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction); nor (2) cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 90 percent SO_2 reduction requirement specified in this paragraph and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, the owner or operator of an affected facility that:

(1) Combusts coal refuse alone in a fluidized bed combustion steam generating unit shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 20 percent (0.20) of the potential SO_2 emission rate (80 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/million Btu) heat input. If coal is fired with coal refuse, the affected facility is subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 90 percent SO_2 reduction requirement specified in paragraph (a) of this section and the emission limit determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of SO_2 emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 50 percent (0.50) of the potential SO_2 emission rate (50 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 260 ng/J (0.60 lb/million Btu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO_2 reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under paragraphs (c)(1), (2), (3), or (4).

(1) Affected facilities that have a heat input capacity of 22 MW (75 million Btu/hr) or less.

(2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a Federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.

(3) Affected facilities located in a noncontinental area.

(4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.

(d) On and after the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the following:

(1) The percent of potential SO_2 emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that

(i) Combusts coal in combination with any other fuel,

(ii) Has a heat input capacity greater than 22 MW (75 million Btu/hr), and

(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and

(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$E_s=(K_a\ H_a+K_b\ H_b+K_c\ H_c)/H_a+H_b+H_c)$$

where:

E_s is the SO_2 emission limit, expressed in ng/J or lb/million Btu heat input,

K_a is 520 ng/J (1.2 lb/million Btu),

K_b is 260 ng/J (0.60 lb/million Btu),

K_c is 215 ng/J (0.50 lb/million Btu),

H_a is the heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [million Btu]

H_b is the heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (million Btu)

H_c is the heat input from the combustion of oil, in J (million Btu).

(f) Reduction in the potential SO_2 emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:

(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO_2 emission rate; and

(2) Emissions from the pretreated fuel (without either combustion or post-combustion SO_2 control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), or (3) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under § 60.48c(f)(1), (2), or (3), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 million Btu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(3) Coal-fired facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 million Btu/hr).

(i) The SO_2 emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) Only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.43c Standard for particulate matter.

(a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.051 lb/million Btu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/million Btu) heat imput if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(b) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:

(1) 43 ng/J (0.10 lb/million Btu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or

(2) 130 ng/J (0.30 lb/million Btu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity.

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

(a) Except as provided in paragraphs (g) and (h) of this section and in § 60.8(b), performance tests required under § 60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(b) The initial performance test required under § 60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO_2 emission limits under § 60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affect facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.

(c) After the initial performance test required under paragraph (b) and § 60.8, compliance with the percent reduction requirements and SO_2 emission limits under § 60.42c is based on the average percent reduction and the average $S0_2$ emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO_2 emission rate are calculated to show compliance with the standard.

(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 are used to determine the hourly SO_2 emission rate (E_{ho}) and the 30-day average SO_2 emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the continuous emission monitoring system (CEMS). Method 19 shall be used to calculate E_{ao} when using daily fuel sampling or Method 6B.

(e) If coal, oil, or coal and oil are combusted with other fuels:

(1) An adjusted E_{ho} ($E_{ho}o$) is used in Equation 19–19 of Method 19 to compute the adjusted E_{ao} ($E_{ao}o$). The $E_{ho}o$ is computed using the following formula:

$$E_{ho}o=[E_{ho}-E_w(1-X_k)]/X_k$$

where:

$E_{ho}o$ is the adjusted E_{ho}, ng/J (lb/million Btu)

E_{ho} is the hourly SO_2 emission rate, ng/J (lb/million Btu)

E_w is the SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9, ng/J (lb/million Btu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume $E_w=0$.

X_k is the fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19.

(2) The owner or operator of an affected facility that qualifies under the provisions of § 60.42c(c) or (d) [where percent reduction is not required] does not have to measure the parameters E_w or X_k if the owner or operator of the affected facility elects to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19.

(f) Affected facilities subject to the percent reduction requirements under § 60.42c(a) or (b) shall determine compliance with the SO_2 emission limits under § 60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

(1) If only coal is combusted, the percent of potential SO_2 emission rate is computed using the following formula:

$$\%P_s=100(1-\%R_g/100)(1-\%R_f/100)$$

where

$\%P_s$ is the percent of potential SO_2 emission rate, in percent

$\%R_g$ is the SO_2 removal efficiency of the control device as determined by Method 19, in percent

$\%R_f$ is the SO_2 removal efficiency of fuel pretreatment as determined by Method 19, in percent

(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:

(i) To compute the $\%P_s$, an adjusted $\%R_g$ ($\%R_go$) is computed from $E_{ao}o$ from paragraph (e)(1) of this section and an adjusted average SO_2 inlet rate ($E_{ai}o$) using the following formula:

$$\%R_go=100\ [1.0-E_{ao}o/E_{ai}o)]$$

where:

$\%R_go$ is the adjusted $\%R_g$, in percent

$E_{ao}o$ is the adjusted E_{ao}, ng/J (lb/million Btu)

$E_{ai}o$ is the adjusted average SO_2 inlet rate, ng/J (lb/million Btu)

(ii) To compute $E_{ai}o$, an adjusted hourly SO_2 inlet rate ($E_{hi}o$) is used. The $E_{hi}o$ is computed using the following formula:

$$E_{hi}o=[E_{hi}-E_w\ (1-X_k)]/X_k$$

where:

$E_{hi}o$ is the adjusted E_{hi}, ng/J (lb/million Btu)

E_{hi} is the hourly SO_2 inlet rate, ng/J (lb/million Btu)

E_w is the SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19, ng/J (lb/million Btu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume E_w = O.

X_k is the fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under §60.46c(d)(2).

(h) For affected facilities subject to §60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, the performance test shall consist of the certification, the certification from the fuel supplier, as described under §60.48c(f)(1), (2), or (3), as applicable.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO_2 standards under §60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(j) The owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under §60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating $\%P_s$ or E_{ho} pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

§60.45c Compliance and performance test methods and procedures for particulate matter.

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under §60.43c shall conduct an initial performance test as required under §60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods.

(1) Method 1 shall be used to select the sampling site and the number of traverse sampling points.

(2) Method 3 shall be used for gas analysis when applying Method 5, Method 5B, or Method 17.

(3) Method 5, Method 5B, or Method 17 shall be used to measure the concentration of PM as follows:

(i) Method 5 may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B may be used in Method 17 only if Method 17 is used in conjunction with a wet scrubber system. Method 17 shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B may be used in conjunction with a wet scrubber system.

(4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(5) For Method 5 or Method 5B, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160±14 °C (320±25 °F).

(6) For determination of PM emissions, an oxygen or carbon dioxide measurement shall be obtained simultaneously with each run of Method 5, Method 5B, or Method 17 by traversing

the duct at the same sampling location.

(7) For each run using Method 5, Method 5B, or Method 17, the emission rates expressed in ng/J (lb/million Btu) heat input shall be determined using:

(i) The oxygen or carbon dioxide measurements and PM measurements obtained under this section,

(ii) The dry basis F-factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 (appendix A).

(8) Method 9 (6-minute average of 24 observations) shall be used for determining the opacity of stack emissions.

(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under § 60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.46c Emission monitoring for sulfur dioxide

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO_2 emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO_2 concentrations and either oxygen or carbon dioxide concentrations at the outlet of the SO_2 control device (or the outlet of the steam generating unit if no SO_2 control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under § 60.42c shall measure SO_2 concentrations and either oxygen or carbon dioxide concentrations at both the inlet and outlet of the SO_2 control device.

(b) The 1-hour average SO_2 emission rates measured by a CEMS shall be expressed in ng/J or lb/million Btu heat input and shall be used to calculate the average emission rates under § 60.42c. Each 1-hour average SO_2 emission rate must be based on at least 30 minutes of operation and include at least 2 data points representing two 15-minute periods. Hourly SO_2 emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(c) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 (appendix B).

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F).

(3) For affected facilities subject to the percent reduction requirements under § 60.42c, the span value of the SO_2 CEMS at the inlet to the SO_2 control device shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted, and the span value of the SO_2 CEMS at the outlet from the SO_2 control device shall be 50 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of § 60.42c, the span value of the SO_2 CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average

SO_2 emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by using Method 6B. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19. Method 19 provides procedures for converting these measurements into the format to be used in calculating the average SO_2 input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fule tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B may be used in lieu of CEMS to measure SO_2 at the inlet or outlet of the SO_2 control system. An initial stratification test is required to verify the adequacy of the Method 6B sampling location. The stratification test shall consist of three paired runs of a suitable SO_2 and carbon dioxide measurement train operated at the candidate location and a second similar train operated according to the procedures in §3.2 and the applicable procedures in section 7 of Performance Specification 2 (appendix B). Method 6B, Method 6A, or a combination of Methods 6 and 3 or Methods 6C and 3A are suitable measurement techniques. If Method 6B is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to §60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, as described under §60.48c(f) (1), (2), or (3), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

§60.47c Emission monitoring for particulate matter.

(a) The owner or operator of an affected facility combusting coal, residual oil, or wood that is subject to the opacity standards under §60.43c shall install, calibrate, maintain, and operate a COMS for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system.

(b) All COMS for measuring opacity shall be operated in accordance with the applicable procedures under Performance Specification 1 (appendix B). The span value of the opacity COMS shall be between 60 and 80 percent.

[55 FR 37683, Sept. 12, 1990, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by § 60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under § 60.42c, or § 60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2 emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B.

(c) The owner or operator of each coal-fired, residual oil-fired, or wood-fired affected facility subject to the opacity limits under § 60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility which occur during the reporting period.

(d) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit reports to the Administrator.

(e) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.43c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO_2 emission rate (nj/J or lb/million Btu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO_2 emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO_2 or diluent (oxygen or carbon dioxide) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 (appendix B).

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), or (3) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier; and

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in §60.41c.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(g) The owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day.

(h) The owner or operator of each affected facility subject to a Federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under §60.42c or §60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.

(i) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record.

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[55 FR 37683, Sept. 12, 1990, as amended at 64 FR 7465, Feb. 12, 1999; 65 FR 61753, Oct. 17, 2000]

Subpart E—Standards of Performance for Incinerators

§60.50 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each incinerator of more than 45 metric tons per day charging rate (50 tons/day), which is the affected facility.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977]

§ 60.51 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Incinerator* means any furnace used in the process of burning solid waste for the purpose of reducing the volume of the waste by removing combustible matter.

(b) *Solid waste* means refuse, more than 50 percent of which is municipal type waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustibles, and noncombustible materials such as glass and rock.

(c) *Day* means 24 hours.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 20792, June 14, 1974]

§ 60.52 Standard for particulate matter.

(a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator subject to the provisions of this part shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.18 g/dscm (0.08 gr/dscf) corrected to 12 percent CO_2.

[39 FR 20792, June 14, 1974, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.53 Monitoring of operations.

(a) The owner or operator of any incinerator subject to the provisions of this part shall record the daily charging rates and hours of operation.

§ 60.54 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standard in § 60.52 as follows:

(1) The concentration (c_{12}) of particulate matter, corrected to 12 percent CO_2, shall be computed for each run using the following equation:

$$c_{12} = c_s\,(12/\%CO_2)$$

where:

c_{12}=concentration of particulate matter, corrected to 12 percent CO_2, g/dscm (gr/dscf).

c_s=concentration of particulate matter, g/dscm (gr/dscf).

$\%CO_2$=CO_2 concentration, percent dry basis.

(2) Method 5 shall be used to determine the particulate matter concentration (c_s). The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The emission rate correction factor, integrated or grab sampling and analysis procedure of Method 3B shall be used to determine CO_2 concentration ($\%CO_2$).

(i) The CO_2 sample shall be obtained simultaneously with, and at the same traverse points as, the particulate run. If the particulate run has more than 12 traverse points, the CO_2 traverse points may be reduced to 12 if Method 1 is used to locate the 12 CO_2 traverse points. If individual CO_2 samples are taken at each traverse point, the CO_2 concentration ($\%CO_2$) used in the correction equation shall be the arithmetic mean of the sample CO_2 concentrations at all traverse points.

(ii) If sampling is conducted after a wet scrubber, an ''adjusted'' CO_2 concentration [$(\%CO_2)_{adj}$], which accounts for the effects of CO_2 absorption and dilution air, may be used instead of the CO_2 concentration determined in this paragraph. The adjusted CO_2 concentration shall be determined by either of the procedures in paragraph (c) of this section.

(c) The owner or operator may use either of the following procedures to determine the adjusted CO_2 concentration.

(1) The volumetric flow rates at the inlet and outlet of the wet scrubber and the inlet CO_2 concentration may be used to determine the adjusted CO_2 concentration [$(\%CO_2)_{adj}$] using the following equation:

$(\%CO_2)_{adj}=(\%CO_2)_{di}\ (Q_{di}/Q_{do})$

where:

$(\%CO_2)_{adj}$=adjusted outlet CO_2 concentration, percent dry basis.

$(\%CO_2)_{di}$=CO_2 concentration measured before the scrubber, percent dry basis.

Q_{di}=volumetric flow rate of effluent gas before the wet scrubber, dscm/min (dscf/min).

Q_{do}=volumetric flow rate of effluent gas after the wet scrubber, dscm/min (dscf/min).

(i) At the outlet, Method 5 is used to determine the volumetric flow rate (Q_{do}) of the effluent gas.

(ii) At the inlet, Method 2 is used to determine the volumetric flow rate (Q_{di}) of the effluent gas as follows: Two full velocity traverses are conducted, one immediately before and one immediately after each particulate run conducted at the outlet, and the results are averaged.

(iii) At the inlet, the emission rate correction factor, integrated sampling and analysis procedure of Method 3B is used to determine the CO_2 concentration [$(\%CO_2)_{di}$] as follows: At least nine sampling points are selected randomly from the velocity traverse points and are divided randomly into three sets, equal in number of points; the first set of three or more points is used for the first run, the second set for the second run, and the third set for the third run. The CO_2 sample is taken simultaneously with each particulate run being conducted at the outlet, by traversing the three sampling points (or more) and sampling at each point for equal increments of time.

(2) Excess air measurements may be used to determine the adjusted CO_2 concentration [$(\%CO_2)_{adj}$] using the following equation:

$(\%CO_2)_{adj}=(\%CO_2)_{di}\ [(100+\%EA_i)/(100+\%EA_o)]$

where:

$(\%CO_2)_{adj}$=adjusted outlet CO_2 concentration, percent dry basis.

$(\%CO_2)_{di}$=CO_2 concentration at the inlet of the wet scrubber, percent dry basis.

$\%EA_i$=excess air at the inlet of the scrubber, percent.

$\%EA_o$=excess air at the outlet of the scrubber, percent.

(i) A gas sample is collected as in paragraph (c)(1)(iii) of this section and the gas samples at both the inlet and outlet locations are analyzed for CO_2, O_2, and N_2.

(ii) Equation 3B–3 of Method 3B is used to compute the percentages of excess air at the inlet and outlet of the wet scrubber.

[54 FR 6665, Feb. 14, 1989, as amended at 55 FR 5212, Feb. 14, 1990; 65 FR 61753, Oct. 17, 2000]

Subpart Ea—Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After December 20, 1989 and on or Before September 20, 1994

SOURCE: 56 FR 5507, Feb. 11, 1991, unless otherwise noted.

§ 60.50a Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each municipal waste combustor unit with a municipal waste combustor unit capacity greater than 225 megagrams per day (250 tons per day) of municipal solid waste for which construction, modification, or reconstruction is commenced as specified in paragraphs (a)(1) and (a)(2) of this section.

(1) Construction is commenced after December 20, 1989 and on or before September 20, 1994.

(2) Modification or reconstruction is commenced after December 20, 1989 and on or before June 19, 1996.

(b) [Reserved]

(c) Any unit combusting a single-item waste stream of tires is not subject to this subpart if the owner or operator of the unit:

(1) Notifies the Administrator of an exemption claim; and

(2) Provides data documenting that the unit qualifies for this exemption.

(d) Any cofired combustor, as defined under § 60.51a, located at a plant that meets the capacity specifications in paragraph (a) of this section is not subject to this subpart if the owner or operator of the cofired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides a copy of the federally enforceable permit (specified in the

definition of cofired combustor in this section); and

(3) Keeps a record on a calendar quarter basis of the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor.

(e) Any cofired combustor that is subject to a federally enforceable permit limiting the operation of the combustor to no more than 225 megagrams per day (250 tons per day) of municipal solid waste is not subject to this subpart.

(f) Physical or operational changes made to an existing municipal waste combustor unit primarily for the purpose of complying with emission guidelines under subpart Cb are not considered a modification or reconstruction and do not result in an existing municipal waste combustor unit becoming subject to this subpart.

(g) A qualifying small power production facility, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy is not subject to this subpart if the owner or operator of the facility notifies the Administrator of an exemption claim and provides data documenting that the facility qualifies for this exemption.

(h) A qualifying cogeneration facility, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy (such as heat) that are used for industrial, commercial, heating, or cooling purposes, is not subject to this subpart if the owner or operator of the facility notifies the Administrator of an exemption claim and provides data documenting that the facility qualifies for this exemption.

(i) Any unit required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(j) Any materials recovery facility (including primary or secondary smelters) that combusts waste for the primary purpose of recovering metals is not subject to this subpart.

(k) Pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit (as defined in § 60.51a) are not subject to this subpart if the owner or operator of the plastics/rubber recycling unit keeps records of: the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis; the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis; and the name and address of the purchaser of the feedstocks. The combustion of gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units are not subject to this subpart.

(l) The following authorities shall be retained by the Administrator and not transferred to a State:

None.

(m) This subpart shall become effective on August 12, 1991.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65384, Dec. 19, 1995]

§ 60.51a Definitions.

ASME means the American Society of Mechanical Engineers.

Batch MWC means an MWC unit designed such that it cannot combust MSW continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed while combustion is occurring.

Bubbling fluidized bed combustor means a fluidized bed combustor in which the majority of the bed material remains in a fluidized state in the primary combustion zone.

Calendar quarter means a consecutive 3-month period (nonoverlapping) beginning on January 1, April 1, July 1, and October 1.

Chief facility operator means the person in direct charge and control of the operation of an MWC and who is responsible for daily on-site supervision, technical direction, management, and overall performance of the facility.

Circulating fluidized bed combustor means a fluidized bed combustor in which the majority of the fluidized bed material is carried out of the primary combustion zone and is transported back to the primary zone through a recirculation loop.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include yard waste, which is defined elsewhere in this section, or construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles), which are exempt from the definition of municipal solid waste in this section.

Cofired combustor means a unit combusting municipal solid waste with nonmunicipal solid waste fuel (e.g., coal, industrial process waste) and subject to a federally enforceable permit limiting the unit to combusting a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal solid waste as measured on a calendar quarter basis.

Continuous emission monitoring system or *CEMS* means a monitoring system for continuously measuring the emissions of a pollutant from an affected facility.

Continuous monitoring system means the total equipment used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Dioxin/furan means total tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Federally-enforceable means all limitations and conditions that are enforceable by the Administrator including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Four-hour block average or *4-hour block average* means the average of all hourly emission rates when the affected facility is operating and combusting MSW measured over 4-hour periods of time from 12 midnight to 4 a.m., 4 a.m. to 8 a.m., 8 a.m. to 12 noon, 12 noon to 4 p.m., 4 p.m. to 8 p.m., and 8 p.m. to 12 midnight.

Large municipal waste combustor plant means a municipal waste combustor plant with a municipal waste combustor aggregate plant capacity for affected facilities that is greater than 225 megagrams per day (250 tons per day) of municipal solid waste.

Mass burn refractory municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, this includes combustors with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a cylindrical rotary waterwall furnace.

Mass burn waterwall municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a waterwall furnace.

Maximum demonstrated municipal waste combustor unit load means the highest 4-hour arithmetic average municipal waste combustor unit load achieved during four consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under §60.53a.

Maximum demonstrated particulate matter control device temperature means the highest 4-hour arithmetic average flue gas temperature measured at the particulate matter control device inlet during four consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under §60.53a.

Modification or *modified municipal waste combustor unit* means a municipal waste combustor unit to which changes have been made if the cumulative cost of the changes, over the life of the unit, exceed 50 percent of the original cost of construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs; or any physical change in the municipal waste combustor unit or change in the method of operation of the municipal waste combustor unit increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111. Increases in the amount of any air pollutant emitted by the municipal waste combustor unit are determined at 100-percent physical load capability and downstream of all air pollution control devices, with no consideration given for load restrictions based on permits or other nonphysical operational restrictions.

Modular excess air MWC means a combustor that combusts MSW and that is not field-erected and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved air MWC means a combustor that combusts MSW and that is not field-erected and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or *municipal-type solid waste* or *MSW* means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff). Household, commercial/retail, and institutional wastes include:

(1) Yard waste;

(2) Refuse-derived fuel; and

(3) Motor vehicle maintenance materials limited to vehicle batteries and tires except as specified in § 60.50a(c).

Municipal waste combustor, MWC, or *municipal waste combustor unit:* (1) Means any setting or equipment that combusts solid, liquid, or gasified MSW including, but not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved-air or excess-air), boilers (i.e., steam-generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Municipal waste combustors do not include pyrolysis/combustion units located at plastics/ rubber recycling units (as specified in § 60.50a(k) of this section). Municipal waste combustors do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of an MWC are defined as follows. The MWC unit includes, but is not limited to, the MSW fuel feed system, grate system, flue gas system, bottom ash system, and the combustor water system. The MWC boundary starts at the MSW pit or hopper and extends through:

(i) The combustor flue gas system, which ends immediately following the heat recovery equipment or, if there is no heat recovery equipment, immediately following the combustion chamber;

(ii) The combustor bottom ash system, which ends at the truck loading station or similar ash handling equipment that transfer the ash to final disposal, including all ash handling systems that are connected to the bottom ash handling system; and

(iii) The combustor water system, which starts at the feed water pump and ends at the piping exiting the steam drum or superheater.

(3) The MWC unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine generator set.

Municipal waste combustor plant means one or more MWC units at the same location for which construction, modification, or reconstruction is commenced after December 20, 1989 and on or before September 20, 1994.

Municipal waste combustor plant capacity means the aggregate MWC unit capacity of all MWC units at an MWC plant for which construction, modification, or reconstruction of the units commenced after December 20, 1989 and on or before September 20, 1994. Any MWC units for which construction, modification, or reconstruction is commenced on or before December 20, 1989 or after September 20, 1994 are not included for determining applicability under this subpart.

Municipal waste combustor unit capacity means the maximum design charging rate of an MWC unit expressed in megagrams per day (tons per day) of MSW combusted, calculated according to the procedures under §60.58a(j). Municipal waste combustor unit capacity is calculated using a design heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound) for MSW. The calculational procedures under §60.58a(j) include procedures for determining MWC unit capacity for continuous and batch feed MWC's.

Municipal waste combustor unit load means the steam load of the MWC unit measured as specified in §60.58a(h)(6).

MWC acid gases means all acid gases emitted in the exhaust gases from MWC units including, but not limited to, sulfur dioxide and hydrogen chloride gases.

MWC metals means metals and metal compounds emitted in the exhaust gases from MWC units.

MWC organics means organic compounds emitted in the exhaust gases from MWC units and includes total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans.

Particulate matter means total particulate matter emitted from MWC units as measured by Method 5 (see §60.58a).

Plastics/rubber recycling unit means an integrated processing unit where plastics, rubber, and/or rubber tires are the only feed materials (incidental contaminants may be included in the feed materials) and they are processed into a chemical plant feedstock or petroleum refinery feedstock, where the feedstock is marketed to and used by a chemical plant or petroleum refinery as input feedstock. The combined weight of the chemical plant feedstock and petroleum refinery feedstock produced by the plastics/rubber recycling unit on a calendar quarter basis shall be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires processed by the plastics/rubber recycling unit on a calendar quarter basis. The plastics, rubber, and/or rubber tire feed materials to the plastics/rubber recycling unit may originate from the separation or diversion of plastics, rubber, or rubber tires from MSW or industrial solid waste, and may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards. The plastics, rubber, and rubber tire feed materials to the plastics/rubber recycling unit may contain incidental contaminants (e.g., paper labels on plastic bottles, metal rings on plastic bottle caps, etc.).

Potential hydrogen chloride emission rate means the hydrogen chloride emission rate that would occur from combustion of MSW in the absence of any hydrogen chloride emissions control.

Potential sulfur dioxide emission rate means the sulfur dioxide emission rate that would occur from combustion of MSW in the absence of any sulfur dioxide emissions control.

Pulverized coal/refuse-derived fuel mixed fuel-fired combustor or *pulverized coal/RDF mixed fuel-fired combustor* means a combustor that fires coal and RDF simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is fired in suspension. This includes both conventional pulverized coal and micropulverized coal.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids through the heating of MSW, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere.

Reconstruction means rebuilding an MWC unit for which the cumulative costs of the construction over the life of the unit exceed 50 percent of the original cost of construction and installation of the unit (not including any cost of land purchased in connection with such construction or installation) updated to current costs (current dollars).

Refractory unit or *refractory wall furnace* means a combustion unit having no energy recovery (e.g., via a waterwall) in the furnace (i.e., radiant heat transfer section) of the combustor.

Refuse-derived fuel or *RDF* means a type of MSW produced by processing MSW through shredding and size classification.

This includes all classes of RDF including low density fluff RDF through densified RDF and RDF fuel pellets.

RDF stoker means a steam generating unit that combusts RDF in a semi-suspension firing mode using air-fed distributors.

Same location means the same or contiguous property that is under common ownership or control, including properties that are separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof, including any municipality or other governmental unit, or any quasi-governmental authority (e.g., a public utility district or regional waste disposal authority).

Shift supervisor means the person in direct charge and control of the operation of an MWC and who is responsible for on-site supervision, technical direction, management, and overall performance of the facility during an assigned shift.

Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor or *spreader stoker coal/RDF mixed fuel-fired combustor* means a combustor that fires coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Standard conditions means a temperature of 20 °C (68 °F) and a pressure of 101.3 kilopascals (29.92 inches of mercury).

Twenty-four hour daily average or *24-hour daily average* means the arithmetic or geometric mean (as specified in § 60.58a (e), (g), or (h) as applicable) of all hourly emission rates when the affected facility is operating and firing MSW measured over a 24-hour period between 12 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or ''pressure-treated.'' Pressure-treating compounds include, but are not limited to, chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a combustion unit having energy (heat) recovery in the furnace (i.e., radiant heat transfer section) of the combustor.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs that are generated by residential, commercial/retail, institutional, and/or industrial sources as part of maintenance activities associated with yards or other private or public lands. Yard waste does not include construction, renovation, and demolition wastes, which are exempt from the definition of MSW in this section. Yard waste does not include clean wood, which is exempt from the definition of MSW in this section.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65384, Dec. 19, 1995; 65 FR 61753, Oct. 17, 2000]

§ 60.52a Standard for municipal waste combustor metals.

(a) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of 34 milligrams per dry standard cubic meter (0.015 grains per dry standard cubic foot), corrected to 7 percent oxygen (dry basis).

(b) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility subject to the particulate matter emission limit under paragraph (a) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 10 percent opacity (6-minute average).

(c) [Reserved]

§ 60.53a Standard for municipal waste combustor organics.

(a) [Reserved]

(b) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain dioxin/furan emissions that exceed 30 nanograms per dry standard cubic meter (12 grains per billion dry standard cubic feet), corrected to 7 percent oxygen (dry basis).

§ 60.54a Standard for municipal waste combustor acid gases.

(a)–(b) [Reserved]

(c) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain sulfur dioxide in excess of 20 percent of the potential sulfur dioxide emission rate (80 percent reduction by weight or volume) or 30 parts per million by volume, corrected to 7 percent oxygen (dry basis), whichever is less stringent. The averaging time is specified in § 60.58a(e).

(d) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain hydrogen chloride in excess of 5 percent of the potential hydrogen chloride emission rate (95 percent reduction by weight or volume) or 25 parts per million by volume, corrected to 7 percent oxygen (dry basis), whichever is less stringent.

§ 60.55a Standard for nitrogen oxides.

On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 180 parts per million by volume, corrected to 7 percent oxygen (dry basis). The averaging time is specified under § 60.58a(g).

§ 60.56a Standards for municipal waste combustor operating practices.

(a) On and after the date on which the initial compliance test is completed or is required to be completed under § 60.8, no owner or operator of an affected facility located within a large MWC plant shall cause such facility to exceed the carbon monoxide standards shown in table 1.

TABLE 1—MWC OPERATING STANDARDS

MWC technology	Carbon monoxide emission limit (parts per million by volume) [1]
Mass burn waterwall	100
Mass burn refractory	100
Mass burn rotary waterwall	100
Modular starved air	50
Modular excess air	50
RDF stoker	150
Bubbling fluidized bed combustor	100
Circulating fluidized bed combustor	100
Pulverized coal/RDF mixed fuel-fired combustor	150
Spreader stoker coal/RDF mixed fuel-fird combustor	150

[1] Measured at the combustor outlet in conjunction with a measurement of oxygen concentration, corrected to 7 percent oxygen (dry basis). The averaging times are specified in § 60.58a(h).

(b) No owner or operator of an affected facility located within a large MWC plant shall cause such facility to operate at a load level greater than 110 percent of the *maximum demonstrated MWC unit load* as defined in § 60.51a. The averaging time is specified under § 60.58a(h).

(c) No owner or operator of an affected facility located within a large MWC plant shall cause such facility to operate at a temperature, measured at the final particulate matter control device inlet, exceeding 17 °Centigrade (30 °Fahrenheit) above the *maximum demonstrated* particulate matter control device temperature as defined in § 60.51a. The averaging time is specified under § 60.58a(h).

(d) Within 24 months from the date of start-up of an affected facility or before February 11, 1993, whichever is later, each chief facility operator and shift supervisor of an affected faciltiy located within a large MWC plant shall obtain and keep current either a provisional or operator certification in accordance with ASME QRO–1–1994 (incorporated by reference, see § 60.17) or an equivalent State-approved certification program.

(e) No owner or operator of an affected facility shall allow such affected facility located at a large MWC plant to operate at any time without a certified shift supervisor, as provided under paragraph (d) of this section, on duty at the affected facility. This requirement shall take effect 24 months after the date of start-up of the affected facility or on and after February 11, 1993, whichever is later.

(f) The owner or operator of an affected facility located within a large MWC plant shall develop and update on a yearly basis a sitespecific operating manual that shall, at a minimum, address the following elements of MWC unit operation:

(1) Summary of the applicable standards under this subpart;

(2) Description of basic combustion theory applicable to an MWC unit;

(3) Procedures for receiving, handling, and feeding MSW;

(4) MWC unit start-up, shutdown, and malfunction procedures;

(5) Procedures for maintaining proper combustion air supply levels;

(6) Procedures for operating the MWC unit within the standards established under this subpart;

(7) Procedures for responding to periodic upset or off-specification conditions;

(8) Procedures for minimizing particulate matter carryover;

(9) [Reserved]

(10) Procedures for handling ash;

(11) Procedures for monitoring MWC unit emissions; and

(12) Reporting and recordkeeping procedures.

(g) The owner or operator of an affected facility located within a large MWC plant shall establish a program for reviewing the operating manual annually with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers.

(h) The initial review of the operating manual, as specified under paragraph (g) of this section, shall be conducted prior to assumption of responsibilities affecting MWC unit operation by any person required to undergo training under paragraph (g) of this section. Subsequent reviews of the manual shall be carried out annually by each such person.

(i) The operating manual shall be kept in a readily accessible location for all persons required to undergo training under paragraph (g) of this section. The operating manual and records of training shall be available for inspection by EPA or its delegated enforcement agent upon request.

(j)–(k) [Reserved]

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65386, Dec. 19, 1995]

§ 60.57a [Reserved]

§ 60.58a Compliance and performance testing.

(a) The standards under this subpart apply at all times, except during periods of start-up, shutdown, or malfunction; provided, however, that the duration of start-up, shutdown, or malfunction shall not exceed 3 hours per occurrence.

(1) The start-up period commences when the affected facility begins the continuous burning of MSW and does not include any warm-up period when the affected facility is combusting only a fossil fuel or other non-MSW fuel and no MSW is being combusted.

(2) Continuous burning is the continuous, semicontinuous, or batch feeding of MSW for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation

for waste disposal or energy production. The use of MSW solely to provide thermal protection of grate or hearth during the start-up period shall not be considered to be continuous burning.

(b) The following procedures and test methods shall be used to determine compliance with the emission limits for particulate matter under § 60.52a:

(1) Method 1 shall be used to select sampling site and number of traverse points.

(2) Method 3 shall be used for gas analysis.

(3) Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters (60 cubic feet). The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature of 160°±14 °Centigrade (320°±25 °Fahrenheit). An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.

(4) For each Method 5 run, the emission rate shall be determined using:

(i) Oxygen or carbon dioxide measurements,

(ii) Dry basis F factor, and

(iii) Dry basis emission rate calculation procedures in Method 19.

(5) An owner or operator may request that compliance be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(6) The owner or operator of an affected facility shall conduct an initial compliance test for particulate matter and opacity as required under § 60.8.

(7) Method 9 shall be used for determining compliance with the opacity limit.

(8) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) and record the output of the system on a 6-minute average basis.

(9) Following the date the initial compliance test for particulate matter is completed or is required to be completed under § 60.8 for an affected facility located within a large MWC plant, the owner or operator shall conduct a performance test for particulate matter on an annual basis (no more than 12 calendar months following the previous compliance test).

(10) [Reserved]

(c) [Reserved]

(d) The following procedures and test methods shall be used to determine compliance with the limits for dioxin/furan emissions under § 60.53a:

(1) Method 23 shall be used for determining compliance with the dioxin/furan emission limits. The minimum sample time shall be 4 hours per test run.

(2) The owner or operator of an affected facility shall conduct an initial compliance test for dioxin/furan emissions as required under § 60.8.

(3) Following the date of the initial compliance test or the date on which the initial compliance test is required to be completed under § 60.8, the owner or operator of an affected facility located within a large MWC plant shall conduct a performance test for dioxin/furan emissions on an annual basis (no more than 12 calendar months following the previous compliance test).

(4) [Reserved]

(5) An owner or operator may request that compliance with the dioxin/furan emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(e) The following procedures and test methods shall be used for determining compliance with the sulfur dioxide limit under § 60.54a:

(1) Method 19, section 5.4, shall be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission rate.

(2) Method 19, section 4.3, shall be used to determine the daily geometric average sulfur dioxide emission rate.

(3) An owner or operator may request that compliance with the sulfur dioxide emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen

and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(4) The owner or operator of an affected facility shall conduct an initial compliance test for sulfur dioxide as required under § 60.8. Compliance with the sulfur dioxide emission limit and percent reduction is determined by using a CEMS to measure sulfur dioxide and calculating a 24-hour daily geometric mean emission rate and daily geometric mean percent reduction using Method 19 sections 4.3 and 5.4, as applicable, except as provided under paragraph (e)(5) of this section.

(5) For batch MWC's or MWC units that do not operate continuously, compliance shall be determined using a daily geometric mean of all hourly average values for the hours during the day that the affected facility is combusting MSW.

(6) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system.

(7) Following the date of the initial compliance test or the date on which the initial compliance test is required to be completed under § 60.8, compliance with the sulfur dioxide emission limit or percent reduction shall be determined based on the geometric mean of the hourly arithmetic average emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using: CEMS inlet and outlet data, if compliance is based on a percent reduction; or CEMS outlet data only if compliance is based on an emission limit.

(8) At a minimum, valid CEMS data shall be obtained for 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(9) The 1-hour arithmetic averages required under paragraph (e)(7) of this section shall be expressed in parts per million (dry basis) and used to calculate the 24-hour daily geometric mean emission rates. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2). At least two data points shall be used to calculate each 1-hour arithmetic average.

(10) All valid CEMS data shall be used in calculating emission rates and percent reductions even if the minimum CEMS data requirements of paragraph (e)(8) of this section are not met.

(11) The procedures under § 60.1 3 shall be followed for installation, evaluation, and operation of the CEMS.

(12) The CEMS shall be operated according to Performance Specifications 1, 2, and 3 (appendix B of part 60).

(13) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F of part 60).

(14) The span value of the CEMS at the inlet to the sulfur dioxide control device is 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the MWC unit, and the span value of the CEMS at the outlet of the sulfur dioxide control device is 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the MWC unit.

(15) When sulfur dioxide emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or Method 19 to provide as necessary valid emission data for a minimum of 75 percent of the hours per day for 75 percent of the days per month the unit is operated and combusting MSW.

(16) Not operating a sorbent injection system for the sole purpose of testing in order to demonstrate compliance with the percent reduction standards for MWC acid gases shall not be considered a *physical change in the method of operation* under 40 CFR 52.21, or under regulations approved pursuant to 40 CFR 51.166 or 40 CFR 51.165 (a) and (b).

(f) The following procedures and test methods shall be used for determining compliance with the hydrogen chloride limits under § 60.54a:

(1) The percentage reduction in the potential hydrogen chloride emissions ($\%P_{HCl}$) is computed using the following formula:

$$\%P_{HCl} = \frac{(E_i - E_o)}{E_i} \times 100$$

where:

E_i is the potential hydrogen chloride emission rate.

E_o is the hydrogen chloride emission rate measured at the outlet of the acid gas control device.

(2) Method 26 or 26A shall be used for determining the hydrogen chloride emission rate. The minimum sampling time for Method 26 or 26A shall be 1 hour.

(3) An owner or operator may request that compliance with the hydrogen chloride emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(4) The owner or operator of an affected facility shall conduct an initial compliance test for hydrogen chloride as required under §60.8.

(5) Following the date of the initial compliance test or the date on which the initial compliance test is required under §60.8, the owner or operator of an affected facility located within a large MWC plant shall conduct a performance test for hydrogen chloride on an annual basis (no more than 12 calendar months following the previous compliance test).

(6) [Reserved]

(7) Not operating a sorbent injection system for the sole purpose of testing in order to demonstrate compliance with the percent reduction standards for MWC acid gases shall not be considered a *physical change in the method of operation* under 40 CFR 52.21, or under regulations approved pursuant to 40 CFR 51.166 or 40 CFR 51.165 (a) and (b).

(g) The following procedures and test methods shall be used to determine compliance with the nitrogen oxides limit under §60.55a:

(1) Method 19, section 4.1, shall be used for determining the daily arithmetic average nitrogen oxides emission rate.

(2) An owner or operator may request that compliance with the nitrogen oxides emissions limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(3) The owner or operator of an affected facility subject to the nitrogen oxides limit under §60.55a shall conduct an initial compliance test for nitrogen oxides as required under §60.8. Compliance with the nitrogen oxides emission standard shall be determined by using a CEMS for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission rate using Method 19, section 4.1, except as specified under paragraph (g)(4) of this section.

(4) For batch MWC's or MWC's that do not operate continuously, compliance shall be determined using a daily arithmetic average of all hourly average values for the hours during the day that the affected facility is combusting MSW.

(5) The owner or operator of an affected facility subject to the nitrogen oxides emissions limit under §60.55a shall install, calibrate, maintain, and operate a CEMS for measuring nitrogen oxides discharged to the atmosphere and record the output of the system.

(6) Following the initial compliance test or the date on which the initial compliance test is required to be completed under §60.8, compliance with the emission limit for nitrogen oxides required under §60.55a shall be determined based on the arithmetic average of the arithmetic average hourly emission rates during each 24-hour daily period measured between 12:00 midnight and the following midnight using CEMS data.

(7) At a minimum valid CEMS data shall be obtained for 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(8) The 1-hour arithmetic averages required by paragraph (g)(6) of this section shall be expressed in parts per million volume (dry basis) and used to calculate the 24-hour daily arithmetic average emission rates. The 1-hour arithmetic averages shall be calculated using the data points required under

§60.13(b). At least two data points shall be used to calculate each 1-hour arithmetic average.

(9) All valid CEMS data must be used in calculating emission rates even if the minimum CEMS data requirements of paragraph (g)(7) of this section are not met.

(10) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(11) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 (appendix F of part 60).

(12) When nitrogen oxides emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emission data calculations to determine compliance shall be made using other monitoring systems as approved by the Administrator or Method 19 to provide as necessary valid emission data for a minimum of 75 percent of the hours per day for 75 percent of the days per month the unit is operated and combusting MSW.

(h) The following procedures shall be used for determining compliance with the operating standards under §60.56a:

(1) Compliance with the carbon monoxide emission limits in §60.56a(a) shall be determined using a 4-hour block arithmetic average for all types of affected facilities except mass burn rotary waterwall MWC's, RDF stokers, and spreader stoker/RDF mixed fuel-fired combustors.

(2) For affected mass burn rotary waterwall MWC's, RDF stokers, and spreader stoker/RDF mixed fuel-fired combustors, compliance with the carbon monoxide emission limits in §60.56a(a) shall be determined using a 24-hour daily arithmetic average.

(3) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a CEMS for measuring carbon monoxide at the combustor outlet and record the output of the system.

(4) The 4-hour and 24-hour daily arithmetic averages in paragraphs (h) (1) and (2) of this section shall be calculated from 1-hour arithmetic averages expressed in parts per million by volume (dry basis). The 1-hour arithmetic averages shall be calculated using the data points generated by the CEMS. At least two data points shall be used to calculate each 1-hour arithmetic average.

(5) An owner or operator may request that compliance with the carbon monoxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established during the initial compliance test.

(6) The following procedures shall be used to determine compliance with load level requirements under §60.56a(b):

(i) The owner or operator of an affected facility with steam generation capability shall install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam or feedwater flow in kilograms per hour (pounds per hour) on a continuous basis; and record the output of the monitor. Steam or feedwater flow shall be calculated in 4-hour block arithmetic averages.

(ii) The method included in ''American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964'', Section 4 (incorporated by reference, see §60.17) shall be used for calculating the steam (or feedwater flow) required under paragraph (h)(6)(i) of this section. The recommendations of ''American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th edition (1971),'' chapter 4 (incorporated by reference, see §60.17) shall be followed for design, construction, installation, calibration, and use of nozzles and orifices except as specified in (h)(6)(iii) of this section.

(iii) Measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed.

(iv) All signal conversion elements associated with steam (or feedwater flow) measurements must be calibrated according to the manufacturer's instructions before each dioxin/furan compliance and performance test, and at least once per year.

(v) The owner or operator of an affected facility without heat recovery shall:

(A) [Reserved]

(7) To determine compliance with the maximum particulate matter control device temperature requirements under § 60.56a(c), the owner or operator of an affected facility shall install, calibrate, maintain, and operate a device for measuring temperature of the flue gas stream at the inlet to the final particulate matter control device on a continuous basis and record the output of the device. Temperature shall be calculated in 4-hour block arithmetic averages.

(8) Maximum demonstrated MWC unit load shall be determined during the initial compliance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit under § 60.53a is achieved. Maximum demonstrated MWC unit load shall be the maximum 4-hour arithmetic average load achieved during the most recent test during which compliance with the dioxin/furan limit was achieved.

(9) The maximum demonstrated particulate matter control device temperature shall be determined during the initial compliance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit under § 60.53a is achieved. Maximum demonstrated particulate matter control device temperature shall be the maximum 4-hour arithmetic average temperature achieved at the final particulate matter control device inlet during the most recent test during which compliance with the dioxin/furan limit was achieved.

(10) At a minimum, valid CEMS data for carbon monoxide, steam or feedwater flow, and particulate matter control device inlet temperature shall be obtained 75 percent of the hours per day for 75 percent of the days per month the affected facility is operated and combusting MSW.

(11) All valid data must be used in calculating the parameters specified under paragraph (h) of this section even if the minimum data requirements of paragraph (h)(10) of this section are not met.

(12) Quarterly accuracy determinations and daily calibration drift tests for carbon monoxide CEMS shall be performed in accordance with Procedure 1 (appendix F).

(i) [Reserved]

(j) The following procedures shall be used for calculating *MWC unit capacity* as defined under § 60.51a:

(1) For MWC units capable of combusting MSW continuously for a 24-hour period, MWC unit capacity, in megagrams per day (tons per day) of MSW combusted, shall be calculated based on 24 hours of operation at the maximum design charging rate. The design heating values under paragraph (j)(4) of this section shall be used in calculating the design charging rate.

(2) For batch MWC units, MWC unit capacity, in megagrams per day (tons per day) of MSW combusted, shall be calculated as the maximum design amount of MSW that can be charged per batch multiplied by the maximum number of batches that could be processed in a 24-hour period. The maximum number of batches that could be processed in a 24-hour period is calculated as 24 hours divided by the design number of hours required to process one batch of MSW, and may include fractional batches.[1] The design heating values under paragraph (j)(4) of this section shall be used in calculating the MWC unit capacity in megagrams per day (tons per day) of MSW.

(3) [Reserved]

(4) The MWC unit capacity shall be calculated using a design heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound) for all MSW.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65387, Dec. 19, 1995; 65 FR 61753, Oct. 17, 2000]

§ 60.59a Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility located at an MWC plant with a capacity greater than 225 megagrams per day (250 tons per day) shall provide notification of intent to construct and of planned initial start-

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[1] For example, if one batch requires 16 hours, then 24/16, or 1.5 batches, could be combusted in a 24-hour period.

up date and the type(s) of fuels that they plan to combust in the affected facility. The MWC unit capacity and MWC plant capacity and supporting capacity calculations shall be provided at the time of the notification of construction.

(b) The owner or operator of an affected facility located within a small or large MWC plant and subject to the standards under § 60.52a, § 60.53a, § 60.54a, § 60.55a, § 60.56a, or § 60.57a shall maintain records of the following information for each affected facility for a period of at least 2 years:

(1) Calendar date.

(2) The emission rates and parameters measured using CEMS as specified under (b)(2) (i) and (ii) of this section:

(i) The following measurements shall be recorded in computer-readable format and on paper:

(A) All 6-minute average opacity levels required under § 60.58a(b).

(B) All 1 hour average sulfur dioxide emission rates at the inlet and outlet of the acid gas control device if compliance is based on a percent reduction, or at the outlet only if compliance is based on the outlet emission limit, as specified under § 60.58a(e).

(C) All 1-hour average nitrogen oxides emission rates as specified under § 60.58a(g).

(D) All 1-hour average carbon monoxide emission rates, MWC unit load measurements, and particulate matter control device inlet temperatures as specified under § 60.58a(h).

(ii) The following average rates shall be computed and recorded:

(A) All 24-hour daily geometric average percent reductions in sulfur dioxide emissions and all 24-hour daily geometric average sulfur dioxide emission rates as specified under § 60.58a(e).

(B) All 24-hour daily arithmetic average nitrogen oxides emission rates as specified under § 60.58a(g).

(C) All 4-hour block or 24-hour daily arithmetic average carbon monoxide emission rates, as applicable, as specified under § 60.58a(h).

(D) All 4-hour block arithmetic average MWC unit load levels and particulate matter control device inlet temperatures as specified under § 60.58a(h).

(3) Identification of the operating days when any of the average emission rates, percent reductions, or operating parameters specified under paragraph (b)(2)(ii) of this section or the opacity level exceeded the applicable limits, with reasons for such exceedances as well as a description of corrective actions taken.

(4) Identification of operating days for which the minimum number of hours of sulfur dioxide or nitrogen oxides emissions or operational data (carbon monoxide emissions, unit load, particulate matter control device temperature) have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken.

(5) Identification of the times when sulfur dioxide or nitrogen oxides emission or operational data (carbon monoxide emissions, unit load, particulate matter control device temperature) have been excluded from the calculation of average emission rates or parameters and the reasons for excluding data.

(6) The results of daily sulfur dioxide, nitrogen oxides, and carbon monoxide CEMS drift tests and accuracy assessments as required under appendix F, Procedure 1.

(7) The results of all annual performance tests conducted to determine compliance with the particulate matter, dioxin/furan and hydrogen chloride limits. For all annual dioxin/furan tests, the maximum demonstrated MWC unit load and maximum demonstrated particulate matter control device temperature shall be recorded along with supporting calculations.

(8)–(15) [Reserved]

(c) Following the initial compliance test as required under §§ 60.8 and 60.58a, the owner or operator of an affected facility located within a large MWC plant shall submit the initial compliance test data, the performance evaluation of the CEMS using the applicable performance specifications in appendix B, and the maximum demonstrated MWC unit load and maximum demonstrated particulate matter control device temperature established during the dioxin/furan compliance test.

(d) [Reserved]

(e)(1) The owner or operator of an affected facility located within a large MWC plant shall submit annual compliance reports for sulfur dioxide, nitrogen oxide (if applicable), carbon monoxide, load level, and particulate matter control device temperature to the Administrator containing the information recorded under paragraphs (b)(1), (2)(ii), (4), (5), and (6) of this section for each pollutant or parameter. The hourly average values recorded under paragraph (b)(2)(i) of this section are not required to be included in the annual reports. Combustors firing a mixture of medical waste and other MSW shall also provide the information under paragraph (b)(15) of this section, as applicable, in each annual report. The owner or operator of an affected facility must submit reports semiannually once the affected facility is subject to permitting requirements under Title V of the Act.

(2) The owner or operator shall submit a semiannual report for any pollutant or parameter that does not comply with the pollutant or parameter limits specified in this subpart. Such report shall include the information recorded under paragraph (b)(3) of this section. For each of the dates reported, include the sulfur dioxide, nitrogen oxide, carbon monoxide, load level, and particulate matter control device temperature data, as applicable, recorded under paragraphs (b)(2)(ii)(A) through (D) of this section.

(3) Reports shall be postmarked no later than the 30th day following the end of the annual or semiannual period, as applicable.

(f)(1) The owner or operator of an affected facility located within a large MWC plant shall submit annual compliance reports, as applicable, for opacity. The annual report shall list the percent of the affected facility operating time for the reporting period that the opacity CEMS was operating and collecting valid data. Once the unit is subject to permitting requirements under Title V of the Act, the owner or operator of an affected facility must submit these reports semiannually.

(2) The owner or operator shall submit a semiannual report for all periods when the 6-minute average levels exceeded the opacity limit under §60.52a. The semiannual report shall include all information recorded under paragraph (b)(3) of this section which pertains to opacity, and a listing of the 6-minute average opacity levels recorded under paragraph (b)(2)(i)(A) of this section, which exceeded the opacity limit.

(3) Reports shall be postmarked no later than the 30th day following the end of the annual of semiannual period, as applicable.

(g)(1) The owner or operator of an affected facility located within a large MWC plant shall submit reports to the Administrator of all annual performance tests for particulate matter, dioxin/furan, and hydrogen chloride as recorded under paragraph (b)(7) of this section, as applicable, from the affected facility. For each annual dioxin/furan compliance test, the maximum demonstrated MWC unit load and maximum demonstrated particulate matter control device temperature shall be reported. Such reports shall be submitted when available and in no case later than the date of required submittal of the annual report specified under paragraphs (e) and (f) of this section, or within six months of the date the test was conducted, whichever is earlier.

(2) The owner or operator shall submit a report of test results which document any particulate matter, dioxin/furan, and hydrogen chloride levels that were above the applicable pollutant limit. The report shall include a copy of the test report documenting the emission levels and shall include the corrective action taken. Such reports shall be submitted when available and in no case later than the date required for submittal of any semiannual report required in paragraphs (e) or (f) of this section, or within six months of the date the test was conducted, whichever is earlier.

(h) [Reserved]

(i) Records of CEMS data for opacity, sulfur dioxide, nitrogen oxides, and carbon monoxide, load level data, and particulate matter control device temperature data shall be maintained for at least 2 years after date of recordation and be made available for inspection upon request.

(j) Records showing the names of persons who have completed review of the operating manual, including the date of the initial review and all subsequent annual reviews, shall be maintained for at least 2 years after date of review and be made available for inspection upon request.

[56 FR 5507, Feb. 11, 1991, as amended at 60 FR 65387, Dec. 19, 1995; 64 FR 7465, Feb. 12, 1999]

Subpart Eb—Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996

SOURCE: 60 FR 65419, Dec. 19, 1995, unless otherwise noted.

§ 60.50b Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each municipal waste combustor unit with a combustion capacity greater than 250 tons per day of municipal solid waste for which construction is commenced after September 20, 1994 or for which modification or reconstruction is commenced after June 19, 1996.

(b) Any waste combustion unit that is capable of combusting more than 250 tons per day of municipal solid waste and is subject to a federally enforceable permit limiting the maximum amount of municipal solid waste that may be combusted in the unit to less than or equal to 11 tons per day is not subject to this subpart if the owner or operator:

(1) Notifies the EPA Administrator of an exemption claim;

(2) Provides a copy of the federally enforceable permit that limits the firing of municipal solid waste to less than 11 tons per day; and

(3) Keeps records of the amount of municipal solid waste fired on a daily basis.

(c) An affected facility to which this subpart applies is not subject to subpart E or Ea of this part.

(d) Physical or operational changes made to an existing municipal waste combustor unit primarily for the purpose of complying with emission guidelines under subpart Cb are not considered a modification or reconstruction and do not result in an existing municipal waste combustor unit becoming subject to this subpart.

(e) A qualifying small power production facility, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy is not subject to this subpart if the owner or operator of the facility notifies the EPA Administrator of this exemption and provides data documenting that the facility qualifies for this exemption.

(f) A qualifying cogeneration facility, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), that burns homogeneous waste (such as automotive tires or used oil, but not including refuse-derived fuel) for the production of electric energy and steam or forms of useful energy (such as heat) that are used for industrial, commercial, heating, or cooling purposes, is not subject to this subpart if the owner or operator of the facility notifies the EPA Administrator of this exemption and provides data documenting that the facility qualifies for this exemption.

(g) Any unit combusting a single-item waste stream of tires is not subject to this subpart if the owner or operator of the unit:

(1) Notifies the EPA Administrator of an exemption claim; and

(2) [Reserved]

(3) Provides data documenting that the unit qualifies for this exemption.

(h) Any unit required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(i) Any materials recovery facility (including primary or secondary smelters) that combusts waste for the primary purpose of recovering metals is not subject to this subpart.

(j) Any cofired combustor, as defined under § 60.51b, that meets the capacity specifications in paragraph (a) of this section is not subject to this subpart if the owner or operator of the cofired combustor:

(1) Notifies the EPA Administrator of an exemption claim;

(2) Provides a copy of the federally enforceable permit (specified in the definition of cofired combustor in this section); and

(3) Keeps a record on a calendar quarter basis of the weight of municipal solid waste combusted at the cofired combustor and the weight of all other fuels combusted at the cofired combustor.

(k) Air curtain incinerators, as defined under §60.51b, located at a plant that meet the capacity specifications in paragraph (a) of this section and that combust a fuel stream composed of 100 percent yard waste are exempt from all provisions of this subpart except the opacity limit under §60.56b, the testing procedures under §60.58b(l), and the reporting and recordkeeping provisions under §60.59b (e) and (i).

(l) Air curtain incinerators located at plants that meet the capacity specifications in paragraph (a) of this section combusting municipal solid waste other than yard waste are subject to all provisions of this subpart.

(m) Pyrolysis/combustion units that are an integrated part of a plastics/rubber recycling unit (as defined in §60.51b) are not subject to this subpart if the owner or operator of the plastics/rubber recycling unit keeps records of the weight of plastics, rubber, and/or rubber tires processed on a calendar quarter basis; the weight of chemical plant feedstocks and petroleum refinery feedstocks produced and marketed on a calendar quarter basis; and the name and address of the purchaser of the feedstocks. The combustion of gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units are not subject to this subpart.

(n) The following authorities shall be retained by the Administrator and not transferred to a State: None.

(o) This subpart shall become effective June 19, 1996.

(p) Cement kilns firing municipal solid waste are not subject to this subpart.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45120, 45125, Aug. 25, 1997]

§60.51b Definitions.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which burning occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor.

Batch municipal waste combustor means a municipal waste combustor unit designed so that it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed while combustion is occurring.

Bubbling fluidized bed combustor means a fluidized bed combustor in which the majority of the bed material remains in a fluidized state in the primary combustion zone.

Calendar quarter means a consecutive 3-month period (nonoverlapping) beginning on January 1, April 1, July 1, and October 1.

Calendar year means the period including 365 days starting January 1 and ending on December 31.

Chief facility operator means the person in direct charge and control of the operation of a municipal waste combustor and who is responsible for daily onsite supervision, technical direction, management, and overall performance of the facility.

Circulating fluidized bed combustor means a fluidized bed combustor in which the majority of the fluidized bed material is carried out of the primary combustion zone and is transported back to the primary zone through a recirculation loop.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include yard waste, which is defined elsewhere in this section, or construction, renovation, and demolition wastes (including but not limited to railroad ties and telephone poles), which are exempt from the definition of municipal solid waste in this section.

Cofired combustor means a unit combusting municipal solid waste with nonmunicipal solid waste fuel (e.g., coal, industrial process waste) and subject to a federally enforceable permit limiting the unit to combusting a fuel feed stream, 30 percent or less of the weight of which is comprised, in aggregate, of municipal solid waste as measured on a calendar quarter basis.

Continuous emission monitoring system means a monitoring system for continuously measuring the emissions of a pollutant from an affected facility.

Dioxin/furan means tetra- through octa- chlorinated dibenzo-p-dioxins and dibenzofurans.

Federally enforceable means all limitations and conditions that are enforceable by the Administrator including the requirements of 40 CFR parts 60, 61, and 63, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

First calendar half means the period starting on January 1 and ending on June 30 in any year.

Four-hour block average or *4-hour block average* means the average of all hourly emission concentrations when the affected facility is operating and combusting municipal solid waste measured over 4-hour periods of time from 12:00 midnight to 4 a.m., 4 a.m. to 8 a.m., 8 a.m. to 12:00 noon, 12:00 noon to 4 p.m., 4 p.m. to 8 p.m., and 8 p.m. to 12:00 midnight.

Mass burn refractory municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, this includes combustors with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a cylindrical rotary waterwall furnace or on a tumbling-tile grate.

Mass burn waterwall municipal waste combustor means a field-erected combustor that combusts municipal solid waste in a waterwall furnace.

Materials separation plan means a plan that identifies both a goal and an approach to separate certain components of municipal solid waste for a given service area in order to make the separated materials available for recycling. A materials separation plan may include elements such as dropoff facilities, buy-back or deposit-return incentives, curbside pickup programs, or centralized mechanical separation systems. A materials separation plan may include different goals or approaches for different subareas in the service area, and may include no materials separation activities for certain subareas or, if warranted, an entire service area.

Maximum demonstrated municipal waste combustor unit load means the highest 4-hour arithmetic average municipal waste combustor unit load achieved during four consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under § 60.52b(c).

Maximum demonstrated particulate matter control device temperature means the highest 4-hour arithmetic average flue gas temperature measured at the particulate matter control device inlet during four consecutive hours during the most recent dioxin/furan performance test demonstrating compliance with the applicable limit for municipal waste combustor organics specified under § 60.52b(c).

Modification or *modified municipal waste combustor unit* means a municipal waste combustor unit to which changes have been made after June 19, 1996 if the cumulative cost of the changes, over the life of the unit, exceed 50 percent of the original cost of construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs; or any physical change in the municipal waste combustor unit or change in the method of operation of the municipal waste combustor unit increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111. Increases in the amount of any air pollutant emitted by the municipal waste combustor unit are determined at 100-percent physical load capability and downstream of all air pollution control devices, with no consideration given for load restrictions based on permits or other nonphysical operational restrictions.

Modular excess-air municipal waste combustor means a combustor that combusts municipal solid waste and that is not field-erected and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved-air municipal waste combustor means a combustor that combusts municipal solid waste and that is not field-erected and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or *municipal-type solid waste* or *MSW* means household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools, nonmedical waste discarded by hospitals, material discarded by nonmanufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which includes but is not limited to railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff). Household, commercial/retail, and institutional wastes include:

(1) Yard waste;

(2) Refuse-derived fuel; and

(3) Motor vehicle maintenance materials limited to vehicle batteries and tires except as specified in § 60.50b(g).

Municipal waste combustor, MWC, or *municipal waste combustor unit:* (1) Means any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected incinerators (with or without heat recovery), modular incinerators (starved-air or excess-air), boilers (i.e., steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Municipal waste combustors do not include pyrolysis/combustion units located at a plastics/rubber recycling unit (as specified in § 60.50b(m)). Municipal waste combustors do not include cement kilns firing municipal solid waste (as specified in § 60.50b(p)). Municipal waste combustors do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of a municipal solid waste combustor are defined as follows. The municipal waste combustor unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustor water system. The municipal waste combustor boundary starts at the municipal solid waste pit or hopper and extends through:

(i) The combustor flue gas system, which ends immediately following the heat recovery equipment or, if there is no heat recovery equipment, immediately following the combustion chamber,

(ii) The combustor bottom ash system, which ends at the truck loading station or similar ash handling equipment that transfer the ash to final disposal, including all ash handling systems that are connected to the bottom ash handling system; and

(iii) The combustor water system, which starts at the feed water pump and ends at the piping exiting the steam drum or superheater.

(3) The municipal waste combustor unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set.

Municipal waste combustor acid gases means all acid gases emitted in the exhaust gases from municipal waste combustor units including, but not limited to, sulfur dioxide and hydrogen chloride gases.

Municipal waste combustor metals means metals and metal compounds emitted in the exhaust gases from municipal waste combustor units.

Municipal waste combustor organics means organic compounds emitted in the exhaust gases from municipal waste combustor units and includes tetra-through octa- chlorinated dibenzo-p-dioxins and dibenzofurans.

Municipal waste combustor plant means one or more affected facilities (as defined in § 60.50b) at the same location.

Municipal waste combustor unit capacity means the maximum charging rate of a municipal waste combustor unit expressed in tons per day of municipal solid waste combusted, calculated according to the procedures under § 60.58b(j). Section 60.58b(j) includes procedures for determining municipal waste combustor unit capacity for continuous and batch feed municipal waste combustors.

Municipal waste combustor unit load means the steam load of the municipal waste combustor unit measured as specified in § 60.58b(i)(6).

Particulate matter means total particulate matter emitted from municipal waste combustor units as measured by EPA Reference Method 5 (see § 60.58b(c)).

Plastics/rubber recycling unit means an integrated processing unit where plastics, rubber, and/or rubber tires are the only feed materials (incidental contaminants may be included in the feed materials) and they are processed into a chemical plant feedstock or petroleum refinery feedstock, where the feedstock is marketed to and used by a chemical plant or petroleum refinery as input feedstock. The combined weight of the chemical plant feedstock and petroleum refinery feedstock produced by the plastics/rubber recycling unit on a calendar quarter basis shall be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires processed by the plastics/rubber recycling unit on a calendar quarter basis. The plastics, rubber, and/or rubber tire feed materials to the plastics/rubber recycling unit may originate from the separation or diversion of plastics, rubber, or rubber tires from MSW or industrial solid waste, and may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards. The plastics, rubber, and rubber tire feed materials to the plastics/rubber recycling unit may contain incidental contaminants (e.g., paper labels on plastic bottles, metal rings on plastic bottle caps, etc.).

Potential hydrogen chloride emission concentration means the hydrogen chloride emission concentration that would occur from combustion of municipal solid waste in the absence of any emission controls for municipal waste combustor acid gases.

Potential mercury emission concentration means the mercury emission concentration that would occur from combustion of municipal solid waste in the absence of any mercury emissions control.

Potential sulfur dioxide emissions means the sulfur dioxide emission concentration that would occur from combustion of municipal solid waste in the absence of any emission controls for municipal waste combustor acid gases.

Pulverized coal/refuse-derived fuel mixed fuel-fired combustor means a combustor that fires coal and refuse-derived fuel simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is fired in suspension. This includes both conventional pulverized coal and micropulverized coal.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids through the heating of municipal solid waste, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere.

Reconstruction means rebuilding a municipal waste combustor unit for which the reconstruction commenced after June 19, 1996, and the cumulative costs of the construction over the life of the unit exceed 50 percent of the original cost of construction and installation of the unit (not including any cost of land purchased in connection with such construction or installation) updated to current costs (current dollars).

Refractory unit or *refractory wall furnace* means a combustion unit having no energy recovery (e.g., via a waterwall) in the furnace (i.e., radiant heat transfer section) of the combustor.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including low-density fluff refuse-derived fuel through densified refuse-derived fuel and pelletized refuse-derived fuel.

Refuse-derived fuel stoker means a steam generating unit that combusts refuse-derived fuel in a semisuspension firing mode using air-fed distributors.

Same location means the same or contiguous property that is under common ownership or control including properties that are separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof including any municipality or other governmental unit, or any quasi-governmental authority (e.g., a public utility district or regional waste disposal authority).

Second calendar half means the period starting July 1 and ending on December 31 in any year.

Shift supervisor means the person who is in direct charge and control of the operation of a municipal waste combustor and who is responsible for onsite supervision, technical direction, management, and overall performance of the facility during an assigned shift.

Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor means a combustor that fires coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Standard conditions means a temperature of 20 °C and a pressure of 101.3 kilopascals.

Total mass dioxin/furan or *total mass* means the total mass of tetra- through octa- chlorinated dibenzo-p-dioxins and dibenzofurans, as determined using EPA Reference Method 23 and the procedures specified under § 60.58b(g).

Tumbling-tile means a grate tile hinged at one end and attached to a ram at the other end. When the ram extends, the grate tile rotates around the hinged end.

Twenty-four hour daily average or *24-hour daily average* means either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the affected facility is operating and combusting municipal solid waste measured over a 24-hour period between 12:00 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or ''pressure-treated.'' Pressure-treating compounds include, but are not limited to, chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a combustion unit having energy (heat) recovery in the furnace (i.e., radiant heat transfer section) of the combustor.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs that are generated by residential, commercial/retail, institutional, and/or industrial sources as part of maintenance activities associated with yards or other private or public lands. Yard waste does not include construction, renovation, and demolition wastes, which are exempt from the definition of municipal solid waste in this section. Yard waste does not include clean wood, which is exempt from the definition of municipal solid waste in this section.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45121, 45126, Aug. 25, 1997; 66 FR 36476, July 12, 2001]

§ 60.52b Standards for municipal waste combustor metals, acid gases, organics, and nitrogen oxides.

(a) The limits for municipal waste combustor metals are specified in paragraphs (a)(1) through (a)(5) of this section.

(1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain particulate matter in excess of 24 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(2) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 10 percent opacity (6-minute average).

(3) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain cadmium in excess of 0.020 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(4) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from the affected facility any gases that contain lead in excess of 0.20 milligrams per dry standard cubic meter, corrected to 7 percent oxygen.

(5) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from the affected facility any gases that contain mercury in excess of 0.080 milligrams per dry standard cubic meter or 15 percent of the potential mercury emission concentration (85-percent reduction by weight), corrected to 7 percent oxygen, whichever is less stringent.

(b) The limits for municipal waste combustor acid gases are specified in paragraphs (b)(1) and (b)(2) of this section.

(1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain sulfur dioxide in excess of 30 parts per million by volume or 20 percent of the potential sulfur dioxide emission concentration (80-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent. The averaging time is specified under § 60.58b(e).

(2) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain hydrogen chloride in excess of 25 parts per million by volume or 5 percent of the potential hydrogen chloride emission concentration (95-percent reduction by weight or volume), corrected to 7 percent oxygen (dry basis), whichever is less stringent.

(c) The limits for municipal waste combustor organics are specified in paragraphs (c)(1) and (c)(2) of this section.

(1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility for which construction, modification or reconstruction commences on or before November 20, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain dioxin/furan emissions that exceed 30 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen, for the first 3 years following the date of initial

startup. After the first 3 years following the date of initial startup, no owner or operator shall cause to be discharged into the atmosphere from that affected facility any gases that contain dioxin/furan total mass emissions that exceed 13 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(2) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility for which construction, modification, or reconstruction commences after November 20, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain dioxin/furan total mass emissions that exceed 13 nanograms per dry standard cubic meter (total mass), corrected to 7 percent oxygen.

(d) The limits for nitrogen oxides are specified in paragraphs (d)(1) and (d)(2) of this section.

(1) During the first year of operation after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 180 parts per million by volume, corrected to 7 percent oxygen (dry basis). The averaging time is specified under § 60.58b(h).

(2) After the first year of operation following the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides in excess of 150 parts per million by volume, corrected to 7 percent oxygen (dry basis). The averaging time is specified under § 60.58b(h).

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45121, 45126, Aug. 25, 1997]

§ 60.53b Standards for municipal waste combustor operating practices.

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain carbon monoxide in excess of the emission limits specified in table 1 of this subpart.

TABLE 1.—MUNICIPAL WASTE COMBUSTOR OPERATING STANDARDS

Municipal waste combustor technology	Carbon monoxide emission limit (parts per million by volume) [a]	Averaging time (hours) [b]
Mass burn waterwall	100	4
Mass burn refractory	100	4
Mass burn rotary waterwall	100	24
Modular starved air	50	4
Modular excess air	50	4
Refuse-derived fuel stoker	150	24
Bubbling fluidized bed combustor	100	4
Circulating fluidized bed combustor	100	4
Pulverized coal/refuse-derived fuel mixed fuel-fired combustor	150	4
Spreader stoker coal/refuse-derived fuel mixed fuel-fired combustor	150	24

[a] Measured at the combustor outlet in conjunction with a measurement of oxygen concentration, corrected to 7 percent oxygen (dry basis). The averaging times are specified in greater detail in § 60.58b(i).

[b] Averaging times are 4-hour or 24-hour block averages.

(b) No owner or operator of an affected facility shall cause such facility to operate at a load level greater than 110 percent of the maximum demonstrated municipal waste combustor unit load as defined in § 60.51b, except as specified in paragraphs (b)(1) and (b)(2) of this section. The averaging time is specified under § 60.58b(i).

(1) During the annual dioxin/furan performance test and the 2 weeks preceding the annual dioxin/furan performance test, no municipal waste combustor unit load limit is applicable.

(2) The municipal waste combustor unit load limit may be waived in accordance with permission granted by the Administrator or delegated State regulatory authority for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions.

(c) No owner or operator of an affected facility shall cause such facility to operate at a temperature, measured at the particulate matter control device inlet, exceeding 17 °C above the maximum demonstrated particulate matter control device temperature as defined in § 60.51b, except as specified in paragraphs (c)(1) and (c)(2) of this section. The averaging time is specified under § 60.58b(i). The requirements specified in this paragraph apply to each particulate matter control device utilized at the affected facility.

(1) During the annual dioxin/furan performance test and the 2 weeks preceding the annual dioxin/furan performance test, no particulate matter control device temperature limitations are applicable.

(2) The particulate matter control device temperature limits may be waived in accordance with permission granted by the Administrator or delegated State regulatory authority for the purpose of evaluating system performance, testing new technology or control technologies, diagnostic testing, or related activities for the purpose of improving facility performance or advancing the state-of-the-art for controlling facility emissions.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997]

§ 60.54b Standards for municipal waste combustor operator training and certification.

(a) No later than the date 6 months after the date of startup of an affected facility or on December 19, 1996, whichever is later, each chief facility operator and shift supervisor shall obtain and maintain a current provisional operator certification from either the American Society of Mechanical Engineers [QRO–1–1994 (incorporated by reference—see § 60.17 of subpart A of this part)] or a State certification program.

(b) Not later than the date 6 months after the date of startup of an affected facility or on December 19, 1996, whichever is later, each chief facility operator and shift supervisor shall have completed full certification or shall have scheduled a full certification exam with either the American Society of Mechanical Engineers [QRO–1–1994 (incorporated by reference—see § 60.17 of subpart A of this part)] or a State certification program.

(c) No owner or operator of an affected facility shall allow the facility to be operated at any time unless one of the following persons is on duty and at the affected facility: A fully certified chief facility operator, a provisionally certified chief facility operator who is scheduled to take the full certification exam according to the schedule specified in paragraph (b) of this section, a fully certified shift supervisor, or a provisionally certified shift supervisor who is scheduled to take the full certification exam according to the schedule specified in paragraph (b) of this section.

(1) The requirement specified in paragraph (c) of this section shall take effect 6 months after the date of startup of the affected facility or on December 19, 1996, whichever is later.

(2) If one of the persons listed in paragraph (c) of this section must leave the affected facility during their operating shift, a provisionally certified control room operator who is onsite at the affected facility may fulfill the requirement in paragraph (c) of this section.

(d) All chief facility operators, shift supervisors, and control room operators at affected facilities must complete the EPA or State municipal waste combustor operator training course no later than the date 6 months after the date of startup of the affected facility or by December 19, 1996, whichever is later.

(e) The owner or operator of an affected facility shall develop and update on a yearly basis a site-specific operating manual that shall, at a minimum, address the elements of municipal waste combustor unit operation specified in paragraphs (e)(1) through (e)(11) of this section.

(1) A summary of the applicable standards under this subpart;

(2) A description of basic combustion theory applicable to a municipal waste combustor unit;

(3) Procedures for receiving, handling, and feeding municipal solid waste;

(4) Municipal waste combustor unit startup, shutdown, and malfunction procedures;

(5) Procedures for maintaining proper combustion air supply levels;

(6) Procedures for operating the municipal waste combustor unit within the standards established under this subpart;

(7) Procedures for responding to periodic upset or off-specification conditions;

(8) Procedures for minimizing particulate matter carryover;

(9) Procedures for handling ash;

(10) Procedures for monitoring municipal waste combustor unit emissions; and

(11) Reporting and recordkeeping procedures.

(f) The owner or operator of an affected facility shall establish a training program to review the operating manual according to the schedule specified in paragraphs (f)(1) and (f)(2) of this section with each person who has responsibilities affecting the operation of an affected facility including, but not limited to, chief facility operators, shift supervisors, control room operators, ash handlers, maintenance personnel, and crane/load handlers.

(1) Each person specified in paragraph (f) of this section shall undergo initial training no later than the date specified in paragraph (f)(1)(i), (f)(1)(ii), or (f)(1)(iii) of this section whichever is later.

(i) The date 6 months after the date of startup of the affected facility;

(ii) The date prior to the day the person assumes responsibilities affecting municipal waste combustor unit operation; or

(iii) December 19, 1996.

(2) Annually, following the initial review required by paragraph (f)(1) of this section.

(g) The operating manual required by paragraph (e) of this section shall be kept in a readily accessible location for all persons required to undergo training under paragraph (f) of this section. The operating manual and records of training shall be available for inspection by the EPA or its delegated enforcement agency upon request.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997]

§ 60.55b Standards for municipal waste combustor fugitive ash emissions.

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, no owner or operator of an affected facility shall cause to be discharged to the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9 minutes per 3-hour period), as determined by EPA Reference Method 22 observations as specified in § 60.58b(k), except as provided in paragraphs (b) and (c) of this section.

(b) The emission limit specified in paragraph (a) of this section does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit specified in paragraph (a) of this section does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.

(c) The provisions specified in paragraph (a) of this section do not apply during maintenance and repair of ash conveying systems.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997]

§ 60.56b Standards for air curtain incinerators.

On and after the date on which the initial performance test is completed or is required to be completed under

§ 60.8 of subpart A of this part, the owner or operator of an air curtain incinerator with the capacity to combust greater than 250 tons per day of municipal solid waste and that combusts a fuel feed stream composed of 100 percent yard waste and no other municipal solid waste materials shall at no time cause to be discharged into the atmosphere from that incinerator any gases that exhibit greater than 10-percent opacity (6-minute average), except that an opacity level of up to 35 percent (6-minute average) is permitted during startup periods during the first 30 minutes of operation of the unit.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997]

§ 60.57b Siting requirements.

(a) The owner or operator of an affected facility for which the initial application for a construction permit under 40 CFR part 51, subpart I, or part 52, as applicable, is submitted after December 19, 1995, shall prepare a materials separation plan, as defined in § 60.51b, for the affected facility and its service area, and shall comply with the requirements specified in paragraphs (a)(1) through (a)(10) of this section. The initial application is defined as representing a good faith submittal for complying with the requirements under 40 CFR part 51, subpart I, or part 52, as applicable, as determined by the Administrator.

(1) The owner or operator shall prepare a preliminary draft materials separation plan and shall make the plan available to the public as specified in paragraphs (a)(1)(i) and (a)(1)(ii) of this section.

(i) The owner or operator shall distribute the preliminary draft materials separation plan to the principal public libraries in the area where the affected facility is to be constructed.

(ii) The owner or operator shall publish a notification of a public meeting in the principal newspaper(s) serving the area where the affected facility is to be constructed and where the waste treated by the affected facility will primarily be collected. As a minimum, the notification shall include the information specified in paragraphs (a)(1)(ii)(A) through (a)(1)(ii)(D) of this section.

(A) The date, time, and location of the public meeting.

(B) The location of the public libraries where the preliminary draft materials separation plan may be found, including normal business hours of the libraries.

(C) An agenda of the issues to be discussed at the public meeting.

(D) The dates that the public comment period on the preliminary draft materials separation plan begins and ends.

(2) The owner or operator shall conduct a public meeting, accept comments on the preliminary draft materials separation plan, and comply with the requirements specified in paragraphs (a)(2)(i) through (a)(2)(iv) of this section.

(i) The public meeting shall be conducted in the county where the affected facility is to be located.

(ii) The public meeting shall be scheduled to occur 30 days or more after making the preliminary draft materials separation plan available to the public as specified under paragraph (a)(1) of this section.

(iii) Suggested issues to be addressed at the public meeting are listed in paragraphs (a)(2)(iii)(A) through (a)(2)(iii)(H) of this section.

(A) The expected size of the service area for the affected facility.

(B) The amount of waste generation anticipated for the service area.

(C) The types and estimated amounts of materials proposed for separation.

(D) The methods proposed for materials separation.

(E) The amount of residual waste to be disposed.

(F) Alternate disposal methods for handling the residual waste.

(G) Identification of the location(s) where responses to public comment on the preliminary draft materials separation plan will be available for inspection, as specified in paragraphs (a)(3) and (a)(4) of this section.

(H) Identification of the locations where the final draft materials separation plan will be available for inspection, as specified in paragraph (a)(7).

(iv) Nothing in this section shall preclude an owner or operator from combining this public meeting with any other public meeting required as part of any other Federal, State, or local permit review process except the public meeting required under paragraph (b)(4) of this section.

(3) Following the public meeting required by paragraph (a)(2) of this section, the owner or operator shall prepare responses to the comments received at the public meeting.

(4) The owner or operator shall make the document summarizing responses to public comments available to the public (including distribution to the principal public libraries used to announce the meeting) in the service area where the affected facility is to be located.

(5) The owner or operator shall prepare a final draft materials separation plan for the affected facility considering the public comments received at the public meeting.

(6) As required under § 60.59b(a), the owner or operator shall submit to the Administrator a copy of the notification of the public meeting, a transcript of the public meeting, the document summarizing responses to public comments, and copies of both the preliminary and final draft materials separation plans on or before the time the facility's application for a construction permit is submitted under 40 CFR part 51, subpart I, or part 52, as applicable.

(7) As part of the distribution of the siting analysis required under paragraph (b)(3) of this section, the owner or operator shall make the final draft materials separation plan required under paragraph (a)(5) of this section available to the public, as specified in paragraph (b)(3) of this section.

(8) As part of the public meeting for review of the siting analysis required under paragraph (b)(4) of this section, the owner or operator shall address questions concerning the final draft materials separation plan required by paragraph (a)(5) of this section including discussion of how the final draft materials separation plan has changed from the preliminary draft materials separation plan that was discussed at the first public meeting required by paragraph (a)(2) of this section.

(9) If the owner or operator receives any comments on the final draft materials separation plan during the public meeting required in paragraph (b)(4) of this section, the owner or operator shall respond to those comments in the document prepared in accordance with paragraph (b)(5) of this section.

(10) The owner or operator shall prepare a final materials separation plan and shall submit, as required under § 60.59b(b)(5)(ii), the final materials separation plan as part of the initial notification of construction.

(b) The owner or operator of an affected facility for which the initial application for a construction permit under 40 CFR part 51, subpart I, or part 52, as applicable, is submitted after December 19, 1995 shall prepare a siting analysis in accordance with paragraphs (b)(1) and (b)(2) of this section and shall comply with the requirements specified in paragraphs (b)(3) through (b)(7) of this section.

(1) The siting analysis shall be an analysis of the impact of the affected facility on ambient air quality, visibility, soils, and vegetation.

(2) The analysis shall consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to the public health or the environment.

(3) The owner or operator shall make the siting analysis and final draft materials separation plan required by paragraph (a)(5) of this section available to the public as specified in paragraphs (b)(3)(i) and (b)(3)(ii) of this section.

(i) The owner or operator shall distribute the siting analysis and final draft materials separation plan to the principal public libraries in the area where the affected facility is to be constructed.

(ii) The owner or operator shall publish a notification of a public meeting in the principal newspaper(s) serving the area where the affected facility is to be constructed and where the waste treated by the affected facility will primarily be collected. As a minimum, the notification shall include the information specified in paragraphs (b)(3)(ii)(A) through (b)(3)(ii)(D) of this section.

(A) The date, time, and location of the public meeting.

(B) The location of the public libraries where the siting analyses and final draft materials separation plan may be found, including normal business hours.

(C) An agenda of the issues to be discussed at the public meeting.

(D) The dates that the public comment period on the siting analyses and final draft materials separation plan begins and ends.

(4) The owner or operator shall conduct a public meeting and accept comments on the siting analysis and the final draft materials separation plan required under paragraph (a)(5) of this section. The public meeting shall be conducted in the county where the affected facility is to be located and shall be scheduled to occur 30 days or more after making the siting analysis available to the public as specified under paragraph (b)(3) of this section.

(5) The owner or operator shall prepare responses to the comments on the siting analysis and the final draft materials separation plan that are received at the public meeting.

(6) The owner or operator shall make the document summarizing responses to public comments available to the public (including distribution to all public libraries) in the service area where the affected facility is to be located.

(7) As required under § 60.59b(b)(5), the owner or operator shall submit a copy of the notification of the public meeting, a transcript of the public meeting, the document summarizing responses to public comments, and the siting analysis as part of the initial notification of construction.

(c) The owner or operator of an affected facility for which construction is commenced after September 20, 1994 shall prepare a siting analysis in accordance with 40 CFR part 51, Subpart I, or part 52, as applicable, and shall submit the siting analysis as part of the initial notification of construction. Affected facilities subject to paragraphs (a) and (b) of this section are not subject to this paragraph.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997]

§ 60.58b Compliance and performance testing.

(a) The provisions for startup, shutdown, and malfunction are provided in paragraphs (a)(1) and (a)(2) of this section.

(1) Except as provided by § 60.56b, the standards under this subpart apply at all times except during periods of startup, shutdown, and malfunction. Duration of startup, shutdown, or malfunction periods are limited to 3 hours per occurrence, except as provided in paragraph (a)(1)(iii) of this section.

(i) The startup period commences when the affected facility begins the continuous burning of municipal solid waste and does not include any warmup period when the affected facility is combusting fossil fuel or other nonmunicipal solid waste fuel, and no municipal solid waste is being fed to the combustor.

(ii) Continuous burning is the continuous, semicontinuous, or batch feeding of municipal solid waste for purposes of waste disposal, energy production, or providing heat to the combustion system in preparation for waste disposal or energy production. The use of municipal solid waste solely to provide thermal protection of the grate or hearth during the startup period when municipal solid waste is not being fed to the grate is not considered to be continuous burning.

(iii) For the purpose of compliance with the carbon monoxide emission limits in § 60.53b(a), if a loss of boiler water level control (e.g., boiler waterwall tube failure) or a loss of combustion air control (e.g., loss of combustion air fan, induced draft fan, combustion grate bar failure) is determined to be a malfunction, the duration of the malfunction period is limited to 15 hours per occurrence.

(2) The opacity limits for air curtain incinerators specified in § 60.56b apply at all times as specified under § 60.56b except during periods of malfunction. Duration of malfunction periods are limited to 3 hours per occurrence.

(b) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous emission monitoring system and record the output of the system for measuring the oxygen or carbon dioxide content of the flue gas at each location where carbon monoxide, sulfur dioxide, or nitrogen oxides emissions are monitored and shall comply with the test procedures and test methods specified in paragraphs (b)(1) through (b)(7) of this section.

(1) The span value of the oxygen (or 20 percent carbon dioxide) monitor shall be 25 percent oxygen (or 20 percent carbon dioxide).

(2) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(3) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under § 60.8 of subpart A of this part.

(4) The monitor shall conform to Performance Specification 3 in appendix B of this part except for section 2.3 (relative accuracy requirement).

(5) The quality assurance procedures of appendix F of this part except for section 5.1.1 (relative accuracy test audit) shall apply to the monitor.

(6) If carbon dioxide is selected for use in diluent corrections, the relationship between oxygen and carbon dioxide levels shall be established during the initial performance test according to the procedures and methods specified in paragraphs (b)(6)(i) through (b)(6)(iv) of this section. This relationship may be reestablished during performance compliance tests.

(i) The fuel factor equation in Method 3B shall be used to determine the relationship between oxygen and carbon dioxide at a sampling location. Method 3, 3A, or 3B, as applicable, shall be used to determine the oxygen concentration at the same location as the carbon dioxide monitor.

(ii) Samples shall be taken for at least 30 minutes in each hour.

(iii) Each sample shall represent a 1-hour average.

(iv) A minimum of three runs shall be performed.

(7) The relationship between carbon dioxide and oxygen concentrations that is established in accordance with paragraph (b)(6) of this section shall be submitted to the EPA Administrator as part of the initial performance test report and, if applicable, as part of the annual test report if the relationship is reestablished during the annual performance test.

(c) The procedures and test methods specified in paragraphs (c)(1) through (c)(11) of this section shall be used to determine compliance with the emission limits for particulate matter and opacity under § 60.52b(a)(1) and (a)(2).

(1) The EPA Reference Method 1 shall be used to select sampling site and number of traverse points.

(2) The EPA Reference Method 3, 3A, or 3B, as applicable, shall be used for gas analysis.

(3) The EPA Reference Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters. The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature no greater than 160±14 °C. An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.

(4) The owner or operator of an affected facility may request that compliance with the particulate matter emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(5) As specified under § 60.8 of subpart A of this part, all performance tests shall consist of three test runs. The average of the particulate matter emission concentrations from the three test runs is used to determine compliance.

(6) In accordance with paragraphs (c)(7) and (c)(11) of this section, EPA Reference Method 9 shall be used for determining compliance with the opacity limit except as provided under § 60.11(e) of subpart A of this part.

(7) The owner or operator of an affected facility shall conduct an initial performance test for particulate matter emissions and opacity as required under § 60.8 of subpart A of this part.

(8) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous opacity monitoring system for measuring opacity and shall follow the methods and procedures specified in paragraphs (c)(8)(i) through (c)(8)(iv) of this section.

(i) The output of the continuous opacity monitoring system shall be recorded on a 6-minute average basis.

(ii) The continuous opacity monitoring system shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(iii) The continuous opacity monitoring system shall conform to Performance Specification 1 in appendix B of this part.

(iv) The initial performance evaluation shall be completed no later than 180 days after the date of the initial startup of the municipal waste combustor unit, as specified under § 60.8 of subpart A of this part.

(9) Following the date that the initial performance test for particulate matter is completed or is required to be completed under § 60.8 of subpart A of this part for an affected facility, the owner or operator shall conduct a performance test for particulate matter on an annual basis (no more than 12 calendar months following the previous performance test).

(10) [Reserved]

(11) Following the date that the initial performance test for opacity is completed or is required to be completed under § 60.8 of subpart A of this part for an affected facility, the owner or operator shall conduct a performance test for opacity on an annual basis (no more than 12 calendar months following the previous performance test) using the test method specified in paragraph (c)(6) of this section.

(d) The procedures and test methods specified in paragraphs (d)(1) and (d)(2) of this section shall be used to determine compliance with the emission limits for cadmium, lead, and mercury under § 60.52b(a).

(1) The procedures and test methods specified in paragraphs (d)(1)(i) through (d)(1)(ix) of this section shall be used to determine compliance with the emission limits for cadmium and lead under § 60.52b(a) (3) and (4).

(i) The EPA Reference Method 1 shall be used for determining the location and number of sampling points.

(ii) The EPA Reference Method 3, 3A, or 3B, as applicable, shall be used for flue gas analysis.

(iii) The EPA Reference Method 29 shall be used for determining compliance with the cadmium and lead emission limits.

(iv) An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 29 test run for cadmium and lead required under paragraph (d)(1)(iii) of this section.

(v) The owner or operator of an affected facility may request that compliance with the cadmium or lead emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(vi) All performance tests shall consist of a minimum of three test runs conducted under representative full load operating conditions. The average of the cadmium or lead emission concentrations from three test runs or more shall be used to determine compliance.

(vii) Following the date of the initial performance test or the date on which the initial performance test is required to be completed under § 60.8 of subpart A of this part, the owner or operator of an affected facility shall conduct a performance test for compliance with the emission limits for cadmium and lead on an annual basis (no more than 12 calendar months following the previous performance test).

(viii)–(ix) [Reserved]

(2) The procedures and test methods specified in paragraphs (d)(2)(i) through (d)(2)(xi) of this section shall be used to determine compliance with the mercury emission limit under § 60.52b(a)(5).

(i) The EPA Reference Method 1 shall be used for determining the location and number of sampling points.

(ii) The EPA Reference Method 3, 3A, or 3B, as applicable, shall be used for flue gas analysis.

(iii) The EPA Reference Method 29 shall be used to determine the mercury emission concentration. The minimum sample volume when using Method 29 for mercury shall be 1.7 cubic meters.

(iv) An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each Method 29 test run for mercury required under paragraph (d)(2)(iii) of this section.

(v) The percent reduction in the potential mercury emissions (%PHg) is computed using equation 1:

$$\left(\%P_{Hg}\right) = \left(\frac{E_i - E_o}{E_i}\right) \times 100 \qquad (1)$$

where:

$\%P_{Hg}$ = percent reduction of the potential mercury emissions achieved.

E_i = potential mercury emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis).

E_o = controlled mercury emission concentration measured at the mercury control device outlet, corrected to 7 percent oxygen (dry basis).

(vi) All performance tests shall consist of a minimum of three test runs conducted under representative full load operating conditions. The average of the mercury emission concentrations or percent reductions from three test runs or more is used to determine compliance.

(vii) The owner or operator of an affected facility may request that compliance with the mercury emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(viii) The owner or operator of an affected facility shall conduct an initial performance test for mercury emissions as required under § 60.8 of subpart A of this part.

(ix) Following the date that the initial performance test for mercury is completed or is required to be completed under § 60.8 of subpart A of this part, the owner or operator of an affected facility shall conduct a performance test for mercury emissions on a annual basis (no more than 12 calendar months from the previous performance test).

(x) [Reserved]

(xi) The owner or operator of an affected facility where activated carbon injection is used to comply with the mercury emission limit shall follow the procedures specified in paragraph (m) of this section for measuring and calculating carbon usage.

(e) The procedures and test methods specified in paragraphs (e)(1) through (e)(14) of this section shall be used for determining compliance with the sulfur dioxide emission limit under § 60.52b(b)(1).

(1) The EPA Reference Method 19, section 4.3, shall be used to calculate the daily geometric average sulfur dioxide emission concentration.

(2) The EPA Reference Method 19, section 5.4, shall be used to determine the daily geometric average percent reduction in the potential sulfur dioxide emission concentration.

(3) The owner or operator of an affected facility may request that compliance with the sulfur dioxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(4) The owner or operator of an affected facility shall conduct an initial performance test for sulfur dioxide emissions as required under § 60.8 of subpart A of this part. Compliance with the sulfur dioxide emission limit (concentration or percent reduction) shall be determined by using the continuous emission monitoring system specified in paragraph (e)(5) of this section to measure sulfur dioxide and calculating a 24-hour daily geometric average emission concentration or a 24-hour daily geometric average percent reduction using EPA Reference Method 19, sections 4.3 and 5.4, as applicable.

(5) The owner or operator of an affected facility shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring sulfur dioxide emissions discharged to the atmosphere and record the output of the system.

(6) Following the date that the initial performance test for sulfur dioxide is completed or is required to be completed under § 60.8 of subpart A of this part, compliance with the sulfur dioxide emission limit shall be determined based on the 24-hour daily geometric average of the hourly arithmetic average emission concentrations using continuous emission monitoring system outlet data if compliance is based on

an emission concentration, or continuous emission monitoring system inlet and outlet data if compliance is based on a percent reduction.

(7) At a minimum, valid continuous monitoring system hourly averages shall be obtained as specified in paragraphs (e)(7)(i) and (e)(7)(ii) for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the affected facility is combusting municipal solid waste.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) Each sulfur dioxide 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(8) The 1-hour arithmetic averages required under paragraph (e)(6) of this section shall be expressed in parts per million corrected to 7 percent oxygen (dry basis) and used to calculate the 24-hour daily geometric average emission concentrations and daily geometric average emission percent reductions. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2) of subpart A of this part.

(9) All valid continuous emission monitoring system data shall be used in calculating average emission concentrations and percent reductions even if the minimum continuous emission monitoring system data requirements of paragraph (e)(7) of this section are not met.

(10) The procedures under § 60.13 of subpart A of this part shall be followed for installation, evaluation, and operation of the continuous emission monitoring system.

(11) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the municipal waste combustor as specified under § 60.8 of subpart A of this part.

(12) The continuous emission monitoring system shall be operated according to Performance Specification 2 in appendix B of this part.

(i) During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 2 in appendix B of this part, sulfur dioxide and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraphs (e)(12)(i)(A) and (e)(12)(i)(B) of this section.

(A) For sulfur dioxide, EPA Reference Method 6, 6A, or 6C shall be used.

(B) For oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, as applicable shall be used.

(ii) The span value of the continuous emissions monitoring system at the inlet to the sulfur dioxide control device shall be 125 percent of the maximum estimated hourly potential sulfur dioxide emissions of the municipal waste combustor unit. The span value of the continuous emission monitoring system at the outlet of the sulfur dioxide control device shall be 50 percent of the maximum estimated hourly potential sulfur dioxide emissions of the municipal waste combustor unit.

(13) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 1 in appendix F of this part.

(14) When sulfur dioxide emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 75 percent of the hours per day that the affected facility is operated and combusting municipal solid waste for 90 percent of the days per calendar quarter that the affected facility is operated and combusting municipal solid waste.

(f) The procedures and test methods specified in paragraphs (f)(1) through (f)(8) of this section shall be used for determining compliance with the hydrogen chloride emission limit under § 60.52b(b)(2).

(1) The EPA Reference Method 26 or 26A, as applicable, shall be used to determine the hydrogen chloride emission concentration. The minimum sampling time shall be 1 hour.

(2) An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each test run for hydrogen chloride required by paragraph (f)(1) of this section.

(3) The percent reduction in potential hydrogen chloride emissions (% P_{HCl}) is computed using equation 2:

$$\left(\%P_{HCl}\right)=\left(\frac{E_i-E_o}{E_i}\right)\times 100 \qquad (2)$$

where:

%P_{HCl}=percent reduction of the potential hydrogen chloride emissions achieved.

E_i=potential hydrogen chloride emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis).

E_o=controlled hydrogen chloride emission concentration measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

(4) The owner or operator of an affected facility may request that compliance with the hydrogen chloride emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(5) As specified under §60.8 of subpart A of this part, all performance tests shall consist of three test runs. The average of the hydrogen chloride emission concentrations or percent reductions from the three test runs is used to determine compliance.

(6) The owner or operator of an affected facility shall conduct an initial performance test for hydrogen chloride as required under §60.8 of subpart A of this part.

(7) Following the date that the initial performance test for hydrogen chloride is completed or is required to be completed under §60.8 of subpart A of this part, the owner or operator of an affected facility shall conduct a performance test for hydrogen chloride emissions on an annual basis (no more than 12 calendar months following the previous performance test).

(8) [Reserved]

(g) The procedures and test methods specified in paragraphs (g)(1) through (g)(9) of this section shall be used to determine compliance with the limits for dioxin/furan emissions under §60.52b(c).

(1) The EPA Reference Method 1 shall be used for determining the location and number of sampling points.

(2) The EPA Reference Method 3, 3A, or 3B, as applicable, shall be used for flue gas analysis.

(3) The EPA Reference Method 23 shall be used for determining the dioxin/furan emission concentration.

(i) The minimum sample time shall be 4 hours per test run.

(ii) An oxygen (or carbon dioxide) measurement shall be obtained simultaneously with each Method 23 test run for dioxins/furans.

(4) The owner or operator of an affected facility shall conduct an initial performance test for dioxin/furan emissions in accordance with paragraph (g)(3) of this section, as required under §60.8 of subpart A of this part.

(5) Following the date that the initial performance test for dioxins/furans is completed or is required to be completed under §60.8 of subpart A of this part, the owner or operator of an affected facility shall conduct performance tests for dioxin/furan emissions in accordance with paragraph (g)(3) of this section, according to one of the schedules specified in paragraphs (g)(5)(i) through (g)(5)(iii) of this section.

(i) For affected facilities, performance tests shall be conducted on an annual basis (no more than 12 calendar months following the previous performance test.)

(ii) [Reserved]

(iii) Where all performance tests over a 2-year period indicate that dioxin/furan emissions are less than or equal to 7 nanograms per dry standard cubic meter (total mass) for all affected facilities located within a municipal waste combustor plant, the owner or operator of the municipal waste combustor plant may elect to conduct annual performance tests for one affected facility (i.e., unit) per year at the municipal waste combustor plant. At a minimum, a performance test for dioxin/furan emissions shall be conducted annually (no more than 12 months following the previous performance test) for one affected facility at the municipal waste combustor plant. Each year a different affected facility at the municipal waste combustor plant shall be tested, and the affected facilities at the plant shall be tested in sequence (e.g., unit 1, unit 2, unit 3, as applicable). If each annual performance test continues to indicate a dioxin/furan emission level less than or equal to 7 nanograms per dry standard cubic meter (total mass), the owner or operator may continue conducting a performance test on only one affected facility per year. If any annual performance test indicates a dioxin/furan emission level greater than 7 nanograms per dry standard cubic meter (total mass), performance tests thereafter shall be conducted annually on all affected facilities at the plant until and unless all annual performance tests for all affected facilities at the plant over a 2-year period indicate a dioxin/furan emission level less than or equal to 7 nanograms per dry standard cubic meter (total mass).

(6) The owner or operator of an affected facility that selects to follow the performance testing schedule specified in paragraph (g)(5)(iii) of this section shall follow the procedures specified in § 60.59b(g)(4) for reporting the selection of this schedule.

(7) The owner or operator of an affected facility where activated carbon is used to comply with the dioxin/furan emission limits specified in § 60.52b(c) or the dioxin/furan emission level specified in paragraph (g)(5)(iii) of this section shall follow the procedures specified in paragraph (m) of this section for measuring and calculating the carbon usage rate.

(8) The owner or operator of an affected facility may request that compliance with the dioxin/furan emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(9) As specified under § 60.8 of subpart A of this part, all performance tests shall consist of three test runs. The average of the dioxin/furan emission concentrations from the three test runs is used to determine compliance.

(h) The procedures and test methods specified in paragraphs (h)(1) through (h)(12) of this section shall be used to determine compliance with the nitrogen oxides emission limit for affected facilities under § 60.52b(d).

(1) The EPA Reference Method 19, section 4.1, shall be used for determining the daily arithmetic average nitrogen oxides emission concentration.

(2) The owner or operator of an affected facility may request that compliance with the nitrogen oxides emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(3) The owner or operator of an affected facility subject to the nitrogen oxides limit under § 60.52b(d) shall conduct an initial performance test for nitrogen oxides as required under § 60.8 of subpart A of this part. Compliance with the nitrogen oxides emission limit shall be determined by using the continuous emission monitoring system specified in paragraph (h)(4) of this section for measuring nitrogen oxides and calculating a 24-hour daily arithmetic average emission concentration using EPA Reference Method 19, section 4.1.

(4) The owner or operator of an affected facility subject to the nitrogen oxides emission limit under § 60.52b(d) shall install, calibrate, maintain, and operate a continuous emission monitoring system for measuring nitrogen oxides discharged to the atmosphere, and record the output of the system.

(5) Following the date that the initial performance test for nitrogen oxides is completed or is required to be completed under § 60.8 of subpart A of this part, compliance with the emission limit for nitrogen oxides required under § 60.52b(d) shall be determined based on the 24-hour daily arithmetic

average of the hourly emission concentrations using continuous emission monitoring system outlet data.

(6) At a minimum, valid continuous emission monitoring system hourly averages shall be obtained as specified in paragraphs (h)(6)(i) and (h)(6)(ii) of this section for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the affected facility is combusting municipal solid waste.

(i) At least 2 data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) Each nitrogen oxides 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(7) The 1-hour arithmetic averages required by paragraph (h)(5) of this section shall be expressed in parts per million by volume (dry basis) and used to calculate the 24-hour daily arithmetic average concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under §60.13(e)(2) of subpart A of this part.

(8) All valid continuous emission monitoring system data must be used in calculating emission averages even if the minimum continuous emission monitoring system data requirements of paragraph (h)(6) of this section are not met.

(9) The procedures under §60.13 of subpart A of this part shall be followed for installation, evaluation, and operation of the continuous emission monitoring system. The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the municipal waste combustor unit, as specified under §60.8 of subpart A of this part.

(10) The owner or operator of an affected facility shall operate the continuous emission monitoring system according to Performance Specification 2 in appendix B of this part and shall follow the procedures and methods specified in paragraphs (h)(10)(i) and (h)(10)(ii) of this section.

(i) During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 2 of appendix B of this part, nitrogen oxides and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraphs (h)(10)(i)(A) and (h)(10)(i)(B) of this section.

(A) For nitrogen oxides, EPA Reference Method 7, 7A, 7C, 7D, or 7E shall be used.

(B) For oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, as applicable shall be used.

(ii) The span value of the continuous emission monitoring system shall be 125 percent of the maximum estimated hourly potential nitrogen oxide emissions of the municipal waste combustor unit.

(11) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 1 in appendix F of this part.

(12) When nitrogen oxides continuous emissions data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained using other monitoring systems as approved by the Administrator or EPA Reference Method 19 to provide, as necessary, valid emissions data for a minimum of 75 percent of the hours per day for 90 percent of the days per calendar quarter the unit is operated and combusting municipal solid waste.

(i) The procedures specified in paragraphs (i)(1) through (i)(12) of this section shall be used for determining compliance with the operating requirements under §60.53b.

(1) Compliance with the carbon monoxide emission limits in §60.53b(a) shall be determined using a 4-hour block arithmetic average for all types of affected facilities except mass burn rotary waterwall municipal waste combustors and refuse-derived fuel stokers.

(2) For affected mass burn rotary waterwall municipal waste combustors and refuse-derived fuel stokers, compliance with the carbon monoxide emission limits in §60.53b(a) shall be determined using a 24-hour daily arithmetic average.

(3) The owner or operator of an affected facility shall install, calibrate,

maintain, and operate a continuous emission monitoring system for measuring carbon monoxide at the combustor outlet and record the output of the system and shall follow the procedures and methods specified in paragraphs (i)(3)(i) through (i)(3)(iii) of this section.

(i) The continuous emission monitoring system shall be operated according to Performance Specification 4A in appendix B of this part.

(ii) During each relative accuracy test run of the continuous emission monitoring system required by Performance Specification 4A in appendix B of this part, carbon monoxide and oxygen (or carbon dioxide) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and the test methods specified in paragraphs (i)(3)(ii)(A) and (i)(3)(ii)(B) of this section.

(A) For carbon monoxide, EPA Reference Method 10, 10A, or 10B shall be used.

(B) For oxygen (or carbon dioxide), EPA Reference Method 3, 3A, or 3B, as applicable shall be used.

(iii) The span value of the continuous emission monitoring system shall be 125 percent of the maximum estimated hourly potential carbon monoxide emissions of the municipal waste combustor unit.

(4) The 4-hour block and 24-hour daily arithmetic averages specified in paragraphs (i)(1) and (i)(2) of this section shall be calculated from 1-hour arithmetic averages expressed in parts per million by volume corrected to 7 percent oxygen (dry basis). The 1-hour arithmetic averages shall be calculated using the data points generated by the continuous emission monitoring system. At least two data points shall be used to calculate each 1-hour arithmetic average.

(5) The owner or operator of an affected facility may request that compliance with the carbon monoxide emission limit be determined using carbon dioxide measurements corrected to an equivalent of 7 percent oxygen. The relationship between oxygen and carbon dioxide levels for the affected facility shall be established as specified in paragraph (b)(6) of this section.

(6) The procedures specified in paragraphs (i)(6)(i) through (i)(6)(v) of this section shall be used to determine compliance with load level requirements under § 60.53b(b).

(i) The owner or operator of an affected facility with steam generation capability shall install, calibrate, maintain, and operate a steam flow meter or a feedwater flow meter; measure steam (or feedwater) flow in kilograms per hour (or pounds per hour) on a continuous basis; and record the output of the monitor. Steam (or feedwater) flow shall be calculated in 4-hour block arithmetic averages.

(ii) The method included in the ''American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964 (R1991)'' section 4 (incorporated by reference, see § 60.17 of subpart A of this part) shall be used for calculating the steam (or feedwater) flow required under paragraph (i)(6)(i) of this section. The recommendations in ''American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th edition (1971),'' chapter 4 (incorporated by reference—see § 60.17 of subpart A of this part) shall be followed for design, construction, installation, calibration, and use of nozzles and orifices except as specified in (i)(6)(iii) of this section.

(iii) Measurement devices such as flow nozzles and orifices are not required to be recalibrated after they are installed.

(iv) All signal conversion elements associated with steam (or feedwater flow) measurements must be calibrated according to the manufacturer's instructions before each dioxin/furan performance test, and at least once per year.

(7) To determine compliance with the maximum particulate matter control device temperature requirements under § 60.53b(c), the owner or operator of an affected facility shall install, calibrate, maintain, and operate a device for measuring on a continuous basis the temperature of the flue gas stream at the inlet to each particulate matter control device utilized by the affected

facility. Temperature shall be calculated in 4-hour block arithmetic averages.

(8) The maximum demonstrated municipal waste combustor unit load shall be determined during the initial performance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit specified in § 60.52b(c) is achieved. The maximum demonstrated municipal waste combustor unit load shall be the highest 4-hour arithmetic average load achieved during four consecutive hours during the most recent test during which compliance with the dioxin/furan emission limit was achieved.

(9) For each particulate matter control device employed at the affected facility, the maximum demonstrated particulate matter control device temperature shall be determined during the initial performance test for dioxins/furans and each subsequent performance test during which compliance with the dioxin/furan emission limit specified in § 60.52b(c) is achieved. The maximum demonstrated particulate matter control device temperature shall be the highest 4-hour arithmetic average temperature achieved at the particulate matter control device inlet during four consecutive hours during the most recent test during which compliance with the dioxin/furan limit was achieved.

(10) At a minimum, valid continuous emission monitoring system hourly averages shall be obtained as specified in paragraphs (i)(10)(i) and (i)(10)(ii) of this section for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the affected facility is combusting municipal solid waste.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) At a minimum, each carbon monoxide 1-hour arithmetic average shall be corrected to 7 percent oxygen on an hourly basis using the 1-hour arithmetic average of the oxygen (or carbon dioxide) continuous emission monitoring system data.

(11) All valid continuous emission monitoring system data must be used in calculating the parameters specified under paragraph (i) of this section even if the minimum data requirements of paragraph (i)(10) of this section are not met. When carbon monoxide continuous emission data are not obtained because of continuous emission monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained using other monitoring systems as approved by the Administrator or EPA Reference Method 10 to provide, as necessary, the minimum valid emission data.

(12) Quarterly accuracy determinations and daily calibration drift tests for the carbon monoxide continuous emission monitoring system shall be performed in accordance with procedure 1 in appendix F of this part.

(j) The procedures specified in paragraphs (j)(1) and (j)(2) of this section shall be used for calculating municipal waste combustor unit capacity as defined under § 60.51b.

(1) For municipal waste combustor units capable of combusting municipal solid waste continuously for a 24-hour period, municipal waste combustor unit capacity shall be calculated based on 24 hours of operation at the maximum charging rate. The maximum charging rate shall be determined as specified in paragraphs (j)(1)(i) and (j)(1)(ii) of this section as applicable.

(i) For combustors that are designed based on heat capacity, the maximum charging rate shall be calculated based on the maximum design heat input capacity of the unit and a heating value of 12,800 kilojoules per kilogram for combustors firing refuse-derived fuel and a heating value of 10,500 kilojoules per kilogram for combustors firing municipal solid waste that is not refuse-derived fuel.

(ii) For combustors that are not designed based on heat capacity, the maximum charging rate shall be the maximum design charging rate.

(2) For batch feed municipal waste combustor units, municipal waste combustor unit capacity shall be calculated as the maximum design amount of municipal solid waste that can be charged per batch multiplied by the maximum number of batches that could be processed in a 24-hour period. The maximum number of batches that

could be processed in a 24-hour period is calculated as 24 hours divided by the design number of hours required to process one batch of municipal solid waste, and may include fractional batches (e.g., if one batch requires 16 hours, then 24/16, or 1.5 batches, could be combusted in a 24-hour period). For batch combustors that are designed based on heat capacity, the design heating value of 12,800 kilojoules per kilogram for combustors firing refuse-derived fuel and a heating value of 10,500 kilojoules per kilogram for combustors firing municipal solid waste that is not refuse-derived fuel shall be used in calculating the municipal waste combustor unit capacity in megagrams per day of municipal solid waste.

(k) The procedures specified in paragraphs (k)(1) through (k)(4) of this section shall be used for determining compliance with the fugitive ash emission limit under § 60.55b.

(1) The EPA Reference Method 22 shall be used for determining compliance with the fugitive ash emission limit under § 60.55b. The minimum observation time shall be a series of three 1-hour observations. The observation period shall include times when the facility is transferring ash from the municipal waste combustor unit to the area where ash is stored or loaded into containers or trucks.

(2) The average duration of visible emissions per hour shall be calculated from the three 1-hour observations. The average shall be used to determine compliance with § 60.55b.

(3) The owner or operator of an affected facility shall conduct an initial performance test for fugitive ash emissions as required under § 60.8 of subpart A of this part.

(4) Following the date that the initial performance test for fugitive ash emissions is completed or is required to be completed under § 60.8 of subpart A of this part for an affected facility, the owner or operator shall conduct a performance test for fugitive ash emissions on an annual basis (no more than 12 calendar months following the previous performance test).

(l) The procedures specified in paragraphs (l)(1) through (l)(3) of this section shall be used to determine compliance with the opacity limit for air curtain incinerators under § 60.56b.

(1) The EPA Reference Method 9 shall be used for determining compliance with the opacity limit.

(2) The owner or operator of the air curtain incinerator shall conduct an initial performance test for opacity as required under § 60.8 of subpart A of this part.

(3) Following the date that the initial performance test is completed or is required to be completed under § 60.8 of subpart A of this part, the owner or operator of the air curtain incinerator shall conduct a performance test for opacity on an annual basis (no more than 12 calendar months following the previous performance test).

(m) The owner or operator of an affected facility where activated carbon injection is used to comply with the mercury emission limit under § 60.52b(a)(5), or the dioxin/furan emission limits under § 60.52(b)(c), or the dioxin/furan emission level specified in § 60.58b(g)(5)(iii) shall follow the procedures specified in paragraphs (m)(1) through (m)(3) of this section.

(1) During the performance tests for dioxins/furans and mercury, as applicable, the owner or operator shall estimate an average carbon mass feed rate based on carbon injection system operating parameters such as the screw feeder speed, hopper volume, hopper refill frequency, or other parameters appropriate to the feed system being employed, as specified in paragraphs (m)(1)(i) and (m)(1)(ii) of this section.

(i) An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance test for mercury emissions and each subsequent performance test for mercury emissions.

(ii) An average carbon mass feed rate in kilograms per hour or pounds per hour shall be estimated during the initial performance test for dioxin/furan emissions and each subsequent performance test for dioxin/furan emissions.

(2) During operation of the affected facility, the carbon injection system operating parameter(s) that are the primary indicator(s) of the carbon mass feed rate (e.g., screw feeder setting) must equal or exceed the level(s)

documented during the performance tests specified under paragraphs (m)(1)(i) and (m)(1)(ii) of this section.

(3) The owner or operator of an affected facility shall estimate the total carbon usage of the plant (kilograms or pounds) for each calendar quarter by two independent methods, according to the procedures in paragraphs (m)(3)(i) and (m)(3)(ii) of this section.

(i) The weight of carbon delivered to the plant.

(ii) Estimate the average carbon mass feed rate in kilograms per hour or pounds per hour for each hour of operation for each affected facility based on the parameters specified under paragraph (m)(1) of this section, and sum the results for all affected facilities at the plant for the total number of hours of operation during the calendar quarter.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45126, Aug. 25, 1997; 65 FR 61753, Oct. 17, 2000; 66 FR 57827, Nov. 16, 2001]

§ 60.59b Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility with a capacity to combust greater than 250 tons per day shall submit, on or before the date the application for a construction permit is submitted under 40 CFR part 51, subpart I, or part 52, as applicable, the items specified in paragraphs (a)(1) through (a)(4) of this section.

(1) The preliminary and final draft materials separation plans required by § 60.57b(a)(1) and (a)(5).

(2) A copy of the notification of the public meeting required by § 60.57b(a)(1)(ii).

(3) A transcript of the public meeting required by § 60.57b(a)(2).

(4) A copy of the document summarizing responses to public comments required by § 60.57b(a)(3).

(b) The owner or operator of an affected facility with a capacity to combust greater than 250 tons per day shall submit a notification of construction, which includes the information specified in paragraphs (b)(1) through (b)(5) of this section.

(1) Intent to construct.

(2) Planned initial startup date.

(3) The types of fuels that the owner or operator plans to combust in the affected facility.

(4) The municipal waste combustor unit capacity, and supporting capacity calculations prepared in accordance with § 60.58b(j).

(5) Documents associated with the siting requirements under § 60.57b (a) and (b), as specified in paragraphs (b)(5)(i) through (b)(5)(v) of this section.

(i) The siting analysis required by § 60.57b (b)(1) and (b)(2).

(ii) The final materials separation plan for the affected facility required by § 60.57b(a)(10).

(iii) A copy of the notification of the public meeting required by § 60.57b(b)(3)(ii).

(iv) A transcript of the public meeting required by § 60.57b(b)(4).

(v) A copy of the document summarizing responses to public comments required by § 60.57b (a)(9) and (b)(5).

(c) The owner or operator of an air curtain incinerator subject to the opacity limit under § 60.56b shall provide a notification of construction that includes the information specified in paragraphs (b)(1) through (b)(4) of this section.

(d) The owner or operator of an affected facility subject to the standards under §§ 60.52b, 60.53b, 60.54b, 60.55b, and 60.57b shall maintain records of the information specified in paragraphs (d)(1) through (d)(15) of this section, as applicable, for each affected facility for a period of at least 5 years.

(1) The calendar date of each record.

(2) The emission concentrations and parameters measured using continuous monitoring systems as specified under paragraphs (d)(2)(i) and (d)(2)(ii) of this section.

(i) The measurements specified in paragraphs (d)(2)(i)(A) through (d)(2)(i)(D) of this section shall be recorded and be available for submittal to the Administrator or review onsite by an inspector.

(A) All 6-minute average opacity levels as specified under § 60.58b(c).

(B) All 1-hour average sulfur dioxide emission concentrations as specified under § 60.58b(e).

(C) All 1-hour average nitrogen oxides emission concentrations as specified under § 60.58b(h).

(D) All 1-hour average carbon monoxide emission concentrations, municipal waste combustor unit load measurements, and particulate matter control device inlet temperatures as specified under § 60.58b(i).

(ii) The average concentrations and percent reductions, as applicable, specified in paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section shall be computed and recorded, and shall be available for submittal to the Administrator or review on-site by an inspector.

(A) All 24-hour daily geometric average sulfur dioxide emission concentrations and all 24-hour daily geometric average percent reductions in sulfur dioxide emissions as specified under § 60.58b(e).

(B) All 24-hour daily arithmetic average nitrogen oxides emission concentrations as specified under § 60.58b(h).

(C) All 4-hour block or 24-hour daily arithmetic average carbon monoxide emission concentrations, as applicable, as specified under § 60.58b(i).

(D) All 4-hour block arithmetic average municipal waste combustor unit load levels and particulate matter control device inlet temperatures as specified under § 60.58b(i).

(3) Identification of the calendar dates when any of the average emission concentrations, percent reductions, or operating parameters recorded under paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section, or the opacity levels recorded under paragraph (d)(2)(i)(A) of this section are above the applicable limits, with reasons for such exceedances and a description of corrective actions taken.

(4) For affected facilities that apply activated carbon for mercury or dioxin/furan control, the records specified in paragraphs (d)(4)(i) through (d)(4)(v) of this section.

(i) The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated as required under § 60.58b(m)(1)(i) of this section during the initial mercury performance test and all subsequent annual performance tests, with supporting calculations.

(ii) The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated as required under § 60.58b(m)(1)(ii) of this section during the initial dioxin/furan performance test and all subsequent annual performance tests, with supporting calculations.

(iii) The average carbon mass feed rate (in kilograms per hour or pounds per hour) estimated for each hour of operation as required under § 60.58b(m)(3)(ii) of this section, with supporting calculations.

(iv) The total carbon usage for each calendar quarter estimated as specified by paragraph 60.58b(m)(3) of this section, with supporting calculations.

(v) Carbon injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon feed rate (e.g., screw feeder speed).

(5) [Reserved]

(6) Identification of the calendar dates for which the minimum number of hours of any of the data specified in paragraphs (d)(6)(i) through (d)(6)(v) of this section have not been obtained including reasons for not obtaining sufficient data and a description of corrective actions taken.

(i) Sulfur dioxide emissions data;

(ii) Nitrogen oxides emissions data;

(iii) Carbon monoxide emissions data;

(iv) Municipal waste combustor unit load data; and

(v) Particulate matter control device temperature data.

(7) Identification of each occurrence that sulfur dioxide emissions data, nitrogen oxides emissions data (large municipal waste combustors only), or operational data (i.e., carbon monoxide emissions, unit load, and particulate matter control device temperature) have been excluded from the calculation of average emission concentrations or parameters, and the reasons for excluding the data.

(8) The results of daily drift tests and quarterly accuracy determinations for sulfur dioxide, nitrogen oxides, and carbon monoxide continuous emission monitoring systems, as required under appendix F of this part, procedure 1.

(9) The test reports documenting the results of the initial performance test and all annual performance tests listed

in paragraphs (d)(9)(i) and (d)(9)(ii) of this section shall be recorded along with supporting calculations.

(i) The results of the initial performance test and all annual performance tests conducted to determine compliance with the particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission limits.

(ii) For the initial dioxin/furan performance test and all subsequent dioxin/furan performance tests recorded under paragraph (d)(9)(i) of this section, the maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device temperature (for each particulate matter control device).

(10) [Reserved]

(11) For each affected facility subject to the siting provisions under § 60.57b, the siting analysis, the final materials separation plan, a record of the location and date of the public meetings, and the documentation of the responses to public comments received at the public meetings.

(12) The records specified in paragraphs (d)(12)(i) through (d)(12)(iii) of this section.

(i) Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have been provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program as required by § 60.54b(a) including the dates of initial and renewal certifications and documentation of current certification.

(ii) Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have been fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program as required by § 60.54b(b) including the dates of initial and renewal certifications and documentation of current certification.

(iii) Records showing the names of the municipal waste combustor chief facility operator, shift supervisors, and control room operators who have completed the EPA municipal waste combustor operator training course or a State-approved equivalent course as required by § 60.54b(d) including documentation of training completion.

(13) Records showing the names of persons who have completed a review of the operating manual as required by § 60.54b(f) including the date of the initial review and subsequent annual reviews.

(14) For affected facilities that apply activated carbon for mercury or dioxin/furan control, identification of the calendar dates when the average carbon mass feed rates recorded under (d)(4)(iii) of this section were less than either of the hourly carbon feed rates estimated during performance tests for mercury or dioxin/furan emissions and recorded under paragraphs (d)(4)(i) and (d)(4)(ii) of this section, respectively, with reasons for such feed rates and a description of corrective actions taken.

(15) For affected facilities that apply activated carbon for mercury or dioxin/furan control, identification of the calendar dates when the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate (e.g., screw feeder speed) recorded under paragraph (d)(4)(v) of this section are below the level(s) estimated during the performance tests as specified in § 60.58b(m)(1)(i) and § 60.58b(m)(1)(ii) of this section, with reasons for such occurrences and a description of corrective actions taken.

(e) The owner or operator of an air curtain incinerator subject to the opacity limit under § 60.56b shall maintain records of results of the initial opacity performance test and subsequent performance tests required by § 60.58b(l) for a period of at least 5 years.

(f) The owner or operator of an affected facility shall submit the information specified in paragraphs (f)(1) through (f)(6) of this section in the initial performance test report.

(1) The initial performance test data as recorded under paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section for the initial performance test for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, and particulate matter control device inlet temperature.

(2) The test report documenting the initial performance test recorded under paragraph (d)(9) of this section for particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emissions.

(3) The performance evaluation of the continuous emission monitoring system using the applicable performance specifications in appendix B of this part.

(4) The maximum demonstrated municipal waste combustor unit load and maximum demonstrated particulate matter control device inlet temperature(s) established during the initial dioxin/furan performance test as recorded under paragraph (d)(9) of this section.

(5) For affected facilities that apply activated carbon injection for mercury control, the owner or operator shall submit the average carbon mass feed rate recorded under paragraph (d)(4)(i) of this section.

(6) For those affected facilities that apply activated carbon injection for dioxin/furan control, the owner or operator shall submit the average carbon mass feed rate recorded under paragraph (d)(4)(ii) of this section.

(g) Following the first year of municipal combustor operation, the owner or operator of an affected facility shall submit an annual report including the information specified in paragraphs (g)(1) through (g)(4) of this section, as applicable, no later than February 1 of each year following the calendar year in which the data were collected (once the unit is subject to permitting requirements under Title V of the Act, the owner or operator of an affected facility must submit these reports semiannually).

(1) A summary of data collected for all pollutants and parameters regulated under this subpart, which includes the information specified in paragraphs (g)(1)(i) through (g)(1)(v) of this section.

(i) A list of the particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission levels achieved during the performance tests recorded under paragraph (d)(9) of this section.

(ii) A list of the highest emission level recorded for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, and particulate matter control device inlet temperature based on the data recorded under paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) of this section.

(iii) List the highest opacity level measured, based on the data recorded under paragraph (d)(2)(i)(A) of this section.

(iv) The total number of days that the minimum number of hours of data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, and particulate matter control device temperature data were not obtained based on the data recorded under paragraph (d)(6) of this section.

(v) The total number of hours that data for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load, and particulate matter control device temperature were excluded from the calculation of average emission concentrations or parameters based on the data recorded under paragraph (d)(7) of this section.

(2) The summary of data reported under paragraph (g)(1) of this section shall also provide the types of data specified in paragraphs (g)(1)(i) through (g)(1)(vi) of this section for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(3) The summary of data including the information specified in paragraphs (g)(1) and (g)(2) of this section shall highlight any emission or parameter levels that did not achieve the emission or parameter limits specified under this subpart.

(4) A notification of intent to begin the reduced dioxin/furan performance testing schedule specified in §60.58b(g)(5)(iii) of this section during the following calendar year.

(h) The owner or operator of an affected facility shall submit a semiannual report that includes the information specified in paragraphs (h)(1) through (h)(5) of this section for any recorded pollutant or parameter that does not comply with the pollutant or parameter limit specified under this subpart, according to the schedule specified under paragraph (h)(6) of this section.

(1) The semiannual report shall include information recorded under paragraph (d)(3) of this section for sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, particulate matter control device inlet temperature, and opacity.

(2) For each date recorded as required by paragraph (d)(3) of this section and reported as required by paragraph (h)(1) of this section, the semiannual report shall include the sulfur dioxide, nitrogen oxides, carbon monoxide, municipal waste combustor unit load level, particulate matter control device inlet temperature, or opacity data, as applicable, recorded under paragraphs (d)(2)(ii)(A) through (d)(2)(ii)(D) and (d)(2)(i)(A) of this section, as applicable.

(3) If the test reports recorded under paragraph (d)(9) of this section document any particulate matter, opacity, cadmium, lead, mercury, dioxins/furans, hydrogen chloride, and fugitive ash emission levels that were above the applicable pollutant limits, the semiannual report shall include a copy of the test report documenting the emission levels and the corrective actions taken.

(4) The semiannual report shall include the information recorded under paragraph (d)(15) of this section for the carbon injection system operating parameter(s) that are the primary indicator(s) of carbon mass feed rate.

(5) For each operating date reported as required by paragraph (h)(4) of this section, the semiannual report shall include the carbon feed rate data recorded under paragraph (d)(4)(iii) of this section.

(6) Semiannual reports required by paragraph (h) of this section shall be submitted according to the schedule specified in paragraphs (h)(6)(i) and (h)(6)(ii) of this section.

(i) If the data reported in accordance with paragraphs (h)(1) through (h)(5) of this section were collected during the first calendar half, then the report shall be submitted by August 1 following the first calendar half.

(ii) If the data reported in accordance with paragraphs (h)(1) through (h)(5) of this section were collected during the second calendar half, then the report shall be submitted by February 1 following the second calendar half.

(i) The owner or operator of an air curtain incinerator subject to the opacity limit under §60.56b shall submit the results of the initial opacity performance test and all subsequent annual performance tests recorded under paragraph (e) of this section. Annual performance tests shall be submitted by February 1 of the year following the year of the performance test.

(j) All reports specified under paragraphs (a), (b), (c), (f), (g), (h), and (i) of this section shall be submitted as a paper copy, postmarked on or before the submittal dates specified under these paragraphs, and maintained onsite as a paper copy for a period of 5 years.

(k) All records specified under paragraphs (d) and (e) of this section shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the Administrator.

(l) If the owner or operator of an affected facility would prefer a different annual or semiannual date for submitting the periodic reports required by paragraphs (g), (h) and (i) of this section, then the dates may be changed by mutual agreement between the owner or operator and the Administrator according to the procedures specified in §60.19(c) of subpart A of this part.

[60 FR 65419, Dec. 19, 1995, as amended at 62 FR 45121, 45127, Aug. 25, 1997]

Subpart Ec—Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996

SOURCE: 62 FR 48382, Sept. 15, 1997, unless otherwise noted.

§60.50c Applicability and delegation of authority.

(a) Except as provided in paragraphs (b) through (h) of this section, the affected facility to which this subpart applies is each individual hospital/medical/infectious waste incinerator (HMIWI) for which construction is commenced after June 20, 1996 or for which modification is commenced after March 16, 1998.

(b) A combustor is not subject to this subpart during periods when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste (all defined in § 60.51c) is burned, provided the owner or operator of the combustor:

(1) Notifies the Administrator of an exemption claim; and

(2) Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactivewaste and/or chemotherapeutic waste is burned.

(c) Any co-fired combustor (defined in § 60.51c) is not subject to this subpart if the owner or operator of the co-fired combustor:

(1) Notifies the Administrator of an exemption claim;

(2) Provides an estimate of the relative amounts of hospital waste, medical/infectious waste, and other fuels and wastes to be combusted; and

(3) Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

(d) Any combustor required to have a permit under section 3005 of the Solid Waste Disposal Act is not subject to this subpart.

(e) Any combustor which meets the applicability requirements under subpart Cb, Ea, or Eb of this part (standards or guidelines for certain municipal waste combustors) is not subject to this subpart.

(f) Any pyrolysis unit (defined in § 60.51c) is not subject to this subpart.

(g) Cement kilns firing hospital waste and/or medical/infectious waste are not subject to this subpart.

(h) Physical or operational changes made to an existing HMIWI solely for the purpose of complying with emission guidelines under subpart Ce are not considered a modification and do not result in an existing HMIWI becoming subject to this subpart.

(i) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State:

(1) The requirements of § 60.56c(i) establishing operating parameters when using controls other than those listed in § 60.56c(d).

(2) Alternative methods of demonstrating compliance under § 60.8.

(j) Affected facilities subject to this subpart are not subject to the requirements of 40 CFR part 64.

(k) The requirements of this subpart shall become effective March 16, 1998

(l) Beginning September 15, 2000, or on the effective date of an EPA-approved operating permit program under Clean Air Act title V and the implementing regulations under 40 CFR part 70 in the State in which the unit is located, whichever date is later, affected facilities subject to this subpart shall operate pursuant to a permit issued under the EPA approved State operating permit program.

§ 60.51c Definitions.

Batch HMIWI means an HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion.

Biologicals means preparations made from living organisms and their products, including vaccines, cultures, etc., intended for use in diagnosing, immunizing, or treating humans or animals or in research pertaining thereto.

Blood products means any product derived from human blood, including but not limited to blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon, etc.

Body fluids means liquid emanating or derived from humans and limited to blood; dialysate; amniotic, cerebrospinal, synovial, pleural, peritoneal and pericardial fluids; and semen and vaginal secretions.

Bypass stack means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Co-fired combustor means a unit combusting hospital waste and/or medical/

infectious waste with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceable requirement limiting the unit to combusting a fuel feed stream, 10 percent or less of the weight of which is comprised, in aggregate, of hospital waste and medical/infectious waste as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered ''other'' wastes when calculating the percentage of hospital waste and medical/infectious waste combusted.

Continuous emission monitoring system or *CEMS* means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.

Continuous HMIWI means an HMIWI that is designed to allow waste charging and ash removal during combustion.

Dioxins/furans means the combined emissions of tetra-through octa-chlorinated dibenzo-para-dioxins and dibenzofurans, as measured by EPA Reference Method 23.

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gases in the HMIWI exhaust stream forming a dry powder material.

Fabric filter or *baghouse* means an add-on air pollution control system that removes particulate matter (PM) and nonvaporous metals emissions by passing flue gas through filter bags.

Facilities manager means the individual in charge of purchasing, maintaining, and operating the HMIWI or the owner's or operator's representative responsible for the management of the HMIWI. Alternative titles may include director of facilities or vice president of support services.

High-air phase means the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures.

Hospital means any facility which has an organized medical staff, maintains at least six inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human inpatients who are not related and who stay on average in excess of 24 hours per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision.

Hospital/medical/infectious waste incinerator or *HMIWI* or *HMIWI unit* means any device that combusts any amount of hospital waste and/or medical/infectious waste.

Hospital/medical/infectious waste incinerator operator or *HMIWI operator* means any person who operates, controls or supervises the day-to-day operation of an HMIWI.

Hospital waste means discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.

Infectious agent means any organism (such as a virus or bacteria) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans.

Intermittent HMIWI means an HMIWI that is designed to allow waste charging, but not ash removal, during combustion.

Large HMIWI means:

(1) Except as provided in (2);

(i) An HMIWI whose maximum design waste burning capacity is more than 500 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is more than 500 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day.

(2) The following are not large HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 500 pounds per hour; or

(ii) A batch HMIWI whose maximum charge rate is less than or equal to 4,000 pounds per day.

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions. During periods of malfunction the operator shall operate within established parameters as much as possible, and monitoring of all applicable operating parameters shall continue until all waste has been combusted or until the malfunction ceases, whichever comes first.

Maximum charge rate means:

(1) For continuous and intermittent HMIWI, 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

(2) For batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

Maximum design waste burning capacity means:

(1) For intermittent and continuous HMIWI,

$C=P_V \times 15{,}000/8{,}500$

Where:

C=HMIWI capacity, lb/hr

P_V=primary chamber volume, ft^3

15,000=primary chamber heat release rate factor, Btu/ft^3/hr

68,500=standard waste heating value, Btu/lb;

(2) For batch HMIWI,

$C=P_V \times 4.5/8$

Where:

C=HMIWI capacity, lb/hr

P_V=primary chamber volume, ft^3

164.5=waste density, lb/ft^3

8=typical hours of operation of a batch HMIWI, hours.

Maximum fabric filter inlet temperature means 110 percent of the lowest 3-hour average temperature at the inlet to the fabric filter (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit.

Maximum flue gas temperature means 110 percent of the lowest 3-hour average temperature at the outlet from the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the mercury (Hg) emission limit.

Medical/infectious waste means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed in paragraphs (1) through (7) of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in part 261 of this chapter; household waste, as defined in §261.4(b)(1) of this chapter; ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment mation; and domestic sewage materials identified in §261.4(a)(1) of this chapter.

(1) Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.

(2) Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.

(3) Human blood and blood products including:

(i) Liquid waste human blood;

(ii) Products of blood;

(iii) Items saturated and/or dripping with human blood; or

(iv) Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also include in this category.

(4) Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

(5) Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.

(6) Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

(7) Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

Medium HMIWI means:

(1) Except as provided in paragraph (2);

(i) An HMIWI whose maximum design waste burning capacity is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day but less than or equal to 4,000 pounds per day.

(2) The following are not medium HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour or more than 500 pounds per hour; or

(ii) A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day or less than or equal to 1,600 pounds per day.

Minimum dioxin/furan sorbent flow rate means 90 percent of the highest 3-hour average dioxin/furan sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the dioxin/furan emission limit.

Minimum Hg sorbent flow rate means 90 percent of the highest 3-hour average Hg sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the Hg emission limit.

Minimum hydrogen chloride (HCl) sorbent flow rate means 90 percent of the highest 3-hour average HCl sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent performance test demonstrating compliance with the HCl emission limit.

Minimum horsepower or amperage means 90 percent of the highest 3-hour average horsepower or amperage to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the applicable emission limits.

Minimum pressure drop across the wet scrubber means 90 percent of the highest 3-hour average pressure drop across the wet scrubber PM control device (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM emission limit.

Minimum scrubber liquor flow rate means 90 percent of the highest 3-hour average liquor flow rate at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with all applicable emission limits.

Minimum scrubber liquor pH means 90 percent of the highest 3-hour average liquor pH at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the HCl emission limit.

Minimum secondary chamber temperature means 90 percent of the highest 3-hour average secondary chamber temperature (taken, at a minimum, once every minute) measured during the most recent performance test demonstrating compliance with the PM, CO, or dioxin/furan emission limits.

Modification or *Modified HMIWI* means any change to an HMIWI unit after the effective date of these standards such that:

(1) The cumulative costs of the modifications, over the life of the unit, exceed 50 per centum of the original cost of the construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs, or

(2) The change involves a physical change in or change in the method of operation of the unit which increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111.

Operating day means a 24-hour period between 12:00 midnight and the following midnight during which any amount of hospital waste or medical/infectious waste is combusted at any time in the HMIWI.

Operation means the period during which waste is combusted in the incinerator excluding periods of startup or shutdown.

Particulate matter or *PM* means the total particulate matter emitted from an HMIWI as measured by EPA Reference Method 5 or EPA Reference Method 29.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Primary chamber means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.

Pyrolysis means the endothermic gasification of hospital waste and/or medical/infectious waste using external energy.

Secondary chamber means a component of the HMIWI that receives combustion gases from the primary chamber and in which the combustion process is completed.

Shutdown means the period of time after all waste has been combusted in the primary chamber. For continuous HMIWI, shutdown shall commence no less than 2 hours after the last charge to the incinerator. For intermittent HMIWI, shutdown shall commence no less than 4 hours after the last charge to the incinerator. For batch HMIWI, shutdown shall commence no less than 5 hours after the high-air phase of combustion has been completed.

Small HMIWI means:

(1) Except as provided in (2);

(i) An HMIWI whose maximum design waste burning capacity is less than or equal to 200 pounds per hour; or

(ii) A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour; or

(iii) A batch HMIWI whose maximum charge rate is less than or equal to 1,600 pounds per day.

(2) The following are not small HMIWI:

(i) A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour;

(ii) A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day.

Standard conditions means a temperature of 20 °C and a pressure of 101.3 kilopascals.

Startup means the period of time between the activation of the system and the first charge to the unit. For batch HMIWI, startup means the period of time between activation of the system and ignition of the waste.

Wet scrubber means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

§ 60.52c Emission limits.

(a) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from that affected facility any gases that contain stack emissions in excess of the limits presented in Table 1 of this subpart.

(b) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility shall cause to be discharged into the atmosphere from the stack of that affected facility any gases that exhibit greater than 10 percent opacity (6-minute block average).

(c) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility utilizing a large HMIWI shall cause to be discharged into the atmosphere visible emissions of combustion ash from an ash conveying system (including conveyor transfer points) in excess of 5 percent of the observation period (i.e., 9 minutes per 3-hour period), as determined by EPA Reference Method 22, except as provided in paragraphs (d) and (e) of this section.

(d) The emission limit specified in paragraph (c) of this section does not cover visible emissions discharged inside buildings or enclosures of ash conveying systems; however, the emission limit does cover visible emissions discharged to the atmosphere from buildings or enclosures of ash conveying systems.

(e) The provisions specified in paragraph (c) of this section do not apply during maintenance and repair of ash conveying systems. Maintenance and/or repair shall not exceed 10 operating days per calendar quarter unless the owner or operator obtains written approval from the State agency establishing a date whereby all necessary maintenance and repairs of ash conveying systems shall be completed.

§ 60.53c Operator training and qualification requirements.

(a) No owner or operator of an affected facility shall allow the affected facility to operate at any time unless a fully trained and qualified HMIWI operator is accessible, either at the facility or available within 1 hour. The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.

(b) Operator training and qualification shall be obtained through a State-approved program or by completing the requirements included in paragraphs (c) through (g) of this section.

(c) Training shall be obtained by completing an HMIWI operator training course that includes, at a minimum, the following provisions:

(1) 24 hours of training on the following subjects:

(i) Environmental concerns, including pathogen destruction and types of emissions;

(ii) Basic combustion principles, including products of combustion;

(iii) Operation of the type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;

(iv) Combustion controls and monitoring;

(v) Operation of air pollution control equipment and factors affecting performance (if applicable);

(vi) Methods to monitor pollutants (continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration procedures (where applicable);

(vii) Inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems;

(viii) Actions to correct malfunctions or conditions that may lead to malfunction;

(ix) Bottom and fly ash characteristics and handling procedures;

(x) Applicable Federal, State, and local regulations;

(xi) Work safety procedures;

(xii) Pre-startup inspections; and

(xiii) Recordkeeping requirements.

(2) An examination designed and administered by the instructor.

(3) Reference material distributed to the attendees covering the course topics.

(d) Qualification shall be obtained by:

(1) Completion of a training course that satisfies the criteria under paragraph (c) of this section; and

(2) Either 6 months experience as an HMIWI operator, 6 months experience as a direct supervisor of an HMIWI operator, or completion of at least two burn cycles under the observation of two qualified HMIWI operators.

(e) Qualification is valid from the date on which the examination is passed or the completion of the required experience, whichever is later.

(f) To maintain qualification, the trained and qualified HMIWI operator shall complete and pass an annual review or refresher course of at least 4 hours covering, at a minimum, the following:

(1) Update of regulations;

(2) Incinerator operation, including startup and shutdown procedures;

(3) Inspection and maintenance;

(4) Responses to malfunctions or conditions that may lead to malfunction; and

(5) Discussion of operating problems encountered by attendees.

(g) A lapsed qualification shall be renewed by one of the following methods:

(1) For a lapse of less than 3 years, the HMIWI operator shall complete and pass a standard annual refresher course described in paragraph (f) of this section.

(2) For a lapse of 3 years or more, the HMIWI operator shall complete and pass a training course with the minimum criteria described in paragraph (c) of this section.

(h) The owner or operator of an affected facility shall maintain documentation at the facility that address the following:

(1) Summary of the applicable standards under this subpart;

(2) Description of basic combustion theory applicable to an HMIWI;

(3) Procedures for receiving, handling, and charging waste;

(4) HMIWI startup, shutdown, and malfunction procedures;

(5) Procedures for maintaining proper combustion air supply levels;

(6) Procedures for operating the HMIWI and associated air pollution control systems within the standards established under this subpart;

(7) Procedures for responding to periodic malfunction or conditions that may lead to malfunction;

(8) Procedures for monitoring HMIWI emissions;

(9) Reporting and recordkeeping procedures; and

(10) Procedures for handling ash.

(i) The owner or operator of an affected facility shall establish a program for reviewing the information listed in paragraph (h) of this section annually with each HMIWI operator (defined in § 60.51c).

(1) The initial review of the information listed in paragraph (h) of this section shall be conducted within 6 months after the effective date of this subpart or prior to assumption of responsibilities affecting HMIWI operation, whichever date is later.

(2) Subsequent reviews of the information listed in paragraph (h) of this section shall be conducted annually.

(j) The information listed in paragraph (h) of this section shall be kept in a readily accessible location for all HMIWI operators. This information, along with records of training shall be available for inspection by the EPA or its delegated enforcement agent upon request.

§ 60.54c Siting requirements.

(a) The owner or operator of an affected facility for which construction is commenced after September 15, 1997 shall prepare an analysis of the impacts of the affected facility. The analysis shall consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, the analysis may consider costs, energy impacts, non-air environmental impacts, or any other factors related to the practicability of the alternatives.

(b) Analyses of facility impacts prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, as long as they include the consideration of air pollution control alternatives specified in paragraph (a) of this section.

(c) The owner or operator of the affected facility shall complete and submit the siting requirements of this section as required under § 60.58c(a)(1)(iii).

§ 60.55c Waste management plan.

The owner or operator of an affected facility shall prepare a waste management plan. The waste management plan shall identify both the feasibility and the approach to separate certain components of solid waste from the health care waste stream in order to reduce the amount of toxic emissions from incinerated waste. A waste management plan may include, but is not limited to, elements such as paper, cardboard, plastics, glass, battery, or metal recycling; or purchasing recycled or recyclable products. A waste management plan may include different goals or approaches for different areas or departments of the facility and need not include new waste management goals for every waste stream. It should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emission reductions expected to be achieved, and any other environmental or energy impacts they might have. The American Hospital Association publication entitled ''An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities'' (incorporated by reference, see § 60.17) shall be considered in the development of the waste management plan.

§ 60.56c Compliance and performance testing.

(a) The emission limits under this subpart apply at all times except during periods of startup, shutdown, or malfunction, provided that no hospital waste or medical/infectious waste is charged to the affected facility during startup, shutdown, or malfunction.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8 to determine compliance with the emission limits using the procedures and test methods listed in paragraphs (b)(1) through (b)(12) of this section. The use of the bypass stack during a performance test shall invalidate the performance test.

(1) All performance tests shall consist of a minimum of three test runs conducted under representative operating conditions.

(2) The minimum sample time shall be 1 hour per test run unless otherwise indicated.

(3) EPA Reference Method 1 of appendix A of this part shall be used to select the sampling location and number of traverse points.

(4) EPA Reference Method 3, 3A, or 3B of appendix A of this part shall be used for gas composition analysis, including measurement of oxygen concentration. EPA Reference Method 3, 3A, or 3B of appendix A of this part shall be used simultaneously with each reference method.

(5) The pollutant concentrations shall be adjusted to 7 percent oxygen using the following equation:

$C_{adj}=C_{meas}\ (20.9—7)/(20.9—\%O_2)$ where:

C_{adj}=pollutant concentration adjusted to 7 percent oxygen;
C_{meas}=pollutant concentration measured on a dry basis (20.9—7)=20.9 percent oxygen—7 percent oxygen (defined oxygen correction basis);
20.9=oxygen concentration in air, percent; and
$\%O_2$=oxygen concentration measured on a dry basis, percent.

(6) EPA Reference Method 5 or 29 of appendix A of this part shall be used to measure the particulate matter emissions.

(7) EPA Reference Method 9 of appendix A of this part shall be used to measure stack opacity.

(8) EPA Reference Method 10 or 10B of appendix A of this part shall be used to measure the CO emissions.

(9) EPA Reference Method 23 of appendix A of this part shall be used to measure total dioxin/furan emissions. The minimum sample time shall be 4 hours per test run. If the affected facility has selected the toxic equivalency standards for dioxin/furans, under

§ 60.52c, the following procedures shall be used to determine compliance:

(i) Measure the concentration of each dioxin/furan tetra-through octa-congener emitted using EPA Reference Method 23.

(ii) For each dioxin/furan congener measured in accordance with paragraph (b)(9)(i) of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in Table 2 of this subpart.

(iii) Sum the products calculated in accordance with paragraph (b)(9)(ii) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(10) EPA Reference Method 26 or 26A of appendix A of this part shall be used to measure HCl emissions. If the affected facility has selected the percentage reduction standards for HCl under § 60.52c, the percentage reduction in HCl emissions ($\%R_{HCl}$) is computed using the following formula:

$$\left(\%R_{HCl}\right)=\left(\frac{E_i-E_o}{E_i}\right)\times 100$$

Where:

$\%R_{HCl}$=percentage reduction of HCl emissions achieved;

E_i=HCl emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis); and

E_o=HCl emission concentration measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

(11) EPA Reference Method 29 of appendix A of this part shall be used to measure Pb, Cd, and Hg emissions. If the affected facility has selected the percentage reduction standards for metals under § 60.52c, the percentage reduction in emissions ($\%R_{metal}$) is computed using the following formula:

$$\left(\%R_{metal}\right)=\left(\frac{E_i-E_o}{E_i}\right)\times 100$$

Where:

$\%R_{metal}$=percentage reduction of metal emission (Pb, Cd, or Hg) achieved;

E_i=metal emission concentration (Pb, Cd, or Hg) measured at the control device inlet, corrected to 7 percent oxygen (dry basis); and

E_o=metal emission concentration (Pb, Cd, or Hg) measured at the control device outlet, corrected to 7 percent oxygen (dry basis).

(12) The EPA Reference Method 22 of appendix A of this part shall be used to determine compliance with the fugitive ash emission limit under § 60.52c(c). The minimum observation time shall be a series of three 1-hour observations.

(c) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility shall:

(1) Determine compliance with the opacity limit by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in paragraph (b) of this section.

(2) Determine compliance with the PM, CO, and HCl emission limits by conducting an annual performance test (no more than 12 months following the previous performance test) using the applicable procedures and test methods listed in paragraph (b) of this section. If all three performance tests over a 3-year period indicate compliance with the emission limit for a pollutant (PM, CO, or HCl), the owner or operator may forego a performance test for that pollutant for the subsequent 2 years. At a minimum, a performance test for PM, CO, and HCl shall be conducted every third year (no more than 36 months following the previous performance test). If a performance test conducted every third year indicates compliance with the emission limit for a pollutant (PM, CO, or HCl), the owner or operator may forego a performance test for that pollutant for an additional 2 years. If any performance test indicates noncompliance with the respective emission limit, a performance test for that pollutant shall be conducted annually until all annual performance tests over a 3-year period indicate compliance with the emission limit. The use of the bypass stack during a performance test shall invalidate the performance test.

(3) For large HMIWI, determine compliance with the visible emission limits

for fugitive emissions from flyash/bottom ash storage and handling by conducting a performance test using EPA Reference Method 22 on an annual basis (no more than 12 months following the previous performance test).

(4) Facilities using a CEMS to demonstrate compliance with any of the emission limits under § 60.52c shall:

(i) Determine compliance with the appropriate emission limit(s) using a 12-hour rolling average, calculated each hour as the average of the previous 12 operating hours (not including startup, shutdown, or malfunction).

(ii) Operate all CEMS in accordance with the applicable procedures under appendices B and F of this part.

(d) The owner or operator of an affected facility equipped with a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and wet scrubber shall:

(1) Establish the appropriate maximum and minimum operating parameters, indicated in Table 3 of this subpart for each control system, as site specific operating parameters during the initial performance test to determine compliance with the emission limits; and

(2) Following the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, ensure that the affected facility does not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in Table 3 of this subpart and measured as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times except during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during performance tests. Operation above the established maximum or below the established minimum operating parameter(s) shall constitute a violation of established operating parameter(s).

(e) Except as provided in paragraph (h) of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter:

(1) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(2) Operation of the affected facility above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

(3) Operation of the affected facility above the maximum charge rate and below the minimum HCl sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(4) Operation of the affected facility above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the Hg emission limit.

(5) Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

(f) Except as provided in paragraph (h) of this section, for affected facilities equipped with a wet scrubber:

(1) Operation of the affected facility above the maximum charge rate and below the minimum pressure drop across the wet scrubber or below the minimum horsepower or amperage to the system (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the PM emission limit.

(2) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(3) Operation of the affected facility above the maximum charge rate, below the minimum secondary chamber temperature, and below the minimum

scrubber liquor flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

(4) Operation of the affected facility above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(5) Operation of the affected facility above the maximum flue gas temperature and above the maximum charge rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the Hg emission limit.

(6) Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

(g) Except as provided in paragraph (h) of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter and a wet scrubber:

(1) Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the CO emission limit.

(2) Operation of the affected facility above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.

(3) Operation of the affected facility above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the HCl emission limit.

(4) Operation of the affected facility above the maximum charge rate and below the minimum Hg sorbent flow rate (each measured on a 3-hour rolling average) simultaneously shall constitute a violation of the Hg emission limit.

(5) Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the PM, dioxin/furan, HCl, Pb, Cd and Hg emission limits.

(h) The owner or operator of an affected facility may conduct a repeat performance test within 30 days of violation of applicable operating parameter(s) to demonstrate that the affected facility is not in violation of the applicable emission limit(s). Repeat performance tests conducted pursuant to this paragraph shall be conducted using the identical operating parameters that indicated a violation under paragraph (e), (f), or (g) of this section.

(i) The owner or operator of an affected facility using an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber to comply with the emission limits under §60.52c shall petition the Administrator for other site-specific operating parameters to be established during the initial performance test and continuously monitored thereafter. The owner or operator shall not conduct the initial performance test until after the petition has been approved by the Administrator.

(j) The owner or operator of an affected facility may conduct a repeat performance test at any time to establish new values for the operating parameters. The Administrator may request a repeat performance test at any time.

[62 FR 48382, Sept. 15, 1997, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.57c Monitoring requirements.

(a) The owner or operator of an affected facility shall install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the applicable maximum and minimum operating parameters listed in Table 3 of this subpart such that these devices (or methods) measure and record values for these operating parameters at the frequencies indicated in Table 3 of this subpart at all times except during periods of startup and shutdown.

(b) The owner or operator of an affected facility shall install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack including date, time, and duration.

(c) The owner or operator of an affected facility using something other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber to comply with the emission limits under § 60.52c shall install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor the site-specific operating parameters developed pursuant to § 60.56c(i).

(d) The owner or operator of an affected facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day and for 90 percent of the operating days per calendar quarter that the affected facility is combusting hospital waste and/or medical/infectious waste.

§ 60.58c Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility shall submit notifications, as provided by § 60.7. In addition, the owner or operator shall submit the following information:

(1) Prior to commencement of construction;

(i) A statement of intent to construct;

(ii) The anticipated date of commencement of construction; and

(iii) All documentation produced as a result of the siting requirements of § 60.54c.

(2) Prior to initial startup;

(i) The type(s) of waste to be combusted;

(ii) The maximum design waste burning capacity;

(iii) The anticipated maximum charge rate; and

(iv) If applicable, the petition for site-specific operating parameters under § 60.56c(i).

(b) The owner or operator of an affected facility shall maintain the following information (as applicable) for a period of at least 5 years:

(1) Calendar date of each record;

(2) Records of the following data:

(i) Concentrations of any pollutant listed in § 60.52c or measurements of opacity as determined by the continuous emission monitoring system (if applicable);

(ii) Results of fugitive emissions (by EPA Reference Method 22) tests, if applicable;

(iii) HMIWI charge dates, times, and weights and hourly charge rates;

(iv) Fabric filter inlet temperatures during each minute of operation, as applicable;

(v) Amount and type of dioxin/furan sorbent used during each hour of operation, as applicable;

(vi) Amount and type of Hg sorbent used during each hour of operation, as applicable;

(vii) Amount and type of HCl sorbent used during each hour of operation, as applicable;

(viii) Secondary chamber temperatures recorded during each minute of operation;

(ix) Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable;

(x) Horsepower or amperage to the wet scrubber during each minute of operation, as applicable;

(xi) Pressure drop across the wet scrubber system during each minute of operation, as applicable,

(xii) Temperature at the outlet from the wet scrubber during each minute of operation, as applicable;

(xiii) pH at the inlet to the wet scrubber during each minute of operation, as applicable,

(xiv) Records indicating use of the bypass stack, including dates, times, and durations, and

(xv) For affected facilities complying with §§ 60.56c(i) and 60.57c(c), the owner or operator shall maintain all operating parameter data collected.

(3) Identification of calendar days for which data on emission rates or operating parameters specified under paragraph (b)(2) of this section have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken.

(4) Identification of calendar days, times and durations of malfunctions, a

description of the malfunction and the corrective action taken.

(5) Identification of calendar days for which data on emission rates or operating parameters specified under paragraph (b)(2) of this section exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.

(6) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating parameters, as applicable.

(7) All documentation produced as a result of the siting requirements of §60.54c;

(8) Records showing the names of HMIWI operators who have completed review of the information in §60.53c(h) as required by §60.53c(i), including the date of the initial review and all subsequent annual reviews;

(9) Records showing the names of the HMIWI operators who have completed the operator training requirements, including documentation of training and the dates of the training;

(10) Records showing the names of the HMIWI operators who have met the criteria for qualification under §60.53c and the dates of their qualification; and

(11) Records of calibration of any monitoring devices as required under §60.57c (a), (b), and (c).

(c) The owner or operator of an affected facility shall submit the information specified in paragraphs (c)(1) through (c)(3) of this section no later than 60 days following the initial performance test. All reports shall be signed by the facilities manager.

(1) The initial performance test data as recorded under §60.56c (b)(1) through (b)(12), as applicable.

(2) The values for the site-specific operating parameters established pursuant to §60.56c (d) or (i), as applicable.

(3) The waste management plan as specified in §60.55c.

(d) An annual report shall be submitted 1 year following the submission of the information in paragraph (c) of this section and subsequent reports shall be submitted no more than 12 months following the previous report (once the unit is subject to permitting requirements under Title V of the Clean Air Act, the owner or operator of an affected facility must submit these reports semiannually). The annual report shall include the information specified in paragraphs (d)(1) through (d)(8) of this section. All reports shall be signed by the facilities manager.

(1) The values for the site-specific operating parameters established pursuant to §60.56c (d) or (i), as applicable.

(2) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year being reported, pursuant to §60.56c(d) or (i), as applicable.

(3) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable for each operating parameter recorded pursuant to §60.56c (d) or (i) for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(4) Any information recorded under paragraphs (b)(3) through (b)(5) of this section for the calendar year being reported.

(5) Any information recorded under paragraphs (b)(3) through (b)(5) of this section for the calendar year preceding the year being reported, in order to provide the Administrator with a summary of the performance of the affected facility over a 2-year period.

(6) If a performance test was conducted during the reporting period, the results of that test.

(7) If no exceedances or malfunctions were reported under paragraphs (b)(3) through (b)(5) of this section for the calendar year being reported, a statement that no exceedances occurred during the reporting period.

(8) Any use of the bypass stack, the duration, reason for malfunction, and corrective action taken.

(e) The owner or operator of an affected facility shall submit semiannual reports containing any information recorded under paragraphs (b)(3) through (b)(5) of this section no later than 60 days following the reporting period. The first semiannual reporting period ends 6 months following the submission of information in paragraph (c) of this section. Subsequent reports shall be submitted no later than 6 calendar months following the previous report. All reports shall be signed by the facilities manager.

(f) All records specified under paragraph (b) of this section shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the Administrator.

TABLE 1 TO SUBPART Ec—EMISSION LIMITS FOR SMALL, MEDIUM, AND LARGE HMIWI

Pollutant	Units (7 percent oxygen, dry basis)	Emission limits HMIWI size Small	 Medium	 Large
Particulate matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot).	69 (0.03)	34 (0.015)	34 (0.015).
Carbon monoxide	Parts per million by volume	40	40	40.
Dioxins/furans	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter total dioxins/furans TEQ (grains per billion dry standard cubic feet).	125 (55) or 2.3 (1.0).	25 (11) or 0.6 (0.26).	25 (11) or 0.6 (0.26).
Hydrogen chloride	Parts per million or percent reduction	15 or 99%	15 or 99%	15 or 99%.
Sulfur dioxide	Parts per million by volume	55	55	55.
Nitrogen oxides	Parts per million by volume	250	250	250.
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	1.2 (0.52) or 70%	0.07 (0.03) or 98%.	0.07 (0.03) or 98%.
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	0.16 (0.07) or 65%.	0.04 (0.02) or 90%.	0.04 (0.02) or 90%.
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction.	0.55 (0.24) or 85%.	0.55 (0.24) or 85%.	0.55 (0.24) or 85%.

TABLE 2 TO SUBPART Ec—TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
Octachlorinated dibenzofuran	0.001

TABLE 3 TO SUBPART Ec—OPERATING PARAMETERS TO BE MONITORED AND MINIMUM MEASUREMENT AND RECORDING FREQUENCIES

Operating parameters to be monitored	Minimum frequency Data measurement	 Data recording	Control system Dry scrubber followed by fabric filter	 Wet scrubber	 Dry scrubber followed by fabric filter and wet scrubber
Maximum operating parameters:					
Maximum charge rate	Continuous	1×hour	✔	✔	✔
Maximum fabric filter inlet temperature.	Continuous	1×minute	✔		✔

TABLE 3 TO SUBPART Ec—OPERATING PARAMETERS TO BE MONITORED AND MINIMUM MEASUREMENT AND RECORDING FREQUENCIES—Continued

Operating parameters to be monitored	Minimum frequency		Control system		
	Data measurement	Data recording	Dry scrubber followed by fabric filter	Wet scrubber	Dry scrubber followed by fabric filter and wet scrubber
Maximum flue gas temperature.	Continuous	1×minute	✔	✔	
Minimum operating parameters:					
Minimum secondary chamber temperature.	Continuous	1×minute	✔	✔	✔
Minimum dioxin/furan sorbent flow rate.	Hourly	1×hour	✔		✔
Minimum HCl sorbent flow rate.	Hourly	1×hour	✔		✔
Minimum mercury (Hg) sorbent flow rate.	Hourly	1×hour	✔		✔
Minimum pressure drop across the wet scrubber or minimum horsepower or amperage to wet scrubber.	Continuous	1×minute		✔	✔
Minimum scrubber liquor flow rate.	Continuous	1×minute		✔	✔
Minimum scrubber liquor pH	Continuous	1×minute		✔	✔

Subpart F—Standards of Performance for Portland Cement Plants

§ 60.60 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in portland cement plants: Kiln, clinker cooler, raw mill system, finish mill system, raw mill dryer, raw material storage, clinker storage, finished product storage, conveyor transfer points, bagging and bulk loading and unloading systems.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977]

§ 60.61 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Portland cement plant* means any facility manufacturing portland cement by either the wet or dry process.

(b) *Bypass* means any system that prevents all or a portion of the kiln or clinker cooler exhaust gases from entering the main control device and ducts the gases through a separate control device. This does not include emergency systems designed to duct exhaust gases directly to the atmosphere in the event of a malfunction of any control device controlling kiln or clinker cooler emissions.

(c) *Bypass stack* means the stack that vents exhaust gases to the atmosphere from the bypass control device.

(d) *Monovent* means an exhaust configuration of a building or emission control device (e.g., positive-pressure fabric filter) that extends the length of the structure and has a width very small in relation to its length (i.e., length to width ratio is typically greater than 5:1). The exhaust may be an open vent with or without a roof, louvered vents, or a combination of such features.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 20793, June 13, 1974; 53 FR 50363, Dec. 14, 1988]

§ 60.62 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any kiln any gases which:

(1) Contain particulate matter in excess of 0.15 kg per metric ton of feed (dry basis) to the kiln (0.30 lb per ton).

(2) Exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any clinker cooler any gases which:

(1) Contain particulate matter in excess of 0.050 kg per metric ton of feed (dry basis) to the kiln (0.10 lb per ton).

(2) Exhibit 10 percent opacity, or greater.

(c) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility other than the kiln and clinker cooler any gases which exhibit 10 percent opacity, or greater.

[39 FR 20793, June 14, 1974, as amended at 39 FR 39874, Nov. 12, 1974; 40 FR 46258, Oct. 6, 1975]

§60.63 Monitoring of operations.

(a) The owner or operator of any portland cement plant subject to the provisions of this part shall record the daily production rates and kiln feed rates.

(b) Except as provided in paragraph (c) of this section, each owner or operator of a kiln or clinker cooler that is subject to the provisions of this subpart shall install, calibrate, maintain, and operate in accordance with §60.13 a continuous opacity monitoring system to measure the opacity of emissions discharged into the atmosphere from any kiln or clinker cooler. Except as provided in paragraph (c) of this section, a continuous opacity monitoring system shall be installed on each stack of any multiple stack device controlling emissions from any kiln or clinker cooler. If there is a separate bypass installed, each owner or operator of a kiln or clinker cooler shall also install, calibrate, maintain, and operate a continuous opacity monitoring system on each bypass stack in addition to the main control device stack. Each owner or operator of an affected kiln or clinker cooler for which the performance test required under §60.8 has been completed on or prior to December 14, 1988, shall install the continuous opacity monitoring system within 180 days after December 14, 1988.

(c) Each owner or operator of a kiln or clinker cooler subject to the provisions of this subpart using a positive-pressure fabric filter with multiple stacks, or a negative-pressure fabric filter with multiple stacks, or an electrostatic precipitator with multiple stacks may, in lieu of installing the continuous opacity monitoring system required by §60.63(b), monitor visible emissions at least once per day by using a certified visible emissions observer. If the control device exhausts gases through a monovent, visible emission observations in lieu of a continuous opacity monitoring system are required. These observations shall be taken in accordance with EPA Method 9. Visible emissions shall be observed during conditions representative of normal operation. Observations shall be recorded for at least three 6-minute periods each day. In the event that visible emissions are observed for a number of emission sites from the control device with multiple stacks, Method 9 observations shall be recorded for the emission site with the highest opacity. All records of visible emissions shall be maintained for a period of 2 years.

(d) For the purpose of reports under §60.65, periods of excess emissions that shall be reported are defined as all 6-minute periods during which the average opacity exceeds that allowed by §60.62(a)(2) or §60.62(b)(2).

(e) The provisions of paragraphs (a), (b), and (c) of this section apply to kilns and clinker coolers for which construction, modification, or reconstruction commenced after August 17, 1971.

[36 FR 24877, Dec. 23, 1971, as amended at 53 FR 50363, Dec. 14, 1988]

§60.64 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standard in § 60.62 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\ Q_{sd})/(P\ K)$$

where:

E=emission rate of particulate matter, kg/metric ton (lb/ton) of kiln feed.

c_s=concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=total kiln feed (dry basis) rate, metric ton/hr (ton/hr).

K=conversion factor, 1000 g/kg (7000 gr/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas.

The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30.0 dscf) for the kiln and at least 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.

(3) Suitable methods shall be used to determine the kiln feed rate (P), except fuels, for each run. Material balance over the production system shall be used to confirm the feed rate.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6666, Feb. 14, 1989, as amended at 65 FR 61753, Oct. 17, 2000]

§ 60.65 Recordkeeping and reporting requirements.

(a) Each owner or operator required to install a continuous opacity monitoring system under § 60.63(b) shall submit reports of excess emissions as defined in § 60.63(d). The content of these reports must comply with the requirements in § 60.7(c). Notwithstanding the provisions of § 60.7(c), such reports shall be submitted semiannually.

(b) Each owner or operator monitoring visible emissions under § 60.63(c) shall submit semiannual reports of observed excess emissions as defined in § 60.63(d).

(c) Each owner or operator of facilities subject to the provisions of § 60.63(c) shall submit semiannual reports of the malfunction information required to be recorded by § 60.7(b). These reports shall include the frequency, duration, and cause of any incident resulting in deenergization of any device controlling kiln emissions or in the venting of emissions directly to the atmosphere.

(d) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Clean Air Act, 42 U.S.C. 7411, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

[53 FR 50364, Dec. 14, 1988]

§ 60.66 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: No restrictions.

[53 FR 50364, Dec. 14, 1988]

Subpart G—Standards of Performance for Nitric Acid Plants

§ 60.70 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each nitric acid production unit, which is the affected facility.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977]

§ 60.71 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Nitric acid production unit* means any facility producing weak nitric acid by either the pressure or atmospheric pressure process.

(b) *Weak nitric acid* means acid which is 30 to 70 percent in strength.

§ 60.72 Standard for nitrogen oxides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain nitrogen oxides, expressed as NO_2, in excess of 1.5 kg per metric ton of acid produced (3.0 lb per ton), the production being expressed as 100 percent nitric acid.

(2) Exhibit 10 percent opacity, or greater.

[39 FR 20794, June 14, 1974, as amended at 40 FR 46258, Oct. 6, 1975]

§ 60.73 Emission monitoring.

(a) The source owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system for measuring nitrogen oxides (NO_x). The pollutant gas mixtures under Performance Specification 2 and for calibration checks under § 60.13(d) of this part shall be nitrogen dioxide (NO_2). The span value shall be 500 ppm of NO_2. Method 7 shall be used for the performance evaluations under § 60.13(c). Acceptable alternative methods to Method 7 are given in § 60.74(c).

(b) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be established by measuring emissions with the continuous monitoring system concurrent with measuring emissions with the applicable reference method tests. Using only that portion of the continuous monitoring emission data that represents emission measurements concurrent with the reference method test periods, the conversion factor shall be determined by dividing the reference method test data averages by the monitoring data averages to obtain a ratio expressed in units of the applicable standard to units of the monitoring data, i.e., kg/metric ton per ppm (lb/ton per ppm). The conversion factor shall be reestablished during any performance test under § 60.8 or any continuous monitoring system performance evaluation under § 60.13(c).

(c) The owner or operator shall record the daily production rate and hours of operation.

(d) [Reserved]

(e) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as any 3-hour period during which the average nitrogen oxides emissions (arithmetic average of three contiguous 1-hour periods) as measured by a continuous monitoring system exceed the standard under § 60.72(a).

[39 FR 20794, June 14, 1974, as amended at 40 FR 46258, Oct. 6, 1975; 50 FR 15894, Apr. 22, 1985; 54 FR 6666, Feb. 14, 1989]

§ 60.74 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the NO_x standard in § 60.72 as follows:

(1) The emission rate (E) of NO_x shall be computed for each run using the following equation:

$$E=(C_s\ Q_{sd})/(P\ K)$$

where:

E=emission rate of NO_x as NO_2, kg/metric ton (lb/ton) of 100 percent nitric acid.

C_s=concentration of NO_x as NO_2, g/dscm (lb/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=acid production rate, metric ton/hr (ton/hr) or 100 percent nitric acid.

K=conversion factor, 1000 g/kg (1.0 lb/lb).

(2) Method 7 shall be used to determine the NO_x concentration of each grab sample. Method 1 shall be used to select the sampling site, and the sampling point shall be the centroid of the stack or duct or at a point no closer to the walls than 1 m (3.28 ft). Four grab

samples shall be taken at approximately 15-minute intervals. The arithmetic mean of the four sample concentrations shall constitute the run value (C_s).

(3) Method 2 shall be used to determine the volumetric flow rate (Q_{sd}) of the effluent gas. The measurement site shall be the same as for the NO_x sample. A velocity traverse shall be made once per run within the hour that the NO_x samples are taken.

(4) The methods of § 60.73(c) shall be used to determine the production rate (P) of 100 percent nitric acid for each run. Material balance over the production system shall be used to confirm the production rate.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 7, Method 7A, 7B, 7C, or 7D may be used. If Method 7C or 7D is used, the sampling time shall be at least 1 hour.

(d) The owner or operator shall use the procedure in § 60.73(b) to determine the conversion factor for converting the monitoring data to the units of the standard.

[54 FR 6666, Feb. 14, 1989]

Subpart H—Standards of Performance for Sulfuric Acid Plants

§ 60.80 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each sulfuric acid production unit, which is the affected facility.

(b) Any facility under paragraph (a) of this section that commences construction or modification after August 17, 1971, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977]

§ 60.81 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Sulfuric acid production unit* means any facility producing sulfuric acid by the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge, but does not include facilities where conversion to sulfuric acid is utilized primarily as a means of preventing emissions to the atmosphere of sulfur dioxide or other sulfur compounds.

(b) *Acid mist* means sulfuric acid mist, as measured by Method 8 of appendix A to this part or an equivalent or alternative method.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 20794, June 14, 1974]

§ 60.82 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain sulfur dioxide in excess of 2 kg per metric ton of acid produced (4 lb per ton), the production being expressed as 100 percent H_2SO_4.

[39 FR 20794, June 14, 1974]

§ 60.83 Standard for acid mist.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which:

(1) Contain acid mist, expressed as H_2SO_4, in excess of 0.075 kg per metric ton of acid produced (0.15 lb per ton), the production being expressed as 100 percent H_2SO_4.

(2) Exhibit 10 percent opacity, or greater.

[39 FR 20794, June 14, 1974, as amended at 40 FR 46258, Oct. 6, 1975]

§ 60.84 Emission monitoring.

(a) A continuous monitoring system for the measurement of sulfur dioxide shall be installed, calibrated, maintained, and operated by the owner or operator. The pollutant gas used to prepare calibration gas mixtures under Performance Specification 2 and for calibration checks under § 60.13(d), shall be sulfur dioxide (SO_2). Method 8 shall be used for conducting monitoring system performance evaluations under § 60.13(c) except that only the sulfur dioxide portion of the Method 8 results shall be used. The span value shall be set at 1000 ppm of sulfur dioxide.

(b) The owner or operator shall establish a conversion factor for the purpose of converting monitoring data into units of the applicable standard (kg/metric ton, lb/ton). The conversion factor shall be determined, as a minimum, three times daily by measuring the concentration of sulfur dioxide entering the converter using suitable methods (e.g., the Reich test, National Air Pollution Control Administration Publication No. 999–AP–13) and calculating the appropriate conversion factor for each eight-hour period as follows:

$$CF=k[(1.000-0.015r)/(r-s)]$$

where:

CF=conversion factor (kg/metric ton per ppm, lb/ton per ppm).

k=constant derived from material balance. For determining CF in metric units, k=0.0653. For determining CF in English units, k=0.1306.

r=percentage of sulfur dioxide by volume entering the gas converter. Appropriate corrections must be made for air injection plants subject to the Administrator's approval.

s=percentage of sulfur dioxide by volume in the emissions to the atmosphere determined by the continuous monitoring system required under paragraph (a) of this section.

(c) The owner or operator shall record all conversion factors and values under paragraph (b) of this section from which they were computed (i.e., CF, r, and s).

(d) Alternatively, a source that processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen may use the following continuous emission monitoring approach and calculation procedures in determining SO_2 emission rates in terms of the standard. This procedure is not required, but is an alternative that would alleviate problems encountered in the measurement of gas velocities or production rate. Continuous emission monitoring systems for measuring SO_2, O_2, and CO_2 (if required) shall be installed, calibrated, maintained, and operated by the owner or operator and subjected to the certification procedures in Performance Specifications 2 and 3. The calibration procedure and span value for the SO_2 monitor shall be as specified in paragraph (b) of this section. The span value for CO_2 (if required) shall be 10 percent and for O_2 shall be 20.9 percent (air). A conversion factor based on process rate data is not necessary. Calculate the SO_2 emission rate as follows:

$$E_s=(C_s\ S)/[0.265-(0.126\ \%O_2)-(A\ \%CO_2)]$$

where:

E_s=emission rate of SO_2, kg/metric ton (lb/ton) of 100 percent of H_2SO_4 produced.

C_s=concentration of SO_2, kg/dscm (lb/dscf).

S=acid production rate factor, 368 dscm/metric ton (11,800 dscf/ton) of 100 percent H_2SO_4 produced.

$\%O_2$=oxygen concentration, percent dry basis.

A=auxiliary fuel factor,

=0.00 for no fuel.

=0.0226 for methane.

=0.0217 for natural gas.

=0.0196 for propane.

=0.0172 for No 2 oil.

=0.0161 for No 6 oil.

=0.0148 for coal.

=0.0126 for coke.

$\%CO_2$= carbon dioxide concentration, percent dry basis.

NOTE: It is necessary in some cases to convert measured concentration units to other units for these calculations:

Use the following table for such conversions:

From—	To—	Multiply by—
g/scm	kg/scm	10^{-3}
mg/scm	kg/scm	10^{-6}
ppm (SO_2)	kg/scm	2.660×10^{-6}
ppm (SO_2)	lb/scf	1.660×10^{-7}

(e) For the purpose of reports under §60.7(c), periods of excess emissions shall be all three-hour periods (or the arithmetic average of three consecutive one-hour periods) during which the integrated average sulfur dioxide emissions exceed the applicable standards under §60.82.

[39 FR 20794, June 14, 1974, as amended at 40 FR 46258, Oct. 6, 1975; 48 FR 23611, May 25, 1983; 48 FR 4700, Sept. 29, 1983; 48 FR 48669, Oct. 20, 1983; 54 FR 6666, Feb. 14, 1989; 65 FR 61753, Oct. 17, 2000]

§60.85 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the SO_2 acid mist, and visible emission standards in §§ 60.82 and 60.83 as follows:

(1) The emission rate (E) of acid mist or SO_2 shall be computed for each run using the following equation:

$$E=(CQ_{sd})/(PK)$$

where:

E=emission rate of acid mist or SO_2 kg/metric ton (lb/ton) of 100 percent H_2SO_4 produced.

C=concentration of acid mist or SO_2, g/dscm (lb/dscf).

Q_{sd}=volumetric flow rate of the effluent gas, dscm/hr (dscf/hr).

P=production rate of 100 percent H_2SO_4, metric ton/hr (ton/hr).

K=conversion factor, 1000 g/kg (1.0 lb/lb).

(2) Method 8 shall be used to determine the acid mist and SO_2 concentrations (C's) and the volumetric flow rate (Q_{sd}) of the effluent gas. The moisture content may be considered to be zero. The sampling time and sample volume for each run shall be at least 60 minutes and 1.15 dscm (40.6 dscf).

(3) Suitable methods shall be used to determine the production rate (P) of 100 percent H_2SO_4 for each run. Material balance over the production system shall be used to confirm the production rate.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) If a source processes elemental sulfur or an ore that contains elemental sulfur and uses air to supply oxygen, the following procedure may be used instead of determining the volumetric flow rate and production rate:

(i) The integrated technique of Method 3 is used to determine the O_2 concentration and, if required, CO_2 concentration.

(ii) The SO_2 or acid mist emission rate is calculated as described in § 60.84(d), substituting the acid mist concentration for C_s as appropriate.

[54 FR 6666, Feb. 14, 1989]

Subpart I—Standards of Performance for Hot Mix Asphalt Facilities

§ 60.90 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each hot mix asphalt facility. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37936, July 25, 1977, as amended at 51 FR 12325, Apr. 10, 1986]

§ 60.91 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Hot mix asphalt facility* means any facility, as described in § 60.90, used to manufacture hot mix asphalt by heating and drying aggregate and mixing with asphalt cements.

[51 FR 12325, Apr. 10, 1986]

§ 60.92 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(1) Contain particulate matter in excess of 90 mg/dscm (0.04 gr/dscf).

(2) Exhibit 20 percent opacity, or greater.

[39 FR 9314, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§60.93 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.92 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(2) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989]

Subpart J—Standards of Performance for Petroleum Refineries

§60.100 Applicability, designation of affected facility, and reconstruction.

(a) The provisions of this subpart are applicable to the following affected facilities in petroleum refineries: fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery plants except Claus plants of 20 long tons per day (LTD) or less. The Claus sulfur recovery plant need not be physically located within the boundaries of a petroleum refinery to be an affected facility, provided it processes gases produced within a petroleum refinery.

(b) Any fluid catalytic cracking unit catalyst regenerator or fuel gas combustion device under paragraph (a) of this section which commences construction or modification after June 11, 1973, or any Claus sulfur recovery plant under paragraph (a) of this section which commences construction or modification after October 4, 1976, is subject to the requirements of this subpart except as provided under paragraphs (c) and (d) of this section.

(c) Any fluid catalytic cracking unit catalyst regenerator under paragraph (b) of this section which commences construction or modification on or before January 17, 1984, is exempted from §60.104(b).

(d) Any fluid catalytic cracking unit in which a contact material reacts with petroleum derivatives to improve feedstock quality and in which the contact material is regenerated by burning off coke and/or other deposits and that commences construction or modification on or before January 17, 1984, is exempt from this subpart.

(e) For purposes of this subpart, under §60.15, the ''fixed capital cost of the new components'' includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following January 17, 1984. For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

[43 FR 10868, Mar. 15, 1978, as amended at 44 FR 61543, Oct. 25, 1979; 54 FR 34026, Aug. 17, 1989]

§60.101 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A.

(a) *Petroleum refinery* means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking or reforming of unfinished petroleum derivatives.

(b) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(c) *Process gas* means any gas generated by a petroleum refinery process unit, except fuel gas and process upset gas as defined in this section.

(d) *Fuel gas* means any gas which is generated at a petroleum refinery and which is combusted. Fuel gas also includes natural gas when the natural gas is combined and combusted in any proportion with a gas generated at a refinery. Fuel gas does not include gases generated by catalytic cracking unit catalyst regenerators and fluid coking burners.

(e) *Process upset gas* means any gas generated by a petroleum refinery process unit as a result of start-up, shut-down, upset or malfunction.

(f) *Refinery process unit* means any segment of the petroleum refinery in which a specific processing operation is conducted.

(g) *Fuel gas combustion device* means any equipment, such as process heaters, boilers and flares used to combust fuel gas, except facilities in which gases are combusted to produce sulfur or sulfuric acid.

(h) *Coke burn-off* means the coke removed from the surface of the fluid catalytic cracking unit catalyst by combustion in the catalyst regenerator. The rate of coke burn-off is calculated by the formula specified in § 60.106.

(i) *Claus sulfur recovery plant* means a process unit which recovers sulfur from hydrogen sulfide by a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide.

(j) *Oxidation control system* means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to sulfur dioxide.

(k) *Reduction control system* means an emission control system which reduces emissions from sulfur recovery plants by converting these emissions to hydrogen sulfide.

(l) *Reduced sulfur compounds* means hydrogen sulfide (H_2S), carbonyl sulfide (COS) and carbon disulfide (CS_2).

(m) *Fluid catalytic cracking unit* means a refinery process unit in which petroleum derivatives are continuously charged; hydrocarbon molecules in the presence of a catalyst suspended in a fluidized bed are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed to improve feedstock quality for additional processing; and the catalyst or contact material is continuously regenerated by burning off coke and other deposits. The unit includes the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and for heat recovery.

(n) *Fluid catalytic cracking unit catalyst regenerator* means one or more regenerators (multiple regenerators) which comprise that portion of the fluid catalytic cracking unit in which coke burn-off and catalyst or contact material regeneration occurs, and includes the regenerator combustion air blower(s).

(o) *Fresh feed* means any petroleum derivative feedstock stream charged directly into the riser or reactor of a fluid catalytic cracking unit except for petroleum derivatives recycled within the fluid catalytic cracking unit, fractionator, or gas recovery unit.

(p) *Contact material* means any substance formulated to remove metals, sulfur, nitrogen, or any other contaminant from petroleum derivatives.

(q) *Valid day* means a 24-hour period in which at least 18 valid hours of data are obtained. A ‘‘valid hour’’ is one in which at least 2 valid data points are obtained.

[39 FR 9315, Mar. 8, 1974, as amended at 43 FR 10868, Mar. 15, 1978; 44 FR 13481, Mar. 12, 1979; 45 FR 79453, Dec. 1, 1980; 54 FR 34027, Aug. 17, 1989]

§ 60.102 Standard for particulate matter.

Each owner or operator of any fluid catalytic cracking unit catalyst regenerator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the fluid catalytic cracking unit catalyst regenerator will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator:

(1) Particulate matter in excess of 1.0 kg/Mg (2.0 lb/ton) of coke burn-off in the catalyst regenerator.

(2) Gases exhibiting greater than 30 percent opacity, except for one six-minute average opacity reading in any one hour period.

(b) Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator or waste heat boiler in which auxiliary or supplemental liquid or solid fossil fuel is burned, particulate matter in excess of that permitted by paragraph (a)(1) of this section may be emitted to the atmosphere, except that the incremental rate of particulate matter emissions shall not exceed 43.0 g/MJ (0.10 lb/million Btu) of heat input attributable to such liquid or solid fossil fuel.

[39 FR 9315, Mar. 8, 1974, as amended at 42 FR 32427, June 24, 1977; 42 FR 39389, Aug. 4, 1977; 43 FR 10868, Feb. 15, 1978; 54 FR 34027, Aug. 17, 1989; 65 FR 61753, Oct. 17, 2000]

§ 60.103 Standard for carbon monoxide.

Each owner or operator of any fluid catalytic cracking unit catalyst regenerator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the fluid catalytic cracking unit catalyst regenerator will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any fluid catalytic cracking unit catalyst regenerator any gases that contain carbon monoxide (CO) in excess of 500 ppm by volume (dry basis).

[54 FR 34027, Aug. 17, 1989, as amended at 55 FR 40175, Oct. 2, 1990]

§ 60.104 Standards for sulfur oxides.

Each owner or operator that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by § 60.8, is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first.

(a) No owner or operator subject to the provisions of this subpart shall:

(1) Burn in any fuel gas combustion device any fuel gas that contains hydrogen sulfide (H_2S) in excess of 230 mg/dscm (0.10 gr/dscf). The combustion in a flare of process upset gases or fuel gas that is released to the flare as a result of relief valve leakage or other emergency malfunctions is exempt from this paragraph.

(2) Discharge or cause the discharge of any gases into the atmosphere from any Claus sulfur recovery plant containing in excess of:

(i) For an oxidation control system or a reduction control system followed by incineration, 250 ppm by volume (dry basis) of sulfur dioxide (SO_2) at zero percent excess air.

(ii) For a reduction control system not followed by incineration, 300 ppm by volume of reduced sulfur compounds and 10 ppm by volume of hydrogen sulfide (H_2S), each calculated as ppm SO_2 by volume (dry basis) at zero percent excess air.

(b) Each owner or operator that is subject to the provisions of this subpart shall comply with one of the following conditions for each affected fluid catalytic cracking unit catalyst regenerator:

(1) With an add-on control device, reduce sulfur dioxide emissions to the atmosphere by 90 percent or maintain sulfur dioxide emissions to the atmosphere less than or equal to 50 ppm by volume (vppm), whichever is less stringent; or

(2) Without the use of an add-on control device, maintain sulfur oxides emissions calculated as sulfur dioxide to the atmosphere less than or equal to 9.8 kg/Mg (20 lb/ton) coke burn-off; or

(3) Process in the fluid catalytic cracking unit fresh feed that has a total sulfur content no greater than 0.30 percent by weight.

(c) Compliance with paragraph (b)(1), (b)(2), or (b)(3) of this section is determined daily on a 7-day rolling average basis using the appropriate procedures outlined in § 60.106.

(d) A minimum of 22 valid days of data shall be obtained every 30 rolling successive calendar days when complying with paragraph (b)(1) of this section.

[43 FR 10869, Mar. 15, 1978, as amended at 54 FR 34027, Aug. 17, 1989; 55 FR 40175, Oct. 2, 1990; 65 FR 61754, Oct. 17, 2000]

§ 60.105 Monitoring of emissions and operations.

(a) Continuous monitoring systems shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart as follows:

(1) For fluid catalytic cracking unit catalyst regenerators subject to § 60.102(a)(2), an instrument for continuously monitoring and recording the opacity of emissions into the atmosphere. The instrument shall be spanned at 60, 70, or 80 percent opacity.

(2) For fluid catalytic cracking unit catalyst regenerators subject to § 60.103(a), an instrument for continuously monitoring and recording the concentration by volume (dry basis) of CO emissions into the atmosphere, except as provided in paragraph (a)(2) (ii) of this section.

(i) The span value for this instrument is 1,000 ppm CO.

(ii) A CO continuous monitoring system need not be installed if the owner or operator demonstrates that the average CO emissions are less than 50 ppm (dry basis) and also files a written request for exemption to the Administrator and receives such an exemption. The demonstration shall consist of continuously monitoring CO emissions for 30 days using an instrument that shall meet the requirements of Performance Specification 4 of Appendix B of this part. The span value shall be 100 ppm CO instead of 1,000 ppm, and the relative accuracy limit shall be 10 percent of the average CO emissions or 5 ppm CO, whichever is greater. For instruments that are identical to Method 10 and employ the sample conditioning system of Method 10A, the alternative relative accuracy test procedure in § 10.1 of Performance Specification 2 may be used in place of the relative accuracy test.

(3) For fuel gas combustion devices subject to § 60.104(a)(1), an instrument for continuously monitoring and recording the concentration by volume (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere (except where an H_2S monitor is installed under paragraph (a)(4) of this section). The monitor shall include an oxygen monitor for correcting the data for excess air.

(i) The span values for this monitor are 50 ppm SO_2 and 25 percent oxygen (O_2).

(ii) The SO_2 monitoring level equivalent to the H_2S standard under § 60.104(a)(1) shall be 20 ppm (dry basis, zero percent excess air).

(iii) The performance evaluations for this SO_2 monitor under § 60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations. Method 6 samples shall be taken at a flow rate of approximately 2 liters/min for at least 30 minutes. The relative accuracy limit shall be 20 percent or 4 ppm, whichever is greater, and the calibration drift limit shall be 5 percent of the established span value.

(iv) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location (i.e., after one of the combustion devices), if monitoring at this location accurately represents the S_2 emissions into the atmosphere from each of the combustion devices.

(4) In place of the SO_2 monitor in paragraph (a)(3) of this section, an instrument for continuously monitoring and recording the concentration (dry basis) of H_2S in fuel gases before being burned in any fuel gas combustion device.

(i) The span value for this instrument is 425 mg/dscm H_2S.

(ii) Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H_2S in the fuel gas being burned.

(iii) The performance evaluations for this H_2S monitor under § 60.13(c) shall use Performance Specification 7. Method 11, 15, 15A, or 16 shall be used for conducting the relative accuracy evaluations.

(5) For Claus sulfur recovery plants with oxidation control systems or reduction control systems followed by incineration subject to §60.104(a)(2)(i), an instrument for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of SO_2 emissions into the atmosphere. The monitor shall include an oxygen monitor for correcting the data for excess air.

(i) The span values for this monitor are 500 ppm SO_2 and 25 percent O_2.

(ii) The performance evaluations for this SO_2 monitor under §60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(6) For Claus sulfur recovery plants with reduction control systems not followed by incineration subject to §60.104(a)(2)(ii), an instrument for continuously monitoring and recording the concentration of reduced sulfur and O_2 emissions into the atmosphere. The reduced sulfur emissions shall be calculated as SO_2 (dry basis, zero percent excess air).

(i) The span values for this monitor are 450 ppm reduced sulfur and 25 percent O_2.

(ii) The performance evaluations for this reduced sulfur (and O_2) monitor under §60.13(c) shall use Performance Specification 5 of Appendix B of this Part (and Performance Specification 3 of Appendix B of this Part for the O_2 analyzer). Methods 15 or 15A and Method 3 shall be used for conducting the relative accuracy evaluations. If Method 3 yields O_2 concentrations below 0.25 percent during the performance specification test, the O_2 concentration may be assumed to be zero and the reduced sulfur CEMS need not include an O_2 monitor.

(7) In place of the reduced sulfur monitor under paragraph (a)(6) of this section, an instrument using an air or O_2 dilution and oxidation system to convert the reduced sulfur to SO_2 for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of the resultant SO_2. The monitor shall include an oxygen monitor for correcting the data for excess oxygen.

(i) The span values for this monitor are 375 ppm SO_2 and 25 percent O_2.

(ii) For reporting purposes, the SO_2 exceedance level for this monitor is 250 ppm (dry basis, zero percent excess air).

(iii) The performance evaluations for this SO_2 (and O_2) monitor under §60.13(c) shall use Performance Specification 5. Methods 15 or 15A and Method 3 shall be used for conducting the relative accuracy evaluations.

(8) An instrument for continuously monitoring and recording concentrations of SO_2 in the gases at both the inlet and outlet of the SO_2 control device from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply with §60.104 (b)(1).

(i) The span value of the inlet monitor shall be set 125 percent of the maximum estimated hourly potential SO_2 emission concentration entering the control device, and the span value of the outlet monitor shall be set at 50 percent of the maximum estimated hourly potential sulfur dioxide emission concentration entering the control device.

(ii) The performance evaluations for these SO_2 monitors under §60.13(c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(9) An instrument for continuously monitoring and recording concentrations of SO_2 in the gases discharged into the atmosphere from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply specifically with the 50 ppmv emission limit under §60.104 (b)(1).

(i) The span value of the monitor shall be set at 50 percent of the maximum hourly potential SO_2 emission concentration of the control device.

(ii) The performance evaluations for this SO_2 monitor under §60.13 (c) shall use Performance Specification 2. Methods 6 or 6C and 3 or 3A shall be used for conducting the relative accuracy evaluations.

(10) An instrument for continuously monitoring and recording concentrations of oxygen (O_2) in the gases at both the inlet and outlet of the sulfur

dioxide control device (or the outlet only if specifically complying with the 50 ppmv standard) from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator has elected to comply with § 60.104(b)(1). The span of this continuous monitoring system shall be set at 10 percent.

(11) The continuous monitoring systems under paragraphs (a)(8), (a)(9), and (a)(10) of this section are operated and data recorded during all periods of operation of the affected facility including periods of startup, shutdown, or malfunction, except for continuous monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments.

(12) The owner or operator shall use the following procedures to evaluate the continuous monitoring systems under paragraphs (a)(8), (a)(9), and (a)(10) of this section.

(i) Method 3 or 3A and Method 6 or 6C for the relative accuracy evaluations under the § 60.13(e) performance evaluation.

(ii) Appendix F, Procedure 1, including quarterly accuracy determinations and daily calibration drift tests.

(13) When seeking to comply with § 60.104(b)(1), when emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using one of the following methods to provide emission data for a minimum of 18 hours per day in at least 22 out of 30 rolling successive calendar days.

(i) The test methods as described in § 60.106(k);

(ii) A spare continuous monitoring system; or

(iii) Other monitoring systems as approved by the Administrator.

(b) [Reserved]

(c) The average coke burn-off rate (Mg (tons) per hour) and hours of operation shall be recorded daily for any fluid catalytic cracking unit catalyst regenerator subject to § 60.102, § 60.103, or § 60.104(b)(2).

(d) For any fluid catalytic cracking unit catalyst regenerator under § 60.102 that uses an incinerator-waste heat boiler to combust the exhaust gases from the catalyst regenerator, the owner or operator shall record daily the rate of combustion of liquid or solid fossil-fuels and the hours of operation during which liquid or solid fossil-fuels are combusted in the incinerator-waste heat boiler.

(e) For the purpose of reports under § 60.7(c), periods of excess emissions that shall be determined and reported are defined as follows:

NOTE: All averages, except for opacity, shall be determined as the arithmetic average of the applicable 1-hour averages, e.g., the rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.

(1) *Opacity.* All 1-hour periods that contain two or more 6-minute periods during which the average opacity as measured by the continuous monitoring system under § 60.105(a)(1) exceeds 30 percent.

(2) *Carbon monoxide.* All 1-hour periods during which the average CO concentration as measured by the CO continuous monitoring system under § 60.105(a)(2) exceeds 500 ppm.

(3) *Sulfur dioxide from fuel gas combustion.* (i) All rolling 3-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(3) exceeds 20 ppm (dry basis, zero percent excess air); or

(ii) All rolling 3-hour periods during which the average concentration of H_2S as measured by the H_2S continuous monitoring system under § 60.105(a)(4) exceeds 230 mg/dscm (0.10 gr/dscf).

(4) *Sulfur dioxide from Claus sulfur recovery plants.* (i) All 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(5) exceeds 250 ppm (dry basis, zero percent excess air); or

(ii) All 12-hour periods during which the average concentration of reduced sulfur (as SO_2) as measured by the reduced sulfur continuous monitoring system under § 60.105(a)(6) exceeds 300 ppm; or

(iii) All 12-hour periods during which the average concentration of SO_2 as measured by the SO_2 continuous monitoring system under § 60.105(a)(7) exceeds 250 ppm (dry basis, zero percent excess air).

[39 FR 9315, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975; 42 FR 32427, June 24, 1977; 42 FR 39389, Aug. 4, 1977; 43 FR 10869, Mar. 15, 1978; 48 FR 23611, May 25, 1983; 50 FR 31701, Aug. 5, 1985; 54 FR 34028, Aug. 17, 1989; 55 FR 40175, Oct. 2, 1990; 65 FR 61754, Oct. 17, 2000]

§ 60.106 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter (PM) standards in § 60.102(a) as follows:

(1) The emission rate (E) of PM shall be computed for each run using the following equation:

$$E = \frac{c_s Q_{sd}}{KR_c}$$

Where:

E = Emission rate of PM, kg/Mg (lb/ton) of coke burn-off.

c_s = Concentration of PM, g/dscm (gr/dscf).

Q_{sd} = Volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

R_c = Coke burn-off rate, Mg/hr (ton/hr) coke.

K=Conversion factor, 1,000 g/kg (7,000 gr/lb).

(2) Method 5B or 5F is to be used to determine particulate matter emissions and associated moisture content from affected facilities without wet FGD systems; only Method 5B is to be used after wet FGD systems. The sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min), except that shorter sampling times may be approved by the Administrator when process variables or other factors preclude sampling for at least 60 minutes.

(3) The coke burn-off rate (R_c) shall be computed for each run using the following equation:

$$R_c=K_1Q_r(\%CO_2+\%CO)-(K_2Q_a-K_3Q_r)((\%CO/2)+(\%CO_2+\%O_2))$$

Where:

R_c = Coke burn-off rate, Mg/hr (ton/hr).

Q_r = Volumetric flow rate of exhaust gas from catalyst regenerator before entering the emission control system, dscm/min (dscf/min).

Q_a = Volumetric flow rate of air to FCCU regenerator, as determined from the fluid catalytic cracking unit control room instrumentation, dscm/min (dscf/min).

$\%CO_2$ = Carbon dioxide concentration, percent by volume (dry basis).

%CO = Carbon monoxide concentration, percent by volume (dry basis).

$\%O_2$ = Oxygen concentration, percent by volume (dry basis).

K_1 = Material balance and conversion factor, 2.982×10^{-4} (Mg-min)/(hr-dscm-%) [9.31×10^{-6} (ton-min)/(hr-dscf-%)].

K_2 = Material balance and conversion factor, 2.088×10^{-3} (Mg-min)/(hr-dscm-%) [6.52×10^{-5} (ton-min)/(hr-dscf-%)].

K_3 = Material balance and conversion factor, 9.94×10^{-5} (Mg-min)/(hr-dscm-%) [3.1×10^{-6} (ton-min)/(hr-dscf-%)].

(i) Method 2 shall be used to determine the volumetric flow rate (Q_r).

(ii) The emission correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine CO_2, CO, and O_2 concentrations.

(4) Method 9 and the procedures of § 60.11 shall be used to determine opacity.

(c) If auxiliary liquid or solid fossil-fuels are burned in an incinerator-waste heat boiler, the owner or operator shall determine the emission rate of PM permitted in § 60.102(b) as follows:

(1) The allowable emission rate (E_s) of PM shall be computed for each run using the following equation:

$$E_s = F + A\left(H/R_c\right)$$

Where:

E_s = Emission rate of PM allowed, kg/Mg (lb/ton) of coke burn-off in catalyst regenerator.

F=Emission standard, 1.0 kg/Mg (2.0 lb/ton) of coke burn-off in catalyst regenerator.

A = Allowable incremental rate of PM emissions, 7.5×10^{-4} kg/million J (0.10 lb/million Btu).
H = Heat input rate from solid or liquid fossil fuel, million J/hr (million Btu/hr).
R_c = Coke burn-off rate, Mg coke/hr (ton coke/hr).

(2) Procedures subject to the approval of the Administrator shall be used to determine the heat input rate.

(3) The procedure in paragraph (b)(3) of this section shall be used to determine the coke burn-off rate (R_c).

(d) The owner or operator shall determine compliance with the CO standard in § 60.103(a) by using the integrated sampling technique of Method 10 to determine the CO concentration (dry basis). The sampling time for each run shall be 60 minutes.

(e)(1) The owner or operator shall determine compliance with the H_2S standard in § 60.104(a)(1) as follows: Method 11, 15, 15A, or 16 shall be used to determine the H_2S concentration. The gases entering the sampling train should be at about atmospheric pressure. If the pressure in the refinery fuel gas lines is relatively high, a flow control valve may be used to reduce the pressure. If the line pressure is high enough to operate the sampling train without a vacuum pump, the pump may be eliminated from the sampling train. The sample shall be drawn from a point near the centroid of the fuel gas line.

(i) For Method 11, the sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf). Two samples of equal sampling times shall be taken at about 1-hour intervals. The arithmetic average of these two samples shall constitute a run. For most fuel gases, sampling times exceeding 20 minutes may result in depletion of the collection solution, although fuel gases containing low concentrations of H_2S may necessitate sampling for longer periods of time.

(ii) For Method 15 or 16, at least three injects over a 1-hour period shall constitute a run.

(iii) For Method 15A, a 1-hour sample shall constitute a run.

(2) Where emissions are monitored by § 60.105(a)(3), compliance with § 60.105(a)(1) shall be determined using Method 6 or 6C and Method 3 or 3A. A 1-hour sample shall constitute a run. Method 6 samples shall be taken at a rate of approximately 2 liters/min. The ppm correction factor (Method 6) and the sampling location in paragraph (f)(1) of this section apply. Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 6 or 6C.

(f) The owner or operator shall determine compliance with the SO_2 and the H_2S and reduced sulfur standards in § 60.104(a)(2) as follows:

(1) Method 6 shall be used to determine the SO_2 concentration. The concentration in mg/dscm obtained by Method 6 or 6C is multiplied by 0.3754 to obtain the concentration in ppm. The sampling point in the duct shall be the centroid of the cross section if the cross-sectional area is less than 5.00 m^2 (53.8 ft^2) or at a point no closer to the walls than 1.00 m (39.4 in.) if the cross-sectional area is 5.00 m^2 or more and the centroid is more than 1 m from the wall. The sampling time and sample volume shall be at least 10 minutes and 0.010 dscm (0.35 dscf) for each sample. Eight samples of equal sampling times shall be taken at about 30-minute intervals. The arithmetic average of these eight samples shall constitute a run. For Method 6C, a run shall consist of the arithmetic average of four 1-hour samples. Method 4 shall be used to determine the moisture content of the gases. The sampling point for Method 4 shall be adjacent to the sampling point for Method 6 or 6C. The sampling time for each sample shall be equal to the time it takes for two Method 6 samples. The moisture content from this sample shall be used to correct the corresponding Method 6 samples for moisture. For documenting the oxidation efficiency of the control device for reduced sulfur compounds, Method 15 shall be used following the procedures of paragraph (f)(2) of this section.

(2) Method 15 shall be used to determine the reduced sulfur and H_2 S concentrations. Each run shall consist of 16 samples taken over a minimum of 3 hours. The sampling point shall be the same as that described for Method 6 in paragraph (f)(1) of this section. To ensure minimum residence time for the sample inside the sample lines, the sampling rate shall be at least 3.0 lpm

(0.10 cfm). The SO_2 equivalent for each run shall be calculated after being corrected for moisture and oxygen as the arithmetic average of the SO_2 equivalent for each sample during the run. Method 4 shall be used to determine the moisture content of the gases as the paragraph (f)(1) of this section. The sampling time for each sample shall be equal to the time it takes for four Method 15 samples.

(3) The oxygen concentration used to correct the emission rate for excess air shall be obtained by the integrated sampling and analysis procedure of Method 3 or 3A. The samples shall be taken simultaneously with the SO_2, reduced sulfur and H_2S, or moisture samples. The SO_2, reduced sulfur, and H_2S samples shall be corrected to zero percent excess air using the equation in paragraph (h)(6) of this section.

(g) Each performance test conducted for the purpose of determining compliance under § 60.104(b) shall consist of all testing performed over a 7-day period using Method 6 or 6C and Method 3 or 3A. To determine compliance, the arithmetic mean of the results of all the tests shall be compared with the applicable standard.

(h) For the purpose of determining compliance with § 60.104(b)(1), the following calculation procedures shall be used:

(1) Calculate each 1-hour average concentration (dry, zero percent oxygen, ppmv) of sulfur dioxide at both the inlet and the outlet to the add-on control device as specified in § 60.13(h). These calculations are made using the emission data collected under § 60.105(a).

(2) Calculate a 7-day average (arithmetic mean) concentration of sulfur dioxide for the inlet and for the outlet to the add-on control device using all of the 1-hour average concentration values obtained during seven successive 24-hour periods.

(3) Calculate the 7-day average percent reduction using the following equation:

$$R_{SO_2} = 100(C_{SO_2}(i) - C_{SO_2}(o))/C_{SO_2}(i)$$

where:

R_{SO_2} = 7-day average sulfur dioxide emission reduction, percent

$C_{SO_2}(i)$ = sulfur dioxide emission concentration determined in § 60.106(h)(2) at the inlet to the add-on control device, ppmv

$C_{SO_2}(o)$ = sulfur dioxide emission concentration determined in § 60.106(h)(2) at the outlet to the add-on control device, ppmv

100 = conversion factor, decimal to percent

(4) Outlet concentrations of sulfur dioxide from the add-on control device for compliance with the 50 ppmv standard, reported on a dry, O_2-free basis, shall be calculated using the procedures outlined in § 60.106(h)(1) and (2) above, but for the outlet monitor only.

(5) If supplemental sampling data are used for determining the 7-day averages under paragraph (h) of this section and such data are not hourly averages, then the value obtained for each supplemental sample shall be assumed to represent the hourly average for each hour over which the sample was obtained.

(6) For the purpose of adjusting pollutant concentrations to zero percent oxygen, the following equation shall be used:

$$C_{adj} = C_{meas}\,[20.9_c/(20.9 - \%O_2)]$$

where:

C_{adj} = pollutant concentration adjusted to zero percent oxygen, ppm or g/dscm

C_{meas} = pollutant concentration measured on a dry basis, ppm or g/dscm

20.9_c = 20.9 percent oxygen − 0.0 percent oxygen (defined oxygen correction basis), percent

20.9 = oxygen concentration in air, percent

$\%O_2$ = oxygen concentration measured on a dry basis, percent

(i) For the purpose of determining compliance with § 60.104(b)(2), the following reference methods and calculation procedures shall be used except as provided in paragraph (i)(12) of this section:

(1) One 3-hour test shall be performed each day.

(2) For gases released to the atmosphere from the fluid catalytic cracking unit catalyst regenerator:

(i) Method 8 as modified in § 60.106(i)(3) for moisture content and for the concentration of sulfur oxides calculated as sulfur dioxide,

(ii) Method 1 for sample and velocity traverses,

(iii) Method 2 calculation procedures (data obtained from Methods 3 and 8) for velocity and volumetric flow rate, and

(iv) Method 3 for gas analysis.

(3) Method 8 shall be modified by the insertion of a heated glass fiber filter between the probe and first impinger. The probe liner and glass fiber filter temperature shall be maintained above 160 °C (320 °F). The isopropanol impinger shall be eliminated. Sample recovery procedures described in Method 8 for container No. 1 shall be eliminated. The heated glass fiber filter also shall be excluded; however, rinsing of all connecting glassware after the heated glass fiber filter shall be retained and included in container No. 2. Sampled volume shall be at least 1 dscm.

(4) For Method 3, the integrated sampling technique shall be used.

(5) Sampling time for each run shall be at least 3 hours.

(6) All testing shall be performed at the same location. Where the gases discharged by the fluid catalytic cracking unit catalyst regenerator pass through an incinerator-waste heat boiler in which auxiliary or supplemental gaseous, liquid, or solid fossil fuel is burned, testing shall be conducted at a point between the regenerator outlet and the incinerator-waste heat boiler. An alternative sampling location after the waste heat boiler may be used if alternative coke burn-off rate equations, and, if requested, auxiliary/supplemental fuel SO_X credits, have been submitted to and approved by the Administrator prior to sampling.

(7) Coke burn-off rate shall be determined using the procedures specified under paragraph (b)(3) of this section, unless paragraph (i)(6) of this section applies.

(8) Calculate the concentration of sulfur oxides as sulfur dioxide using equation 8–3 in Section 6.5 of Method 8 to calculate and report the total concentration of sulfur oxides as sulfur dioxide (C_{so_x}).

(9) Sulfur oxides emission rate calculated as sulfur dioxide shall be determined for each test run by the following equation:

$$E_{so_x} = C_{so_x} Q_{sd}/K$$

Where:

E_{SO_x} = sulfur oxides emission rate calculated as sulfur dioxide, kg/hr (lb/hr)

C_{SO_x} = sulfur oxides emission concentration calculated as sulfur dioxide, g/dscm (gr/dscf)

Q_{sd} = dry volumetric stack gas flow rate corrected to standard conditions, dscm/hr (dscf/hr)

K=1,000 g/kg (7,000 gr/lb)

(10) Sulfur oxides emissions calculated as sulfur dioxide shall be determined for each test run by the following equation:

$$R_{so_x} = \left(E_{so_x}/R_c\right)$$

Where:

R_{SO_x} = Sulfur oxides emissions calculated as kg sulfur dioxide per Mg (lb/ton) coke burn-off.

E_{SO_x} = Sulfur oxides emission rate calculated as sulfur dioxide, kg/hr (lb/hr).

R_c = Coke burn-off rate, Mg/hr (ton/hr).

(11) Calculate the 7-day average sulfur oxides emission rate as sulfur dioxide per Mg (ton) of coke burn-off by dividing the sum of the individual daily rates by the number of daily rates summed.

(12) An owner or operator may, upon approval by the Administrator, use an alternative method for determining compliance with § 60.104(b)(2), as provided in § 60.8(b). Any requests for approval must include data to demonstrate to the Administrator that the alternative method would produce results adequate for the determination of compliance.

(j) For the purpose of determining compliance with § 60.104(b)(3), the following analytical methods and calculation procedures shall be used:

(1) One fresh feed sample shall be collected once per 8-hour period.

(2) Fresh feed samples shall be analyzed separately by using any one of the following applicable analytical test methods: ASTM D129–64, 78, or 95, ASTM D1552–83 or 95, ASTM D2622–87, 94, or 98, or ASTM D1266–87, 91, or 98. (These methods are incorporated by reference: see § 60.17.) The applicable range of some of these ASTM methods is not adequate to measure the levels of sulfur in some fresh feed samples. Dilution of samples prior to analysis with verification of the dilution ratio is acceptable upon prior approval of the Administrator.

(3) If a fresh feed sample cannot be collected at a single location, then the fresh feed sulfur content shall be determined as follows:

(i) Individual samples shall be collected once per 8-hour period for each separate fresh feed stream charged directly into the riser or reactor of the fluid catalytic cracking unit. For each sample location the fresh feed volumetric flow rate at the time of collecting the fresh feed sample shall be measured and recorded. The same method for measuring volumetric flow rate shall be used at all locations.

(ii) Each fresh feed sample shall be analyzed separately using the methods specified under paragraph (j)(2) of this section.

(iii) Fresh feed sulfur content shall be calculated for each 8-hour period using the following equation:

$$S_f = \sum_{i=1}^{n} \frac{S_i Q_i}{Q_f}$$

where:

S_f = fresh feed sulfur content expressed in percent by weight of fresh feed.

n = number of separate fresh feed streams charged directly to the riser or reactor of the fluid catalytic cracking unit.

Q_f = total volumetric flow rate of fresh feed charged to the fluid catalytic cracking unit.

S_i = fresh feed sulfur content expressed in percent by weight of fresh feed for the ‘‘ith’’ sampling location.

Q_i = volumetric flow rate of fresh feed stream for the ‘‘ith’’ sampling location.

(4) Calculate a 7-day average (arithmetic mean) sulfur content of the fresh feed using all of the fresh feed sulfur content values obtained during seven successive 24-hour periods.

(k) The test methods used to supplement continuous monitoring system data to meet the minimum data requirements in § 60.104(d) will be used as described below or as otherwise approved by the Administrator.

(1) Methods 6, 6B, or 8 are used. The sampling location(s) are the same as those specified for the monitor.

(2) For Method 6, the minimum sampling time is 20 minutes and the minimum sampling volume is 0.02 dscm (0.71 dscf) for each sample. Samples are taken at approximately 60-minute intervals. Each sample represents a 1-hour average. A minimum of 18 valid samples is required to obtain one valid day of data.

(3) For Method 6B, collection of a sample representing a minimum of 18 hours is required to obtain one valid day of data.

(4) For Method 8, the procedures as outlined in this section are used. The equivalent of 16 hours of sampling is required to obtain one valid day of data.

[39 FR 9315, Mar. 8, 1974, as amended at 43 FR 10869, Mar. 15, 1978; 51 FR 42842, Nov. 26, 1986; 52 FR 20392, June 1, 1987; 53 FR 41333, Oct. 21, 1988; 54 FR 34028, Aug. 17, 1989; 55 FR 40176, Oct. 2, 1990; 56 FR 4176, Feb. 4, 1991; 65 FR 61754, Oct. 17, 2000]

§ 60.107 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.104(b) shall notify the Administrator of the specific provisions of § 60.104(b) with which the owner or operator seeks to comply. Notification shall be submitted with the notification of initial startup required by § 60.7(a)(3). If an owner or operator elects at a later date to comply with an alternative provision of § 60.104(b), then the Administrator shall be notified by the owner or operator in the report described in paragraph (c) of this section.

(b) Each owner or operator subject to § 60.104(b) shall record and maintain the following information:

(1) If subject to § 60.104(b)(1),

(i) All data and calibrations from continuous monitoring systems located at the inlet and outlet to the control device, including the results of the daily drift tests and quarterly accuracy assessments required under appendix F, Procedure 1;

(ii) Measurements obtained by supplemental sampling (refer to § 60.105(a)(13) and § 60.106(k)) for meeting minimum data requirements; and

(iii) The written procedures for the quality control program required by appendix F, Procedure 1.

(2) If subject to § 60.104(b)(2), measurements obtained in the daily Method 8 testing, or those obtained by alternative measurement methods, if § 60.106(i)(12) applies.

(3) If subject to § 60.104(b)(3), data obtained from the daily feed sulfur tests.

(4) Each 7-day rolling average compliance determination.

(c) Each owner or operator subject to § 60.104(b) shall submit a report except as provided by paragraph (d) of this section. The following information shall be contained in the report:

(1) Any 7-day period during which:

(i) The average percent reduction and average concentration of sulfur dioxide on a dry, O_2-free basis in the gases discharged to the atmosphere from any fluid cracking unit catalyst regenerator for which the owner or operator seeks to comply with § 60.104(b)(1) is below 90 percent and above 50 vppm, as measured by the continuous monitoring system prescribed under § 60.105(a)(8), or above 50 vppm, as measured by the outlet continuous monitoring system prescribed under § 60.105(a)(9). The average percent reduction and average sulfur dioxide concentration shall be determined using the procedures specified under § 60.106(h);

(ii) The average emission rate of sulfur dioxide in the gases discharged to the atmosphere from any fluid catalytic cracking unit catalyst regenerator for which the owner or operator seeks to comply with § 60.104(b)(2) exceeds 9.8 kg SO_X per 1,000 kg coke burn-off, as measured by the daily testing prescribed under § 60.106(i). The average emission rate shall be determined using the procedures specified under § 60.106(i); and

(iii) The average sulfur content of the fresh feed for which the owner or operator seeks to comply with § 60.104(b)(3) exceeds 0.30 percent by weight. The fresh feed sulfur content, a 7-day rolling average, shall be determined using the procedures specified under § 60.106(j).

(2) Any 30-day period in which the minimum data requirements specified in § 60.104(d) are not obtained.

(3) For each 7-day period during which an exceedance has occurred as defined in paragraphs (c)(1)(i) through (c)(1)(iii) and (c)(2) of this section:

(i) The date that the exceedance occurred;

(ii) An explanation of the exceedance;

(iii) Whether the exceedance was concurrent with a startup, shutdown, or malfunction of the fluid catalytic cracking unit or control system; and

(iv) A description of the corrective action taken, if any.

(4) If subject to § 60.104(b)(1),

(i) The dates for which and brief explanations as to why fewer than 18 valid hours of data were obtained for the inlet continuous monitoring system;

(ii) The dates for which and brief explanations as to why fewer than 18 valid hours of data were obtained for the outlet continuous monitoring system;

(iii) Identification of times when hourly averages have been obtained based on manual sampling methods;

(iv) Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system; and

(v) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specifications 2 or 3.

(vi) Results of daily drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(5) If subject to § 60.104(b)(2), for each day in which a Method 8 sample result required by § 60.106(i) was not obtained, the date for which and brief explanation as to why a Method 8 sample result was not obtained, for approval by the Administrator.

(6) If subject to § 60.104(b)(3), for each 8-hour period in which a feed sulfur measurement required by § 60.106(j) was not obtained, the date for which and brief explanation as to why a feed sulfur measurement was not obtained, for approval by the Administrator.

(d) For any periods for which sulfur dioxide or oxides emissions data are not available, the owner or operator of the affected facility shall submit a signed statement indicating if any changes were made in operation of the emission control system during the period of data unavailability which could affect the ability of the system to meet the applicable emission limit. Operations of the control system and affected facility during periods of data unavailability are to be compared with operation of the control system and affected facility before and following the period of data unavailability.

(e) The owner or operator of an affected facility shall submit the reports required under this subpart to the Administrator semiannually for each six-month period. All semiannual reports shall be postmarked by the 30th day following the end of each six-month period.

(f) The owner or operator of the affected facility shall submit a signed statement certifying the accuracy and completeness of the information contained in the report.

[54 FR 34029, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990; 64 FR 7465, Feb. 12, 1999; 65 FR 61755, Oct. 17, 2000]

§ 60.108 Performance test and compliance provisions.

(a) Section 60.8(d) shall apply to the initial performance test specified under paragraph (c) of this section, but not to the daily performance tests required thereafter as specified in § 60.108(d). Section 60.8(f) does not apply when determining compliance with the standards specified under § 60.104(b). Performance tests conducted for the purpose of determining compliance under § 60.104(b) shall be conducted according to the applicable procedures specified under § 60.106.

(b) Owners or operators who seek to comply with § 60.104(b)(3) shall meet that standard at all times, including periods of startup, shutdown, and malfunctions.

(c) The initial performance test shall consist of the initial 7-day average calculated for compliance with § 60.104(b)(1), (b)(2), or (b)(3).

(d) After conducting the initial performance test prescribed under § 60.8, the owner or operator of a fluid catalytic cracking unit catalyst regenerator subject to § 60.104(b) shall conduct a performance test for each successive 24-hour period thereafter. The daily performance tests shall be conducted according to the appropriate procedures specified under § 60.106. In the event that a sample collected under § 60.106(i) or (j) is accidentally lost or conditions occur in which one of the samples must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operators' control, compliance may be determined using available data for the 7-day period.

(e) Each owner or operator subject to § 60.104(b) who has demonstrated compliance with one of the provisions of § 60.104(b) but a later date seeks to comply with another of the provisions of § 60.104(b) shall begin conducting daily performance tests as specified under paragraph (d) of this section immediately upon electing to become subject to one of the other provisions of § 60.104(b). The owner or operator shall furnish the Administrator with a written notification of the change in the semiannual report required by § 60.107(e).

[54 FR 34030, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990; 64 FR 7466, Feb. 12, 1999]

§ 60.109 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which shall not be delegated to States:

(1) Section 60.105(a)(13)(iii),

(2) Section 60.106(i)(12).

[54 FR 34031, Aug. 17, 1989, as amended at 55 FR 40178, Oct. 2, 1990]

Subpart K—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978

§ 60.110 Applicability and designation of affected facility.

(a) Except as provided in § 60.110(b), the affected facility to which this subpart applies is each storage vessel for petroleum liquids which has a storage capacity greater than 151,412 liters (40,000 gallons).

(b) This subpart does not apply to storage vessels for petroleum or condensate stored, processed, and/or treated at a drilling and production facility prior to custody transfer.

(c) Subject to the requirements of this subpart is any facility under paragraph (a) of this section which:

(1) Has a capacity greater than 151, 416 liters (40,000 gallons), but not exceeding 246,052 liters (65,000 gallons), and commences construction or modification after March 8, 1974, and prior to May 19, 1978.

(2) Has a capacity greater than 246,052 liters (65,000 gallons) and commences construction or modification after June 11, 1973, and prior to May 19, 1978.

[42 FR 37937, July 25, 1977, as amended at 45 FR 23379, Apr. 4, 1980]

§ 60.111 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Storage vessel* means any tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(1) Pressure vessels which are designed to operate in excess of 15 pounds per square inch gauge without emissions to the atmosphere except under emergency conditions,

(2) Subsurface caverns or porous rock reservoirs, or

(3) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils as specified in ASTM D396–78, 89, 90, 92, 96, or 98, gas turbine fuel oils Nos. 2–GT through 4–GT as specified in ASTM D2880–78 or 96, or diesel fuel oils Nos. 2–D and 4–D as specified in ASTM D975–78, 96, or 98a. (These three methods are incorporated by reference—see §60.17.)

(c) *Petroleum refinery* means each facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives.

(d) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(e) *Hydrocarbon* means any organic compound consisting predominantly of carbon and hydrogen.

(f) *Condensate* means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature and/or pressure and remains liquid at standard conditions.

(g) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

(h) *Drilling and production facility* means all drilling and servicing equipment, wells, flow lines, separators, equipment, gathering lines, and auxiliary nontransportation-related equipment used in the production of petroleum but does not include natural gasoline plants.

(i) *True vapor pressure* means the equilibrium partial pressure exerted by a petroleum liquid as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from External Floating-Roof Tanks, Second Edition, February 1980 (incorporated by reference—see §60.17).

(j) *Floating roof* means a storage vessel cover consisting of a double deck, pontoon single deck, internal floating cover or covered floating roof, which rests upon and is supported by the petroleum liquid being contained, and is equipped with a closure seal or seals to close the space between the roof edge and tank wall.

(k) *Vapor recovery system* means a vapor gathering system capable of collecting all hydrocarbon vapors and gases discharged from the storage vessel and a vapor disposal system capable of processing such hydrocarbon vapors and gases so as to prevent their emission to the atmosphere.

(l) *Reid vapor pressure* is the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids, except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see § 60.17).

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974, as amended at 39 FR 20794, June 14, 1974; 45 FR 23379, Apr. 4, 1980; 48 FR 3737, Jan. 27, 1983; 52 FR 11429, Apr. 8, 1987; 65 FR 61755, Oct. 17, 2000]

§ 60.112 Standard for volatile organic compounds (VOC).

(a) The owner or operator of any storage vessel to which this subpart applies shall store petroleum liquids as follows:

(1) If the true vapor pressure of the petroleum liquid, as stored, is equal to or greater than 78 mm Hg (1.5 psia) but not greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a floating roof, a vapor recovery system, or their equivalents.

(2) If the true vapor pressure of the petroleum liquid as stored is greater than 570 mm Hg (11.1 psia), the storage vessel shall be equipped with a vapor recovery system or its equivalent.

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974, as amended at 45 FR 23379, Apr. 4, 1980]

§ 60.113 Monitoring of operations.

(a) Except as provided in paragraph (d) of this section, the owner or operator subject to this subpart shall maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

(b) Available data on the typical Reid vapor pressure and the maximum expected storage temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(c) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psia) or whose physical properties preclude determination by the recommended method is to be determined from available data and recorded if the estimated true vapor pressure is greater than 6.9 kPa (1.0 psia).

(d) The following are exempt from the requirements of this section:

(1) Each owner or operator of each affected facility which stores petroleum liquids with a Reid vapor pressure of less than 6.9 kPa (1.0 psia) provided the maximum true vapor pressure does not exceed 6.9 kPa (1.0 psia).

(2) Each owner or operator of each affected facility equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112.

[45 FR 23379, Apr. 4, 1980]

Subpart Ka—Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984

§ 60.110a Applicability and designation of affected facility.

(a) *Affected facility.* Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a storage capacity greater than 151,416 liters (40,000 gallons) that is used to store petroleum liquids for which construction is commenced after May 18, 1978.

(b) Each petroleum liquid storage vessel with a capacity of less than 1,589,873 liters (420,000 gallons) used for petroleum or condensate stored, processed, or treated prior to custody transfer is not an affected facility and, therefore, is exempt from the requirements of this subpart.

(c) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§ 60.112a through 60.114a for storage vessels that are subject to this subpart that store petroleum liquids that, as stored, have a maximum true vapor pressure equal to or greater than 10.3 kPa (1.5 psia). Other provisions applying to owners or operators who choose to comply with

40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (c)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

[45 FR 23379, Apr. 4, 1980, as amended at 65 FR 78275, Dec. 14, 2000]

§ 60.111a Definitions.

In addition to the terms and their definitions listed in the Act and subpart A of this part the following definitions apply in this subpart:

(a) *Storage vessel* means each tank, reservoir, or container used for the storage of petroleum liquids, but does not include:

(1) Pressure vessels which are designed to operate in excess of 204.9 kPa (15 psig) without emissions to the atmosphere except under emergency conditions.

(2) Subsurface caverns or porous rock reservoirs, or

(3) Underground tanks if the total volume of petroleum liquids added to and taken from a tank annually does not exceed twice the volume of the tank.

(b) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery but does not mean Nos. 2 through 6 fuel oils as specified in ASTM D396–78, 89, 90, 92, 96, or 98, gas turbine fuel oils Nos. 2–GT through 4–GT as specified in ASTM D2880–78 or 96, gas turbine fuel oils Nos. 2–GT through 4–GT as specified in ASTM D2880–78 or 96, or diesel fuel oils Nos. 2–D and 4–D as specified in ASTM D975–78, 96, or 98a. (These three methods are incorporated by reference—see § 60.17.)

(c) *Petroleum refinery* means each facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through distillation of petroleum or through redistillation, cracking, extracting, or reforming of unfinished petroleum derivatives.

(d) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(e) *Condensate* means hydrocarbon liquid separated from natural gas which condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

(f) *True vapor pressure* means the equilibrium partial pressure exerted by a petroleum liquid such as determined in accordance with methods described in American Petroleum Institute Bulletin 2517, Evaporation Loss from External Floating-Roof Tanks, Second Edition, February 1980 (incorporated by reference—see § 60.17).

(g) *Reid vapor pressure* is the absolute vapor pressure of volatile crude oil and nonviscous petroleum liquids, except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see § 60.17).

(h) *Liquid-mounted seal* means a foam or liquid-filled primary seal mounted in contact with the liquid between the tank wall and the floating roof continuously around the circumference of the tank.

(i) *Metallic shoe seal* includes but is not limited to a metal sheet held vertically against the tank wall by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(j) *Vapor-mounted seal* means a foam-filled primary seal mounted continuously around the circumference of the tank so there is an annular vapor space underneath the seal. The annular vapor space is bounded by the bottom of the primary seal, the tank wall, the liquid surface, and the floating roof.

(k) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treating in the producing operations, from storage tanks or automatic transfer facilities to pipelines or any other forms of transportation.

[45 FR 23379, Apr. 4, 1980, as amended at 48 FR 3737, Jan. 27, 1983; 52 FR 11429, Apr. 8, 1987; 65 FR 61756, Oct. 17, 2000]

§ 60.112a Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel to which this subpart applies which contains a petroleum liquid which, as stored, has a true vapor pressure equal to or greater than 10.3 kPa (1.5 psia) but not greater than 76.6 kPa (11.1 psia) shall equip the storage vessel with one of the following:

(1) An external floating roof, consisting of a pontoon-type or double-deck-type cover that rests on the surface of the liquid contents and is equipped with a closure device between the tank wall and the roof edge. Except as provided in paragraph (a)(1)(ii)(D) of this section, the closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal and the upper seal is referred to as the secondary seal. The roof is to be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill and when the tank is completely emptied and subsequently refilled. The process of emptying and refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(i) The primary seal is to be either a metallic shoe seal, a liquid-mounted seal, or a vapor-mounted seal. Each seal is to meet the following requirements:

(A) The accumulated area of gaps between the tank wall and the metallic shoe seal or the liquid-mounted seal shall not exceed 212 cm^2 per meter of tank diameter (10.0 in^2 per ft of tank diameter) and the width of any portion of any gap shall not exceed 3.81 cm (1½ in).

(B) The accumulated area of gaps between the tank wall and the vapor-mounted seal shall not exceed 21.2 cm^2 per meter of tank diameter (1.0 in^2 per ft of tank diameter) and the width of any portion of any gap shall not exceed 1.27 cm (½ in).

(C) One end of the metallic shoe is to extend into the stored liquid and the other end is to extend a minimum vertical distance of 61 cm (24 in) above the stored liquid surface.

(D) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (a)(1)(ii)(B) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal used in combination with a metallic shoe or liquid-mounted primary seal shall not exceed 21.2 cm^2 per meter of tank diameter (1.0 in^2 per ft. of tank diameter) and the width of any portion of any gap shall not exceed 1.27 cm (½ in.). There shall be no gaps between the tank wall and the secondary seal used in combination with a vapor-mounted primary seal.

(C) There are to be no holes, tears or other openings in the seal or seal fabric.

(D) The owner or operator is exempted from the requirements for secondary seals and the secondary seal gap criteria when performing gap measurements or inspections of the primary seal.

(iii) Each opening in the roof except for automatic bleeder vents and rim space vents is to provide a projection below the liquid surface. Each opening in the roof except for automatic bleeder vents, rim space vents and leg sleeves is to be equipped with a cover, seal or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use or as described in pargraph (a)(1)(iv) of this section. Automatic bleeder vents are to be closed at all times when the roof is floating, except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting.

(iv) Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(2) A fixed roof with an internal floating type cover equipped with a continuous closure device between the tank wall and the cover edge. The cover is to be floating at all times, (i.e., off the leg supports) except during initial fill and when the tank is completely emptied and subsequently refilled. The process of emptying and refilling when the cover is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible. Each opening in the cover except for automatic bleeder vents and the rim space vents is to provide a projection below the liquid surface. Each opening in the cover except for automatic bleeder vents, rim space vents, stub drains and leg sleeves is to be equipped with a cover, seal, or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the cover is floating except when the cover is being floated off or is being landed on the leg supports. Rim vents are to be set to open only when the cover is being floated off the leg supports or at the manufacturer's recommended setting.

(3) A vapor recovery system which collects all VOC vapors and gases discharged from the storage vessel, and a vapor return or disposal system which is designed to process such VOC vapors and gases so as to reduce their emission to the atmosphere by at least 95 percent by weight.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114a.

(b) The owner or operator of each storage vessel to which this subpart applies which contains a petroleum liquid which, as stored, has a true vapor pressure greater than 76.6 kPa (11.1 psia), shall equip the storage vessel with a vapor recovery system which collects all VOC vapors and gases discharged from the storage vessel, and a vapor return or disposal system which is designed to process such VOC vapors and gases so as to reduce their emission to the atmosphere by at least 95 percent by weight.

[45 FR 23379, Apr. 4, 1980, as amended at 45 FR 83229, Dec. 18, 1980]

§ 60.113a Testing and procedures.

(a) Except as provided in § 60.8(b) compliance with the standard prescribed in § 60.112a shall be determined as follows or in accordance with an equivalent procedure as provided in § 60.114a.

(1) The owner or operator of each storage vessel to which this subpart applies which has an external floating roof shall meet the following requirements:

(i) Determine the gap areas and maximum gap widths between the primary seal and the tank wall and between the secondary seal and the tank wall according to the following frequency:

(A) For primary seals, gap measurements shall be performed within 60 days of the initial fill with petroleum liquid and at least once every five years thereafter. All primary seal inspections or gap measurements which require the removal or dislodging of the secondary seal shall be accomplished as rapidly as possible and the secondary seal shall be replaced as soon as possible.

(B) For secondary seals, gap measurements shall be performed within 60 days of the initial fill with petroleum liquid and at least once every year thereafter.

(C) If any storage vessel is out of service for a period of one year or more, subsequent refilling with petroleum liquid shall be considered initial fill for the purposes of paragraphs (a)(1)(i)(A) and (a)(1)(i)(B) of this section.

(D) Keep records of each gap measurement at the plant for a period of at least 2 years following the date of measurement. Each record shall identify the vessel on which the measurement was performed and shall contain the date of the seal gap measurement, the raw data obtained in the measurement process required by paragraph (a)(1)(ii) of this section and the calculation required by paragraph (a)(1)(iii) of this section.

(E) If either the seal gap calculated in accord with paragraph (a)(1)(iii) of this section or the measured maximum seal gap exceeds the limitations specified by §60.112a of this subpart, a report shall be furnished to the Administrator within 60 days of the date of measurements. The report shall identify the vessel and list each reason why the vessel did not meet the specifications of §60.112a. The report shall also describe the actions necessary to bring the storage vessel into compliance with the specifications of §60.112a.

(ii) Determine gap widths in the primary and secondary seals individually by the following procedures:

(A) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(B) Measure seal gaps around the entire circumference of the tank in each place where a ⅛″ diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the tank wall and measure the circumferential distance of each such location.

(C) The total surface area of each gap described in paragraph (a)(1)(ii)(B) of this section shall be determined by using probes of various widths to accurately measure the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(iii) Add the gap surface area of each gap location for the primary seal and the secondary seal individually. Divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the appropriate ratio in the standard in §60.112a(a)(1)(i) and §60.112a(a)(1)(ii).

(iv) Provide the Administrator 30 days prior notice of the gap measurement to afford the Administrator the opportunity to have an observer present.

(2) The owner or operator of each storage vessel to which this subpart applies which has a vapor recovery and return or disposal system shall provide the following information to the Administrator on or before the date on which construction of the storage vessel commences:

(i) Emission data, if available, for a similar vapor recovery and return or disposal system used on the same type of storage vessel, which can be used to determine the efficiency of the system. A complete description of the emission measurement method used must be included.

(ii) The manufacturer's design specifications and estimated emission reduction capability of the system.

(iii) The operation and maintenance plan for the system.

(iv) Any other information which will be useful to the Administrator in evaluating the effectiveness of the system in reducing VOC emissions.

[45 FR 23379, Apr. 4, 1980, as amended at 52 FR 11429, Apr. 8, 1987]

§60.114a Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in §60.112a, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in §60.112a.

(e) The primary vapor-mounted seal in the ''Volume-Maximizing Seal'' manufactured by R.F.I. Services Corporation is approved as equivalent to the vapor-mounted seal required by § 60.112a(a)(1)(i) and must meet the gap criteria specified in § 60.112a(a)(1)(i)(B). There shall be no gaps between the tank wall and any secondary seal used in conjunction with the primary seal in the ''Volume-Maximizing Seal''.

[52 FR 11429, Apr. 8, 1987]

§ 60.115a Monitoring of operations.

(a) Except as provided in paragraph (d) of this section, the owner or operator subject to this subpart shall maintain a record of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of that liquid during the respective storage period.

(b) Available data on the typical Reid vapor pressure and the maximum expected storage temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517, unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(c) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa (2.0 psia) or whose physical properties preclude determination by the recommended method is to be determined from available data and recorded if the estimated true vapor pressure is greater than 6.9 kPa (1.0 psia).

(d) The following are exempt from the requirements of this section:

(1) Each owner or operator of each storage vessel storing a petroleum liquid with a Reid vapor pressure of less than 6.9 kPa (1.0 psia) provided the maximum true vapor pressure does not exceed 6.9 kPa (1.0 psia).

(2) The owner or operator of each storage vessel equipped with a vapor recovery and return or disposal system in accordance with the requirements of § 60.112a(a)(3) and (b), or a closed vent system and control device meeting the specifications of 40 CFR 65.42(b)(4), (b)(5), or (c).

[45 FR 23379, Apr. 4, 1980, as amended at 65 FR 78275, Dec. 14, 2000]

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

SOURCE: 52 FR 11429, Apr. 8, 1987, unless otherwise noted.

§ 60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraphs (b), (c), and (d) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 40 cubic meters (m^3) that is used to store volatile organic liquids (VOL's) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) Except as specified in paragraphs (a) and (b) of § 60.116b, storage vessels with design capacity less than 75 m^3 are exempt from the General Provisions (part 60, subpart A) and from the provisions of this subpart.

(c) Except as specified in paragraphs (a) and (b) of § 60.116b, vessels either with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kPa or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa are exempt from the General Provisions (part 60, subpart A) and from the provisions of this subpart.

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of §60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa; or

(ii) A storage vessel with a design capacity greater than 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) *Internal floating roof report.* If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) *External floating roof report.* If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 78275, Dec. 14, 2000]

§60.111b Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:

(a) *Bulk gasoline plant* means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

(b) *Condensate* means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

(c) *Custody transfer* means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

(d) *Fill* means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

(e) *Gasoline service station* means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

(f) *Maximum true vapor pressure* means the equilibrium partial pressure exerted by the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see § 60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17);

(4) Any other method approved by the Administrator.

(g) *Reid vapor pressure* means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see § 60.17).

(h) *Petroleum* means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

(i) *Petroleum liquids* means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

(j) *Storage vessel* means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors; or

(2) Subsurface caverns or porous rock reservoirs.

(k) *Volatile organic liquid (VOL)* means any organic liquid which can emit volatile organic compounds into the atmosphere except those VOL's that emit only those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone. These compounds are identified in EPA statements on ozone abatement policy for SIP revisions (42 FR 35314, 44 FR 32042, 45 FR 32424, and 45 FR 48941).

(l) *Waste* means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 61756, Oct. 17, 2000]

§ 60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

(2) An external floating roof. An external floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Each external floating roof must meet the following specifications:

(i) Each external floating roof shall be equipped with a closure device between the wall of the storage vessel and the roof edge. The closure device is to consist of two seals, one above the other. The lower seal is referred to as the primary seal, and the upper seal is referred to as the secondary seal.

(A) The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in § 60.113b(b)(4), the seal shall completely cover the annular space between the edge of the floating roof and tank wall.

(B) The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in § 60.113b(b)(4).

(ii) Except for automatic bleeder vents and rim space vents, each opening in a noncontact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, each opening in the roof is to be equipped with a gasketed cover, seal, or lid that is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Automatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Rim vents are to be set to open when the roof is being floated off the roof legs supports or at the manufacturer's recommended setting. Automatic bleeder vents and rim space vents are to be gasketed. Each emergency roof drain is to be provided with a slotted membrane fabric cover that covers at least 90 percent of the area of the opening.

(iii) The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.

(3) A closed vent system and control device meeting the following specifications:

(i) The closed vent system shall be designed to collect all VOC vapors and gases discharged from the storage vessel and operated with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background and visual inspections, as determined in part 60, subpart VV, § 60.485(b).

(ii) The control device shall be designed and operated to reduce inlet VOC emissions by 95 percent or greater. If a flare is used as the control device, it shall meet the specifications described in the general control device requirements (§ 60.18) of the General Provisions.

(4) A system equivalent to those described in paragraphs (a)(1), (a)(2), or (a)(3) of this section as provided in § 60.114b of this subpart.

(b) The owner or operator of each storage vessel with a design capacity greater than or equal to 75 m^3 which contains a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 76.6 kPa shall equip each storage vessel with one of the following:

(1) A closed vent system and control device as specified in § 60.112b(a)(3).

(2) A system equivalent to that described in paragraph (b)(1) as provided in § 60.114b of this subpart.

(c) *Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia.* This paragraph applies only to the pharmaceutical manufacturing facility, commonly referred to as the Stonewall Plant, located at Route 340 South, in Elkton, Virginia (''site'').

(1) For any storage vessel that otherwise would be subject to the control technology requirements of paragraphs (a) or (b) of this section, the site shall have the option of either complying directly with the requirements of this subpart, or reducing the site-wide total criteria pollutant emissions cap (total emissions cap) in accordance with the procedures set forth in a permit issued pursuant to 40 CFR 52.2454. If the site chooses the option of reducing the total emissions cap in accordance with the procedures set forth in such permit, the requirements of such permit shall apply in lieu of the otherwise applicable requirements of this subpart for such storage vessel.

(2) For any storage vessel at the site not subject to the requirements of 40 CFR 60.112b (a) or (b), the requirements of 40 CFR 60.116b (b) and (c) and the General Provisions (subpart A of this part) shall not apply.

[52 FR 11429, Apr. 8, 1987, as amended at 62 FR 52641, Oct. 8, 1997]

§ 60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of § 60.112b.

(a) After installing the control equipment required to meet § 60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45

days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(b) After installing the control equipment required to meet §60.112b(a)(2) (external floating roof), the owner or operator shall:

(1) Determine the gap areas and maximum gap widths, between the primary seal and the wall of the storage vessel and between the secondary seal and the wall of the storage vessel according to the following frequency.

(i) Measurements of gaps between the tank wall and the primary seal (seal gaps) shall be performed during the hydrostatic testing of the vessel or within 60 days of the initial fill with VOL and at least once every 5 years thereafter.

(ii) Measurements of gaps between the tank wall and the secondary seal shall be performed within 60 days of the initial fill with VOL and at least once per year thereafter.

(iii) If any source ceases to store VOL for a period of 1 year or more, subsequent introduction of VOL into the vessel shall be considered an initial fill for the purposes of paragraphs (b)(1)(i) and (b)(1)(ii) of this section.

(2) Determine gap widths and areas in the primary and secondary seals individually by the following procedures:

(i) Measure seal gaps, if any, at one or more floating roof levels when the roof is floating off the roof leg supports.

(ii) Measure seal gaps around the entire circumference of the tank in each place where a 0.32-cm diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the storage vessel and measure the circumferential distance of each such location.

(iii) The total surface area of each gap described in paragraph (b)(2)(ii) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the tank wall to the seal and multiplying each such width by its respective circumferential distance.

(3) Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in paragraph (b)(4) of this section.

(4) Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in (b)(4) (i) and (ii) of this section:

(i) The accumulated area of gaps between the tank wall and the mechanical shoe or liquid-mounted primary seal shall not exceed 212 Cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 3.81 cm.

(A) One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 cm above the stored liquid surface.

(B) There are to be no holes, tears, or other openings in the shoe, seal fabric, or seal envelope.

(ii) The secondary seal is to meet the following requirements:

(A) The secondary seal is to be installed above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in paragraph (b)(2)(iii) of this section.

(B) The accumulated area of gaps between the tank wall and the secondary seal shall not exceed 21.2 cm^2 per meter of tank diameter, and the width of any portion of any gap shall not exceed 1.27 cm.

(C) There are to be no holes, tears, or other openings in the seal or seal fabric.

(iii) If a failure that is detected during inspections required in paragraph (b)(1) of §60.113b(b) cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(b)(4). Such extension request must include a demonstration of unavailability of alternate storage capacity and a specification of a schedule that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(5) Notify the Administrator 30 days in advance of any gap measurements required by paragraph (b)(1) of this section to afford the Administrator the opportunity to have an observer present.

(6) Visually inspect the external floating roof, the primary seal, secondary seal, and fittings each time the vessel is emptied and degassed.

(i) If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.

(ii) For all the inspections required by paragraph (b)(6) of this section, the owner or operator shall notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel to afford the Administrator the opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph (b)(6) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance of refilling the tank, the owner or operator shall notify the Administrator at least 7 days prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

(c) The owner or operator of each source that is equipped with a closed vent system and control device as required in §60.112b (a)(3) or (b)(2) (other than a flare) is exempt from §60.8 of the General Provisions and shall meet the following requirements.

(1) Submit for approval by the Administrator as an attachment to the notification required by § 60.7(a)(1) or, if the facility is exempt from § 60.7(a)(1), as an attachment to the notification required by § 60.7(a)(2), an operating plan containing the information listed below.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions. This documentation is to include a description of the gas stream which enters the control device, including flow and VOC content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If the control device or the closed vent capture system receives vapors, gases, or liquids other than fuels from sources that are not designated sources under this subpart, the efficiency demonstration is to include consideration of all vapors, gases, and liquids received by the closed vent capture system and control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C is used to meet the 95 percent requirement, documentation that those conditions will exist is sufficient to meet the requirements of this paragraph.

(ii) A description of the parameter or parameters to be monitored to ensure that the control device will be operated in conformance with its design and an explanation of the criteria used for selection of that parameter (or parameters).

(2) Operate the closed vent system and control device and monitor the parameters of the closed vent system and control device in accordance with the operating plan submitted to the Administrator in accordance with paragraph (c)(1) of this section, unless the plan was modified by the Administrator during the review process. In this case, the modified plan applies.

(d) The owner or operator of each source that is equipped with a closed vent system and a flare to meet the requirements in § 60.112b (a)(3) or (b)(2) shall meet the requirements as specified in the general control device requirements, § 60.18 (e) and (f).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

§ 60.114b Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions at least equivalent to the reduction in emissions achieved by any requirement in § 60.112b, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement.

(b) Any notice under paragraph (a) of this section will be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall submit to the Administrator a written application including:

(1) An actual emissions test that uses a full-sized or scale-model storage vessel that accurately collects and measures all VOC emissions from a given control device and that accurately simulates wind and accounts for other emission variables such as temperature and barometric pressure.

(2) An engineering evaluation that the Administrator determines is an accurate method of determining equivalence.

(d) The Administrator may condition the permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emissions reduction as specified in § 60.112b.

§ 60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in § 60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of § 60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with § 60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(1) and § 60.113b(a)(1). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Keep a record of each inspection performed as required by § 60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in § 60.113b(a)(2) are detected during the annual visual inspection required by § 60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by § 60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in § 60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of § 61.112b(a)(1) or § 60.113b(a)(3) and list each repair made.

(b) After installing control equipment in accordance with § 61.112b(a)(2) (external floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of § 60.112b(a)(2) and § 60.113b(b)(2), (b)(3), and (b)(4). This report shall be an attachment to the notification required by § 60.7(a)(3).

(2) Within 60 days of performing the seal gap measurements required by § 60.113b(b)(1), furnish the Administrator with a report that contains:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(3) Keep a record of each gap measurement performed as required by § 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain:

(i) The date of measurement.

(ii) The raw data obtained in the measurement.

(iii) The calculations described in § 60.113b (b)(2) and (b)(3).

(4) After each seal gap measurement that detects gaps exceeding the limitations specified by § 60.113b(b)(4), submit a report to the Administrator within 30 days of the inspection. The report will identify the vessel and contain the information specified in paragraph (b)(2) of this section and the date the vessel was emptied or the repairs made and date of repair.

(c) After installing control equipment in accordance with § 60.112b (a)(3) or (b)(1) (closed vent system and control device other than a flare), the owner or operator shall keep the following records.

(1) A copy of the operating plan.

(2) A record of the measured values of the parameters monitored in accordance with § 60.113b(c)(2).

(d) After installing a closed vent system and flare to comply with § 60.112b, the owner or operator shall meet the following requirements.

(1) A report containing the measurements required by § 60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by § 60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date.

(2) Records shall be kept of all periods of operation during which the flare pilot flame is absent.

(3) Semiannual reports of all periods recorded under § 60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator.

§60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of this subpart other than those required by this paragraph.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

(f) The owner or operator of each vessel storing a waste mixture of indeterminate or variable composition shall be subject to the following requirements.

(1) Prior to the initial filling of the vessel, the highest maximum true vapor pressure for the range of anticipated liquid compositions to be stored will be determined using the methods described in paragraph (e) of this section.

(2) For vessels in which the vapor pressure of the anticipated liquid composition is above the cutoff for monitoring but below the cutoff for controls as defined in §60.112b(a), an initial physical test of the vapor pressure is required; and a physical test at least once every 6 months thereafter is required as determined by the following methods:

(i) ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17); or

(ii) ASTM D323–82 or 94 (incorporated by reference—see §60.17); or

(iii) As measured by an appropriate method as approved by the Administrator.

(g) The owner or operator of each vessel equipped with a closed vent system and control device meeting the specification of § 60.112b or with emissions reductions equipment as specified in 40 CFR 65.42(b)(4), (b)(5), (b)(6), or (c) is exempt from the requirements of paragraphs (c) and (d) of this section.

[52 FR 11429, Apr. 8, 1987, as amended at 65 FR 61756, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.117b Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§ 60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

Subpart L—Standards of Performance for Secondary Lead Smelters

§ 60.120 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in secondary lead smelters: Pot furnaces of more than 250 kg (550 lb) charging capacity, blast (cupola) furnaces, and reverberatory furnaces.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.121 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Reverberatory furnace* includes the following types of reverberatory furnaces: stationary, rotating, rocking, and tilting.

(b) *Secondary lead smelter* means any facility producing lead from a leadbearing scrap material by smelting to the metallic form.

(c) *Lead* means elemental lead or alloys in which the predominant component is lead.

(d) *Blast furnace* means any furnace used to recover metal from slag.

[39 FR 9317, Mar. 8, 1974; 39 FR 13776, Apr. 17, 1974, as amended at 65 FR 61756, Oct. 17, 2000]

§ 60.122 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from a blast (cupola) or reverberatory furnace any gases which:

(1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any pot furnace any gases which exhibit 10 percent opacity or greater.

[39 FR 9317, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.123 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.122 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration during representative periods of furnace operation, including charging and tapping. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(2) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989]

Subpart M—Standards of Performance for Secondary Brass and Bronze Production Plants

§60.130 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in secondary brass or bronze production plants: Reverberatory and electric furnaces of 1,000 kg (2205 lb) or greater production capacity and blast (cupola) furnaces of 250 kg/h (550 lb/h) or greater production capacity. Furnaces from which molten brass or bronze are cast into the shape of finished products, such as foundry furnaces, are not considered to be affected facilities.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977, as amended at 49 FR 43618, Oct. 30, 1984]

§60.131 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Brass or bronze* means any metal alloy containing copper as its predominant constituent, and lesser amounts of zinc, tin, lead, or other metals.

(b) *Reverberatory furnace* includes the following types of reverberatory furnaces: Stationary, rotating, rocking, and tilting.

(c) *Electric furnace* means any furnace which uses electricity to produce over 50 percent of the heat required in the production of refined brass or bronze.

(d) *Blast furnace* means any furnace used to recover metal from slag.

[39 FR 9318, Mar. 8, 1974]

§60.132 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from a reverberatory furnace any gases which:

(1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any blast (cupola) or electric furnace any gases which exhibit 10 percent opacity or greater.

[39 FR 9318, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§60.133 Test methods and procedures.

(a) In conducting performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in §60.132 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration during representative periods of charging and refining, but not during pouring of part of the production cycle. The sampling time and sample volume for each run shall be at least 120 minutes and 1.80 dscm (63.6 dscf).

(2) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6667, Feb. 14, 1989, as amended at 65 FR 61756, Oct. 17, 2000]

Subpart N—Standards of Performance for Primary Emissions from Basic Oxygen Process Furnaces for Which Construction is Commenced After June 11, 1973

§ 60.140 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each basic oxygen process furnace.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.141 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Basic oxygen process furnace (BOPF)* means any furnace with a refractory lining in which molten steel is produced by charging scrap metal, molten iron, and flux materials or alloy additions into a vessel and introducing a high volume of oxygen-rich gas. Open hearth, blast, and reverberatory furnaces are not included in this definition.

(b) *Primary emissions* means particulate matter emissions from the BOPF generated during the steel production cycle and captured by the BOPF primary control system.

(c) *Primary oxygen blow* means the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel or through tuyeres in the bottom or through the bottom and sides of the vessel. This definition does not include any additional or secondary oxygen blows made after the primary blow or the introduction of nitrogen or other inert gas through tuyeres in the bottom or bottom and sides of the vessel.

(d) *Steel production cycle* means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel and includes the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), tapping, and deslagging. This definition applies to an affected facility constructed, modified, or reconstructed after January 20, 1983. For an affected facility constructed, modified, or reconstructed after June 11, 1973, but on or before January 20, 1983, *steel production cycle* means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel and includes the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), and tapping.

[39 FR 9318, Mar. 8, 1974, as amended at 51 FR 160, Jan. 2, 1986]

§ 60.142 Standard for particulate matter.

(a) Except as provided under paragraph (b) of this section, on and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility any gases which:

(1) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(2) Exit from a control device and exhibit 10 percent opacity or greater, except that an opacity of greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(b) For affected facilities constructed, modified, or reconstructed after January 20, 1983, the following limits shall apply:

(1) On or after the date on which the performance test under § 60.8 is required to be completed, no owner or operator of an affected facility for which open hooding is the method for controlling primary emissions shall cause to be discharged to the atmosphere any gases that:

(i) Contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf), as measured for the primary oxygen blow.

(ii) Exit from a control device not used solely for the collection of secondary emissions, as defined in § 60.141a, and exhibit 10 percent opacity or greater, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(2) On or after the date on which the performance test required by § 60.8 is completed, no owner or operator of an affected facility for which closed hooding is the method for controlling primary emissions shall cause to be discharged into the atmosphere any gases that:

(i) Contain particulate matter in excess of 68 mg/dscm (0.030 gr/dscf), as measured for the primary oxygen blow.

(ii) Exit from a control device not used solely for the collection of secondary emissions, as defined in § 60.141a, and exhibit 10 percent opacity or greater, except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(c) On and after the date on which the performance test required by § 60.8 is completed, each owner or operator of an affected facility subject to paragraph (b) of this section shall operate the primary gas cleaning system during any reblow in a manner identical to operation during the primary oxygen blow.

[39 FR 9318, Mar. 8, 1974, as amended at 43 FR 15602, Apr. 13, 1978; 51 FR 161, Jan. 2, 1986]

§ 60.143 Monitoring of operations.

(a) The owner or operator of an affected facility shall maintain a single time-measuring instrument which shall be used in recording daily the time and duration of each steel production cycle, and the time and duration of any diversion of exhaust gases from the main stack servicing the BOPF.

(b) The owner or operator of any affected facility that uses venturi scrubber emission control equipment shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(1) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±250 Pa (±1 inch water).

(2) A monitoring device for the continual measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of the design water supply pressure. The monitoring device's pressure sensor or pressure tap must be located close to the water discharge point. The Administrator must be consulted for approval in advance of selecting alternative locations for the pressure sensor or tap.

(3) All monitoring devices shall be synchronized each day with the time-measuring instrument used under paragraph (a) of this section. The chart recorder error directly after synchronization shall not exceed 0.08 cm (1⁄32 inch).

(4) All monitoring devices shall use chart recorders which are operated at a minimum chart speed of 3.8 cm/hr (1.5 in/hr).

(5) All monitoring devices are to be recalibrated annually, and at other times as the Administrator may require, in accordance with the procedures under § 60.13(b).

(c) Any owner or operator subject to the requirements of paragraph (b) of this section shall report to the Administrator, on a semiannual basis, all measurements over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the mass standards under § 60.142(a)(1), (b)(1)(i) or (b)(2)(i). The accuracy of the respective measurements, not to exceed the values specified in paragraphs (b)(1) and (b)(2) of this section, may be taken into consideration when determining the measurement results that must be reported.

[43 FR 15602, Apr. 13, 1978, as amended at 51 FR 161, Jan. 2, 1986; 54 FR 6667, Feb. 14, 1989]

§ 60.144 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.142 as follows:

(1) The time-measuring instrument of § 60.143 shall be used to document the time and duration of each steel production cycle and each diversion period during each run.

(2) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 1.50 dscm (53 dscf). Sampling shall be discontinued during periods of diversions.

(i) For affected facilities that commenced construction, modification, or reconstruction on or before January 20, 1983, the sampling for each run shall continue for an integral number of steel production cycles. A cycle shall start at the beginning of either the scrap preheat or the oxygen blow and shall terminate immediately before tapping.

(ii) For affected facilities that commenced construction, modification, or reconstruction after January 20, 1983, the sampling for each run shall continue for an integral number of primary oxygen blows.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity. Observations taken during a diversion period shall not be used in determining compliance with the opacity standard. Opacity observations taken at 15-second intervals immediately before and after a diversion of exhaust gases from the stack may be considered to be consecutive for the purpose of computing an average opacity for a 6-minute period.

(c) The owner or operator shall use the monitoring devices of § 60.143(b)(1) and (2) for the duration of the particulate matter runs. The arithmetic average of all measurements taken during these runs shall be used to determine compliance with § 60.143(c).

[54 FR 6667, Feb. 14, 1989, as amended at 65 FR 61756, Oct. 17, 2000]

Subpart Na—Standards of Performance for Secondary Emissions from Basic Oxygen Process Steelmaking Facilities for Which Construction is Commenced After January 20, 1983

SOURCE: 51 FR 161, Jan. 2, 1986, unless otherwise noted.

§ 60.140a Applicability and designation of affected facilities.

(a) The provisions of this subpart apply to the following affected facilities in an iron and steel plant: top-blown BOPF's and hot metal transfer stations and skimming stations used with bottom-blown or top-blown BOPF's.

(b) This subpart applies to any facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after January 20, 1983.

(c) Any BOPF subject to the provisions of this subpart is subject to those provisions of subpart N of this part applicable to affected facilities commencing construction, modification or reconstruction after January 20, 1983.

§ 60.141a Definitions.

All terms in this subpart not defined below are given the same meaning as in the Clean Air Act as amended or in subpart A of this part.

Basic oxygen process furnace (BOPF) means any furnace with a refractory lining in which molten steel is produced by charging scrap metal, molten iron, and flux materials or alloy additions into a vessel and by introducing a high volume of oxygen-rich gas. Open hearth, blast, and reverberatory furnaces are not included in this definition.

Bottom-blown furnace means any BOPF in which oxygen and other combustion gases are introduced to the bath of molten iron through tuyeres in the bottom of the vessel or through tuyeres in the bottom and sides of the vessel.

Fume suppression system means the equipment comprising any system used to inhibit the generation of emissions from steelmaking facilities with an inert gas, flame, or steam blanket applied to the surface of molten iron or steel.

Hot metal transfer station means the facility where molten iron is emptied from the railroad torpedo car or hot metal car to the shop ladle. This includes the transfer of molten iron from the torpedo car or hot metal car to a mixer (or other intermediate vessel) and from a mixer (or other intermediate vessel) to the ladle. This facility is also known as the reladling station or ladle transfer station.

Primary emission control system means the combination of equipment used for the capture and collection of primary emissions (e.g., an open hood capture system used in conjunction with a particulate matter cleaning device such as an electrostatic precipitator or a closed hood capture system used in conjunction with a particulate matter cleaning device such as a scrubber).

Primary emissions means particulate matter emissions from the BOPF generated during the steel production cycle which are captured by, and do not thereafter escape from, the BOPF primary control system.

Primary oxygen blow means the period in the steel production cycle of a BOPF during which a high volume of oxygen-rich gas is introduced to the bath of molten iron by means of a lance inserted from the top of the vessel. This definition does not include any additional, or secondary, oxygen blows made after the primary blow.

Secondary emission control system means the combination of equipment used for the capture and collection of secondary emissions (e.g.,

(1) An open hood system for the capture and collection of primary and secondary emissions from the BOPF, with local hooding ducted to a secondary emission collection device such as a baghouse for the capture and collection of emissions from the hot metal transfer and skimming station; or

(2) An open hood system for the capture and collection of primary and secondary emissions from the furnace, plus a furnace enclosure with local hooding ducted to a secondary emission collection device, such as a baghouse, for additional capture and collection of secondary emissions from the furnace, with local hooding ducted to a secondary emission collection device, such as a baghouse, for the capture and collection of emissions from hot metal transfer and skimming station; or

(3) A furnace enclosure with local hooding ducted to a secondary emission collection device such as a baghouse for the capture and collection of secondary emissions from a BOPF controlled by a closed hood primary emission control system, with local hooding ducted to a secondary emission collection device, such as a baghouse, for the capture and collection of emissions from hot metal transfer and skimming stations).

Secondary emissions means particulate matter emissions that are not captured by the BOPF primary control system, including emissions from hot metal transfer and skimming stations. This definition also includes particulate matter emissions that escape from openings in the primary emission control system, such as from lance hole openings, gaps or tears in the ductwork of the primary emission control system, or leaks in hoods.

Skimming station means the facility where slag is mechanically raked from the top of the bath of molten iron.

Steel production cycle means the operations conducted within the BOPF steelmaking facility that are required to produce each batch of steel, including the following operations: scrap charging, preheating (when used), hot metal charging, primary oxygen blowing, sampling (vessel turndown and turnup), additional oxygen blowing (when used), tapping, and deslagging. Hot metal transfer and skimming operations for the next steel production cycle are also included when the hot metal transfer station or skimming station is an affected facility.

Top-blown furnace means any BOPF in which oxygen is introduced to the bath of molten iron by means of an oxygen lance inserted from the top of the vessel.

§ 60.142a Standards for particulate matter.

(a) Except as provided under paragraphs (b) and (c) of this section, on and after the date on which the performance test under § 60.8 is required to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any secondary emissions that:

(1) Exit from the BOPF shop roof monitor (or other building openings) and exhibit greater than 10 percent opacity during the steel production cycle of any top-blown BOPF or during hot metal transfer or skimming operations for any bottom-blown BOPF; except that an opacity greater than 10 percent but less than 20 percent may occur once per steel production cycle.

(2) Exit from a control device used solely for the collection of secondary emissions from a top-blown BOPF or from hot metal transfer or skimming for a top-blown or a bottom-blown BOPF and contain particulate matter in excess of 23 mg/dscm (0.010 gr/dscf).

(3) Exit from a control device used solely for the collecton of secondary emissions from a top-blown BOPF or from hot metal transfer or skimming for a top-blown or a bottom-blown BOPF and exhibit more than 5 percent opacity.

(b) A fume suppression system used to control secondary emissions from an affected facility is not subject to paragraphs (a)(2) and (a)(3) of this section.

(c) A control device used to collect both primary and secondary emissions from a BOPF is not subject to paragraphs (a)(2) and (a)(3) of this section.

§ 60.143a Monitoring of operations.

(a) Each owner or operator of an affected facility shall install, calibrate, operate, and maintain a monitoring device that continually measures and records for each steel production cycle the various rates or levels of exhaust ventilation at each phase of the cycle through each duct of the secondary emission capture system. The monitoring device or devices are to be placed at locations near each capture point of the secondary emission capture system to monitor the exhaust ventilation rates or levels adequately, or in alternative locations approved in advance by the Administrator.

(b) If a chart recorder is used, the owner or operator shall use chart recorders that are operated at a minimum chart speed of 3.8 cm/hr (1.5 in./hr).

(c) All monitoring devices required by paragraph (a) of this section are to be certified by the manufacturer to be accurate to within ±10 percent compared to Method 2 of appendix A of this part. The owner or operator shall recalibrate and check the device(s) annually and at other times as the Administrator may require, in accordance with the written instructions of the manufacturer and by comparing the device against Method 2.

(d) Each owner or operator subject to the requirements of paragraph (a) of this section shall report on a semiannual basis all measurements of exhaust ventilation rates or levels over any 3-hour period that average more than 10 percent below the average rates or levels of exhaust ventilation maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the standard under § 60.142a(a)(2). The accuracy of the respective measurements, not to exceed the values specified in paragraph (c) of this section, may be considered when determining the measurement results that must be reported.

(e) If a scrubber primary emission control device is used to collect secondary emissions, the owner or operator shall report on a semiannual basis all measurements of exhaust ventilation rate over any 3-hour period that average more than 10 percent below the average levels maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the standard under § 60.142(a)(1).

[51 FR 161, Jan. 2, 1986, as amended at 65 FR 61756, Oct. 17, 2000]

§ 60.144a Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.142a as follows:

(1) Start and end times of each steel production cycle during each run shall be recorded (see § 60.145a (c) and (d) for the definitions of start and end times of a cycle).

(2) Method 5 shall be used to determine the particulate matter concentration. Sampling shall be conducted only during the steel production cycle and for a sufficient number of steel production cycles to obtain a total sample volume of at least 5.67 dscm (200 dscf) for each run.

(3) Method 9 and the procedures of § 60.11 shall be used to determine opacity, except sections 2.4 and 2.5 of Method 9 shall be replaced with the following instructions for recording observations and reducing data:

(i) *Section 2.4.* Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals. During the initial performance test conducted pursuant to § 60.8, observations shall be made and recorded in this manner for a minimum of three steel production cycles. During any subsequent compliance test, observations may be made for any number of steel production cycles, although, where conditions permit, observations will generally be made for a minimum of three steel production cycles.

(ii) *Section 2.5.* Opacity shall be determined as an average of 12 consecutive observations recorded at 15-second intervals. For each steel production cycle, divide the observations recorded into sets of 12 consecutive observations. Sets need not be consecutive in time, and in no case shall two sets overlap. For each set of 12 observations, calculate the average by summing the opacity of 12 consecutive observations and dividing this sum by 12.

(c) In complying with the requirements of § 60.143a(c), the owner or operator shall conduct an initial test as follows:

(1) For devices that monitor and record the exhaust ventilation rate, compare velocity readings recorded by the monitoring device against the velocity readings obtained by Method 2. Take Method 2 readings at a point or points that would properly characterize the monitoring device's performance and that would adequately reflect the various rates of exhaust ventilation. Obtain readings at sufficient intervals to obtain 12 pairs of readings for each duct of the secondary emission capture system. Compare the averages of the two sets to determine whether the monitoring device velocity is within ±10 percent of the Method 2 average.

(2) For devices that monitor the level of exhaust ventilation and record only step changes when a set point rate is reached, compare step changes recorded by the monitoring device against the velocity readings obtained by Method 2. Take Method 2 readings at a point or points that would properly characterize the performance of the monitoring device and that would adequately reflect the various rates of exhaust ventilation. Obtain readings at sufficient intervals to obtain 12 pairs of readings for each duct of the secondary emission capture system. Compare the averages of the two sets to determine whether the monitoring device step change is within ±10 percent of the setpoint rate.

(d) To comply with § 60.143a(d) or (e), the owner or operator shall use the monitoring device of § 60.143a(a) to determine the exhaust ventilation rates or levels during the particulate matter runs. Each owner or operator shall then use these rates or levels to determine the 3-hour averages required by § 60.143a(d) and (e).

[51 FR 161, Jan. 2, 1986, as amended at 54 FR 6667, Feb. 14, 1989; 65 FR 61756, Oct. 17, 2000]

§ 60.145a Compliance provisions.

(a) When determining compliance with mass and visible emission limits specified in § 60.142a(a) (2) and (3), the owner or operator of a BOPF shop that normally operates two furnaces with overlapping cycles may elect to operate only one furnace. If an owner or operator chooses to shut down one furnace, he shall be allowed a reasonable time period to adjust his production schedule before the compliance tests are conducted. The owner or operator of an affected facility may also elect to suspend shop operations not subject to this subpart during compliance testing.

(b) During compliance testing for mass and visible emission standards, if an owner or operator elects to shut down one furnace in a shop that normally operates two furnaces with overlapping cycles, the owner or operator shall operate the secondary emission control system for the furnace being tested at exhaust ventilation rates or levels for each duct of the secondary emission control system that are appropriate for single-furnace operation. Following the compliance test, the owner or operator shall operate the secondary emission control system at exhaust ventilation rates or levels for each duct of the system that are no lower than 90 percent of the exhaust ventilation values established during the most recent compliance test.

(c) For the purpose of determining compliance with visible and mass emission standards, a steel production cycle begins when the scrap or hot metal is charged to the vessel (whichever operation occurs first) and terminates 3 minutes after slag is emptied from the vessel into the slag pot. Consecutive steel production cycles are not required for the purpose of determining compliance. Where a hot metal transfer or skimming station is an affected facility, the steel production cycle also includes the hot metal transfer or skimming operation for the next steel production cycle for the affected vessel. Visible emission observations for both hot metal transfer and skimming operations begin with the start of the operation and terminate 3 minutes after completion of the operation.

(d) For the purpose of determining compliance with visible emission standards specified in § 60.142a(a) (1) and (3), the starting and stopping times of regulated process operations shall be determined and the starting and stopping times of visible emissions data sets shall be determined accordingly.

(e) To determine compliance with § 60.142a(a)(1), select the data sets yielding the highest and second highest 3-minute average opacities for each steel production cycle. Compliance is achieved if the highest 3-minute average for each cycle observed is less than 20 percent and the second highest 3-minute average is 10 percent or less.

(f) To determine compliance with § 60.142(a)(2), determine the concentration of particulate matter in exhaust gases exiting the secondary emission collection device with Method 5. Compliance is achieved if the concentration of particulate matter does not exceed 23 mg/dscm (0.010 gr/dscf).

(g) To determine compliance with § 60.142a(a)(3), construct consecutive 3-minute averages for each steel production cycle. Compliance is achieved if no 3-minute average is more than 5 percent.

[51 FR 161, Jan. 2, 1986, as amended at 65 FR 61756, Oct. 17, 2000]

Subpart O—Standards of Performance for Sewage Treatment Plants

§ 60.150 Applicability and designation of affected facility.

(a) The affected facility is each incinerator that combusts wastes containing more than 10 percent sewage sludge (dry basis) produced by municipal sewage treatment plants, or each incinerator that charges more than 1000 kg (2205 lb) per day municipal sewage sludge (dry basis).

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 11, 1973, is subject to the requirements of this subpart.

[42 FR 58521, Nov. 10, 1977]

§ 60.151 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

[39 FR 9319, Mar. 8, 1974]

§ 60.152 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of any sewage sludge incinerator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere of:

(1) Particulate matter at a rate in excess of 0.65 g/kg dry sludge input (1.30 lb/ton dry sludge input).

(2) Any gases which exhibit 20 percent opacity or greater.

[39 FR 9319, Mar. 8, 1974, as amended at 40 FR 46259, Oct. 6, 1975]

§ 60.153 Monitoring of operations.

(a) The owner or operator of any sludge incinerator subject to the provisions of this subpart shall:

(1) Install, calibrate, maintain, and operate a flow measuring device which can be used to determine either the mass or volume of sludge charged to the incinerator. The flow measuring device shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range. Except as provided in paragraph (d) of this section, the flow measuring device shall be operated continuously and data recorded during all periods of operation of the incinerator.

(2) Provide access to the sludge charged so that a well-mixed representative grab sample of the sludge can be obtained.

(3) Install, calibrate, maintain, and operate a weighing device for determining the mass of any municipal solid waste charged to the incinerator when sewage sludge and municipal solid waste are incinerated together. The weighing device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall comply with the requirements of paragraph (a) of this section and:

(1) For incinerators equipped with a wet scrubbing device, install, calibrate, maintain and operate a monitoring device that continuously measures and records the pressure drop of the gas flow through the wet scrubbing device. Where a combination of wet scrubbers is used in series, the pressure drop of the gas flow through the combined system shall be continuously monitored. The device used to monitor scrubber pressure drop shall be certified by the manufacturer to be accurate within ±250 pascals (±1 inch water gauge) and shall be calibrated on an annual basis in accordance with the manufacturer's instructions.

(2) Install, calibrate, maintain and operate a monitoring device that continuously measures and records the oxygen content of the incinerator exhaust gas. The oxygen monitor shall be located upstream of any rabble shaft cooling air inlet into the incinerator exhaust gas stream, fan, ambient air recirculation damper, or any other source of dilution air. The oxygen monitoring device shall be certified by the manufacturer to have a relative accurancy of ±5 percent over its operating range and shall be calibrated according to method(s) prescribed by the manufacturer at least once each 24-hour operating period.

(3) Install, calibrate, maintain and operate temperature measuring devices at every hearth in multiple hearth furnaces; in the bed and outlet of fluidized bed incinerators; and in the drying, combustion, and cooling zones of electric incinerators. For multiple hearth furnaces, a minimum of one temperature measuring device shall be installed in each hearth in the cooling and drying zones, and a minimum of two temperature measuring devices shall be installed in each hearth in the combustion zone. For electric incinerators, a minimum of one temperature measuring device shall be installed in the drying zone and one in the cooling zone, and a minimum of two temperature measuring devices shall be installed in the combustion zone. Each temperature measuring device shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range. Except as provided in paragraph (d) of this section, the temperature monitoring devices shall be operated continuously and data recorded during all periods of operation of the incinerator.

(4) Install, calibrate, maintain and operate a device for measuring the fuel flow to the incinerator. The flow measuring device shall be certified by the manufacturer to have an accuracy of ±5 percent over its operating range. Except as provided in paragraph (d) of the section, the fuel flow measuring device shall be operated continuously and data recorded during all periods of operation of the incinerator.

(5) Except as provided in paragraph (d) of this section, collect and analyze a grab sample of the sludge fed to the incinerator once per day. The dry sludge content and the volatile solids content of the sample shall be determined in accordance with the method specified under § 60.154(b)(5), except that the determination of volatile solids, step (3)(b) of the method, may not be deleted.

(c) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall retain the following information and make it available for inspection by the Administrator for a minimum of 2 years:

(1) For incinerators equipped with a wet scrubbing device, a record of the measured pressure drop of the gas flow through the wet scrubbing device, as required by paragraph (b)(1) of this section.

(2) A record of the measured oxygen content of the incinerator exhaust gas, as required by paragraph (b)(2) of this section.

(3) A record of the rate of sludge charged to the incinerator, the measured temperatures of the incinerator, the fuel flow to the incinerator, and the total solids and volatile solids content of the sludge charged to the incinerator, as required by paragraphs (a)(1), (b)(3), (b)(4), and (b)(5) of this section.

(d) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart from which the particulate matter emission rate measured during the performance test required under § 60.154(d) is less than or equal to 0.38 g/kg of dry sludge input (0.75 lb/ton) shall be required to comply with the requirements in paragraphs (a), (b), and (c) of this section during all periods of this incinerator following the performance test except that:

(1) Continuous operation of the monitoring devices and data recorders in paragraphs (a)(1), (b)(3), and (b)(4) of this section shall not be required.

(2) Daily sampling and analysis of sludge feed in paragraph (b)(5) of this section shall not be required.

(3) Recordkeeping specified in paragraph (c)(3) of this section shall not be required.

(e) The owner or operator of any sludge incinerator other than a multiple hearth, fluidized bed, or electric incinerator or any sludge incinerator equipped with a control device other than a wet scrubber shall submit to the Administrator for approval a plan for monitoring and recording incinerator and control device operation parameters. The plan shall be submitted to the Administrator:

(1) No later than 90 days after October 6, 1988, for sources which have provided notification of commencement of construction prior to October 6, 1988.

(2) No later than 90 days after the notification of commencement of construction, for sources which provide notification of commencement of construction on or after October 6, 1988.

(3) At least 90 days prior to the date on which the new control device becomes operative, for sources switching to a control device other than a wet scrubber.

[36 FR 24877, Dec. 23, 1971, as amended at 53 FR 39416, Oct. 6, 1988; 65 FR 61756, Oct. 17, 2000]

§ 60.154 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in Appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter emission standards in § 60.152 as follows:

(1) The emission rate (E) of particulate matter for each run shall be computed using the following equation:

$$E = \frac{c_s Q_{sd}}{KS}$$

Where:

E = Emission rate of particulate matter, g/kg (lb/ton) of dry sludge input.

c_s = Concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd} = Volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

S = Charging rate of dry sludge during the run, kg/hr (ton/hr).

K = Conversion factor, 1.0 g/g (7,000 gr/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(3) The dry sludge charging rate (S) for each run shall be computed using either of the following equations:

$$S = S_m R_{dm}/\Theta$$

$$S = S_v R_{dv}/K_v\Theta$$

Where:

S = Charging rate of dry sludge, kg/hr (ton/hr).

S_m = Total mass of sludge charge, kg (ton).

R_{dm} = Average mass of dry sludge per unit mass of sludge charged, kg/kg (ton/ton).

θ = Duration of run, hr.

S_v = Total volume of sludge charged, m^3 (gal).

R_{dv} = Average mass of dry sludge per unit volume of sludge charged, kg/m^3 (lb/gal).

K_v = Conversion factor, 1 g/g (2,000 lb/ton).

(4) the flow measuring device of § 60.153(a)(1) shall be used to determine the total mass (S_m) or volume (S_v) of sludge charged to the incinerator during each run. If the flow measuring device is on a time rate basis, readings shall be taken and recorded at 5-minute intervals during the run and the total charge of sludge shall be computed using the following equations, as applicable:

$$S_m = \sum_{i=1}^{n} Q/_{mi}\theta_i$$

$$S_v = \sum_{i=1}^{n} \frac{Q_{vi}}{\theta_i}$$

Where:

S_m = Total mass of sludge charged to the incinerator during the test run.

S_v = Total volume of sludge charged to the incinerator during the test run.

Q_{mi} = Average mass flow rate calculated by averaging the flow rates at the beginning and end of each interval "i," kg/hr (ton/hr).

Q_{vi} = Average volume flow rate calculated by averaging the flow rates at the beginning and end of each interval "i," m^3/hr (gal/hr).

θ_i = Duration of interval "i," hr.

(5) Samples of the sludge charged to the incinerator shall be collected in nonporous jars at the beginning of each run and at approximately 1-hour intervals thereafter until the test ends, and "209 F. Method for Solid and Semisolid Samples" (incorporated by reference—see § 60.17) shall be used to determine dry sludge content of each sample (total solids residue), except that:

(i) Evaporating dishes shall be ignited to at least 103 °C rather than the 550 °C specified in step 3(a)(1).

(ii) Determination of volatile residue, step 3(b) may be deleted.

(iii) The quantity of dry sludge per unit sludge charged shall be determined in terms of kg/m^3 (lb/gal) or kg/kg (ton/ton).

(iv) The average dry sludge content shall be the arithmetic average of all the samples taken during the run.

(6) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) [Reserved]

(d) The owner or operator of any sludge incinerator subject to the provisions of this subpart shall conduct a performance test during which the monitoring and recording devices required under § 60.153(a)(1), (b)(1), (b)(2), (b)(3), and (b)(4) are installed and operating and for which the sampling and analysis procedures required under § 60.153(b)(5) are performed. The owner or operator shall provide the Administrator at least 30 days prior notice of the performance test to afford the Administrator the opportunity to have an observer present.

(1) For incinerators that commenced construction or modification on or before April 18, 1986, the performance test shall be conducted within 360 days of the effective date of these regulations unless the monitoring and recording devices required under § 60.153(a)(1), (b)(1), (b)(2), (b)(3), and (b)(4) were installed and operating and the sampling and analysis procedures required under § 60.153(b)(5) were performed during the most recent performance test and a record of the measurements taken during the performance test is available.

(2) For incinerators that commence construction or modification after

April 18, 1986, the date of the performance test shall be determined by the requirements in § 60.8.

[54 FR 6668, Feb. 14, 1989, as amended at 54 FR 27015, June 27, 1989; 59 FR 5108, Feb. 3, 1994; 65 FR 61756, Oct. 17, 2000]

§ 60.155 Reporting.

(a) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator subject to the provisions of this subpart shall submit to the Administrator semi-annually a report in writing which contains the following:

(1) A record of average scrubber pressure drop measurements for each period of 15 minutes duration or more during which the pressure drop of the scrubber was less than, by a percentage specified below, the average scrubber pressure drop measured during the most recent performance test. The percent reduction in scrubber pressure drop for which a report is required shall be determined as follows:

(i) For incinerators that achieved an average particulate matter emission rate of 0.38 kg/Mg (0.75 lb/ton) dry sludge input or less during the most recent performance test, a scrubber pressure drop reduction of more than 30 percent from the average scrubber pressure drop recorded during the most recent performance test shall be reported.

(ii) For incinerators that achieved an average particulate matter emission rate of greater than 0.38 kg/Mg (0.75 lb/ton) dry sludge input during the most recent performance test, a percent reduction in pressure drop greater than that calculated according to the following equation shall be reported:

$$P = -111E + 72.15$$

where P=Percent reduction in pressure drop, and
E=Average particulate matter emissions (kg/megagram)

(2) A record of average oxygen content in the incinerator exhaust gas for each period of 1-hour duration or more that the oxygen content of the incinerator exhaust gas exceeds the average oxygen content measured during the most recent performance test by more than 3 percent.

(b) The owner or operator of any multiple hearth, fluidized bed, or electric sludge incinerator from which the average particulate matter emission rate measured during the performance test required under § 60.154(d) exceeds 0.38 g/kg of dry sludge input (0.75 lb/ton of dry sludge input) shall include in the report for each calendar day that a decrease in scrubber pressure drop or increase in oxygen content of exhaust gas is reported a record of the following:

(1) Scrubber pressure drop averaged over each 1-hour incinerator operating period.

(2) Oxygen content in the incinerator exhaust averaged over each 1-hour incinerator operating period.

(3) Temperatures of every hearth in multiple hearth incinerators; of the bed and outlet of fluidized bed incinerators; and of the drying, combustion, and cooling zones of electric incinerators averaged over each 1-hour incinerator operating period.

(4) Rate of sludge charged to the incinerator averaged over each 1-hour incinerator operating period.

(5) Incinerator fuel use averaged over each 8-hour incinerator operating period.

(6) Moisture and volatile solids content of the daily grab sample of sludge charged to the incinerator.

(c) The owner or operator of any sludge incinerator other than a multiple hearth, fluidized bed, or electric incinerator or any sludge incinerator equipped with a control device other than a wet scrubber shall include in the semi-annual report a record of control device operation measurements, as specified in the plan approved under § 60.153(e).

[53 FR 39417, Oct. 6, 1988]

§ 60.156 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 60.153(e).

[53 FR 39418, Oct. 6, 1988]

Subpart P—Standards of Performance for Primary Copper Smelters

SOURCE: 41 FR 2338, Jan. 15, 1976, unless otherwise noted.

§ 60.160 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in primary copper smelters: Dryer, roaster, smelting furnace, and copper converter.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 16, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§ 60.161 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Primary copper smelter* means any installation or any intermediate process engaged in the production of copper from copper sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) *Dryer* means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a portion of the moisture from the charge, provided less than 5 percent of the sulfur contained in the charge is eliminated in the facility.

(c) *Roaster* means any facility in which a copper sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (5 percent or more) of the sulfur contained in the charge.

(d) *Calcine* means the solid materials produced by a roaster.

(e) *Smelting* means processing techniques for the melting of a copper sulfide ore concentrate or calcine charge leading to the formation of separate layers of molten slag, molten copper, and/or copper matte.

(f) *Smelting furnace* means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided by an electric current, rapid oxidation of a portion of the sulfur contained in the concentrate as it passes through an oxidizing atmosphere, or the combustion of a fossil fuel.

(g) *Copper converter* means any vessel to which copper matte is charged and oxidized to copper.

(h) *Sulfuric acid plant* means any facility producing sulfuric acid by the contact process.

(i) *Fossil fuel* means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such materials for the purpose of creating useful heat.

(j) *Reverberatory smelting furnace* means any vessel in which the smelting of copper sulfide ore concentrates or calcines is performed and in which the heat necessary for smelting is provided primarily by combustion of a fossil fuel.

(k) *Total smelter charge* means the weight (dry basis) of all copper sulfide ore concentrates processed at a primary copper smelter, plus the weight of all other solid materials introduced into the roasters and smelting furnaces at a primary copper smelter, except calcine, over a one-month period.

(l) *High level of volatile impurities* means a total smelter charge containing more than 0.2 weight percent arsenic, 0.1 weight percent antimony, 4.5 weight percent lead or 5.5 weight percent zinc, on a dry basis.

§ 60.162 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any dryer any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

§ 60.163 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any roaster, smelting furnace, or copper converter any gases which contain sulfur dioxide in excess of 0.065 percent by volume, except as provided in paragraphs (b) and (c) of this section.

(b) Reverberatory smelting furnaces shall be exempted from paragraph (a) of this section during periods when the total smelter charge at the primary copper smelter contains a high level of volatile impurities.

(c) A change in the fuel combusted in a reverberatory smelting furnace shall not be considered a modification under this part.

§ 60.164 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any dryer any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in § 60.163, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.165 Monitoring of operations.

(a) The owner or operator of any primary copper smelter subject to § 60.163 (b) shall keep a monthly record of the total smelter charge and the weight percent (dry basis) of arsenic, antimony, lead and zinc contained in this charge. The analytical methods and procedures employed to determine the weight of the total smelter charge and the weight percent of arsenic, antimony, lead and zinc shall be approved by the Administrator and shall be accurate to within plus or minus ten percent.

(b) The owner or operator of any primary copper smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any dryer. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster, smelting furnace or copper converter subject to § 60.163 (a). The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c) the reference method referred to under the Relative Accuracy Test Procedure in Performance Specification 2 of appendix B to this part shall be Method 6. For the performance evaluation, each concentration measurement shall be of one hour duration. The pollutant gas used to prepare the calibration gas mixtures required under Performance Specification 2 of appendix B, and for calibration checks under § 60.13 (d), shall be sulfur dioxide.

(c) Six-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the four consecutive 6-hour periods of each operating day. Each six-hour average shall be determined as the arithmetic mean of the appropriate six contiguous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (b) of this section.

(d) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) *Opacity.* Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (b) of this section, exceeds the standard under § 60.164(a).

(2) *Sulfur dioxide.* All six-hour periods during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (b) of this section, exceed the level of the standard. The Administrator will not consider emissions in excess of the level of the standard

for less than or equal to 1.5 percent of the six-hour periods during the quarter as indicative of a potential violation of §60.11(d) provided the affected facility, including air pollution control equipment, is maintained and operated in a manner consistent with good air pollution control practice for minimizing emissions during these periods. Emissions in excess of the level of the standard during periods of startup, shutdown, and malfunction are not to be included within the 1.5 percent.

[41 FR 2338, Jan. 15, 1976; 41 FR 8346, Feb. 26, 1976, as amended at 42 FR 57126, Nov. 1, 1977; 48 FR 23611, May 25, 1983; 54 FR 6668, Feb. 14, 1989; 65 FR 61756, Oct. 17, 2000]

§60.166 Test methods and procedures.

(a) In conducting performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2) and visible emission standards in §§60.162, 60.163, and 60.164 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of §60.165(b)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each run shall be 6 hours, and the average SO_2 concentration shall be computed for the 6-hour period as in §60.165(c). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6668, Feb. 14, 1989]

Subpart Q—Standards of Performance for Primary Zinc Smelters

SOURCE: 41 FR 2340, Jan. 15, 1976, unless otherwise noted.

§60.170 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in primary zinc smelters: roaster and sintering machine.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 16, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§60.171 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Primary zinc smelter* means any installation engaged in the production, or any intermediate process in the production, of zinc or zinc oxide from zinc sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) *Roaster* means any facility in which a zinc sulfide ore concentrate charge is heated in the presence of air to eliminate a significant portion (more than 10 percent) of the sulfur contained in the charge.

(c) *Sintering machine* means any furnace in which calcines are heated in the presence of air to agglomerate the calcines into a hard porous mass called *sinter*.

(d) *Sulfuric acid plant* means any facility producing sulfuric acid by the contact process.

§60.172 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

§60.173 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any roaster any gases which contain sulfur dioxide in excess of 0.065 percent by volume.

(b) Any sintering machine which eliminates more than 10 percent of the sulfur initially contained in the zinc sulfide ore concentrates will be considered as a roaster under paragraph (a) of this section.

§ 60.174 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in § 60.173, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.175 Monitoring of operations.

(a) The owner or operator of any primary zinc smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any sintering machine. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any roaster subject to § 60.173. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c), the reference method referred to under the Relative Accuracy Test Procedure in Performance Specification 2 of appendix B to this part shall be Method 6. For the performance evaluation, each concentration measurement shall be of 1 hour duration. The pollutant gas used to prepare the calibration gas mixtures required under Performance Specification 2 of appendix B, and for calibration checks under § 60.13(d), shall be sulfur dioxide.

(b) Two-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the 12 consecutive 2-hour periods of each operating day. Each 2-hour average shall be determined as the arithmetic mean of the appropriate two contiguous 1-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (a) of this section.

(c) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) Opacity. Any 6-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.174(a).

(2) Sulfur dioxide. Any 2-hour period, as described in paragraph (b) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.173.

[41 FR 2340, Jan. 15, 1976, as amended at 48 FR 23611, May 25, 1983; 54 FR 6668, Feb. 14, 1989]

§ 60.176 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2), and visible emission standards in §§ 60.172, 60.173, and 60.174 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of §60.175(a)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each run shall be 2 hours, and the average SO_2 concentration for the 2-hour period shall be computed as in §60.175(b). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6669, Feb. 14, 1989]

Subpart R—Standards of Performance for Primary Lead Smelters

SOURCE: 41 FR 2340, Jan. 15, 1976, unless otherwise noted.

§60.180 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in primary lead smelters: sintering machine, sintering machine discharge end, blast furnace, dross reverberatory furnace, electric smelting furnace, and converter.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 16, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977]

§60.181 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Primary lead smelter* means any installation or any intermediate process engaged in the production of lead from lead sulfide ore concentrates through the use of pyrometallurgical techniques.

(b) *Sintering machine* means any furnace in which a lead sulfide ore concentrate charge is heated in the presence of air to eliminate sulfur contained in the charge and to agglomerate the charge into a hard porous mass called *sinter*.

(c) *Sinter bed* means the lead sulfide ore concentrate charge within a sintering machine.

(d) *Sintering machine discharge end* means any apparatus which receives sinter as it is discharged from the conveying grate of a sintering machine.

(e) *Blast furnace* means any reduction furnace to which sinter is charged and which forms separate layers of molten slag and lead bullion.

(f) *Dross reverberatory furnace* means any furnace used for the removal or refining of impurities from lead bullion.

(g) *Electric smelting furnace* means any furnace in which the heat necessary for smelting of the lead sulfide ore concentrate charge is generated by passing an electric current through a portion of the molten mass in the furnace.

(h) *Converter* means any vessel to which lead concentrate or bullion is charged and refined.

(i) *Sulfuric acid plant* means any facility producing sulfuric acid by the contact process.

§60.182 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any gases which contain particulate matter in excess of 50 mg/dscm (0.022 gr/dscf).

(b) [Reserved]

§60.183 Standard for sulfur dioxide.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any sintering machine, electric smelting furnace, or converter gases which contain sulfur dioxide in excess of 0.065 percent by volume.

(b) [Reserved]

§ 60.184 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end any visible emissions which exhibit greater than 20 percent opacity.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility that uses a sulfuric acid plant to comply with the standard set forth in § 60.183, any visible emissions which exhibit greater than 20 percent opacity.

§ 60.185 Monitoring of operations.

(a) The owner or operator of any primary lead smelter subject to the provisions of this subpart shall install and operate:

(1) A continuous monitoring system to monitor and record the opacity of gases discharged into the atmosphere from any blast furnace, dross reverberatory furnace, or sintering machine discharge end. The span of this system shall be set at 80 to 100 percent opacity.

(2) A continuous monitoring system to monitor and record sulfur dioxide emissions discharged into the atmosphere from any sintering machine, electric furnace or converter subject to § 60.183. The span of this system shall be set at a sulfur dioxide concentration of 0.20 percent by volume.

(i) The continuous monitoring system performance evaluation required under § 60.13(c) shall be completed prior to the initial performance test required under § 60.8.

(ii) For the purpose of the continuous monitoring system performance evaluation required under § 60.13(c), the reference method referred to under the Relative Accuracy Test Procedure in Performance Specification 2 of appendix B to this part shall be Method 6. For the performance evaluation, each concentration measurement shall be of one hour duration. The pollutant gases used to prepare the calibration gas mixtures required under Performance Specification 2 of appendix B, and for calibration checks under § 60.13(d), shall be sulfur dioxide.

(b) Two-hour average sulfur dioxide concentrations shall be calculated and recorded daily for the twelve consecutive two-hour periods of each operating day. Each two-hour average shall be determined as the arithmetic mean of the appropriate two contiguous one-hour average sulfur dioxide concentrations provided by the continuous monitoring system installed under paragraph (a) of this section.

(c) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) Opacity. Any six-minute period during which the average opacity, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.184(a).

(2) Sulfur dioxide. Any two-hour period, as described in paragraph (b) of this section, during which the average emissions of sulfur dioxide, as measured by the continuous monitoring system installed under paragraph (a) of this section, exceeds the standard under § 60.183.

[41 FR 2340, Jan. 15, 1976, as amended at 48 FR 23611, May 25, 1983; 54 FR 6668, Feb. 14, 1989]

§ 60.186 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter, sulfur dioxide (SO_2), and visible emission standards in §§ 60.182, 60.183, and 60.184 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) The continuous monitoring system of § 60.185(a)(2) shall be used to determine the SO_2 concentrations on a dry basis. The sampling time for each

run shall be 2 hours, and the average SO_2 concentration for the 2-hour period shall be computed as in § 60.185(b). The monitoring system drift during the run may not exceed 2 percent of the span value.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6669, Feb. 14, 1989]

Subpart S—Standards of Performance for Primary Aluminum Reduction Plants

SOURCE: 45 FR 44207, June 30, 1980, unless otherwise noted.

§ 60.190 Applicability and designation of affected facility.

(a) The affected facilities in primary aluminum reduction plants to which this subpart applies are potroom groups and anode bake plants.

(b) Except as provided in paragraph (c) of this section, any affected facility under paragraph (a) of this section that commences construction or modification after October 23, 1974, is subject to the requirements of this subpart.

(c) An owner or operator of an affected facility under paragraph (a) of this section may elect to comply with the requirements of this subpart or the requirements of subpart LL of part 63 of this chapter.

[42 FR 37937, July 25, 1977, as amended at 45 FR 44206, June 30, 1980; 62 FR 52399, Oct. 7, 1997]

§ 60.191 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Aluminum equivalent means an amount of aluminum which can be produced from a Mg of anodes produced by an anode bake plant as determined by § 60.195(g).

Anode bake plant means a facility which produces carbon anodes for use in a primary aluminum reduction plant.

Potroom means a building unit which houses a group of electrolytic cells in which aluminum is produced.

Potroom group means an uncontrolled potroom, a potroom which is controlled individually, or a group of potrooms or potroom segments ducted to a common control system.

Primary aluminum reduction plant means any facility manufacturing aluminum by electrolytic reduction.

Primary control system means an air pollution control system designed to remove gaseous and particulate flourides from exhaust gases which are captured at the cell.

Roof monitor means that portion of the roof of a potroom where gases not captured at the cell exit from the potroom.

Total fluorides means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.195 or by equivalent or alternative methods (see § 60.8(b)).

§ 60.192 Standard for fluorides.

(a) On and after the date on which the initial performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases containing total fluorides, as measured according to § 60.195, in excess of:

(1) 1.0 kg/Mg (2.0 lb/ton) of aluminum produced for potroom groups at Soderberg plants: except that emissions between 1.0 kg/Mg and 1.3 kg/Mg (2.6 lb/ton) will be considered in compliance if the owner or operator demonstrates that exemplary operation and maintenance procedures were used with respect to the emission control system and that proper control equipment was operating at the affected facility during the performance tests;

(2) 0.95 kg/Mg (1.9 lb/ton) of aluminum produced for potroom groups at prebake plants; except that emissions between 0.95 kg/Mg and 1.25 kg/Mg (2.5 lb/ton) will be considered in compliance if the owner or operator demonstrates that exemplary operation and maintenance procedures were used with respect to the emission control system and that proper control equipment was operating at the affected facility during the performance test; and

(3) 0.05 kg/Mg (0.1 lb/ton) of aluminum equivalent for anode bake plants.

(b) Within 30 days of any performance test which reveals emissions which fall between the 1.0 kg/Mg and 1.3 kg/Mg levels in paragraph (a)(1) of this section or between the 0.95 kg/Mg and 1.25 kg/Mg levels in paragraph (a)(2) of this section, the owner or operator shall submit a report indicating whether all necessary control devices were on-line and operating properly during the performance test, describing the operating and maintenance procedures followed, and setting forth any explanation for the excess emissions, to the Director of the Enforcement Division of the appropriate EPA Regional Office.

[45 FR 44207, June 30, 1980, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.193 Standard for visible emissions.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any potroom group any gases which exhibit 10 percent opacity or greater, or

(2) From any anode bake plant any gases which exhibit 20 percent opacity or greater.

§ 60.194 Monitoring of operations.

(a) The owner or operator of any affected facility subject to the provisions of this subpart shall install, calibrate, maintain, and operate monitoring devices which can be used to determine daily the weight of aluminum and anode produced. The weighing devices shall have an accuracy of ± 5 percent over their operating range.

(b) The owner or operator of any affected facility shall maintain a record of daily production rates of aluminum and anodes, raw material feed rates, and cell or potline voltages.

(c) Following the initial performance test as required under § 60.8(a), an owner or operator shall conduct a performance test at least once each month during the life of the affected facility, except when malfunctions prevent representative sampling, as provided under § 60.8(c). The owner or operator shall give the Administrator at least 15 days advance notice of each test. The Administrator may require additional testing under section 114 of the Clean Air Act.

(d) An owner or operator may petition the Administrator to establish an alternative testing requirement that requires testing less frequently than once each month for a primary control system or an anode bake plant. If the owner or operator show that emissions from the primary control system or the anode bake plant have low variability during day-to-day operations, the Administrator may establish such an alternative testing requirement. The alternative testing requirement shall include a testing schedule and, in the case of a primary control system, the method to be used to determine primary control system emissions for the purpose of performance tests. The Administrator shall publish the alternative testing requirement in the FEDERAL REGISTER.

(1) Alternative testing requirements are established for Anaconda Aluminum Company's Sebree plant in Henderson, Kentucky: The anode bake plant and primary control system are to be tested once a year rather than once a month.

(2) Alternative testing requirements are established for Alumax of South Carolina's Mt. Holly Plant in Mt. Holly, South Carolina: The anode bake plant and primary control system are to be tested once a year rather than once a month.

[45 FR 44207, June 30, 1980, as amended at 54 FR 6669, Feb. 14, 1989]

§ 60.195 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides and visible emission standards in §§ 60.192 and 60.193 as follows:

(1) The emission rate (E_p) of total fluorides from potroom groups shall be computed for each run using the following equation:

$$E_p=[(C_s\ Q_{sd})_1+(C_s\ Q_{sd})_2]/(P\ K)$$

where:

E_p=emission rate of total fluorides from a potroom group, kg/Mg (lb/ton).
C_s=concentration of total fluorides, mg/dscm (gr/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P=aluminum production rate, Mg/hr (ton/hr).
K=conversion factor, 10^6 mg/kg (7,000 gr/lb).
1=subscript for primary control system effluent gas.
2=subscript for secondary control system or roof monitor effluent gas.

(2) The emission rate (E_b) of total fluorides from anode bake plants shall be computed for each run using the following equation:

$$E_b=(C_s\ Q_{sd})/(P_eK)$$

where:
E_b=emission rate of total fluorides, kg/Mg (lb/ton) of aluminum equivalent.
C_s=concentration of total fluorides, mg/dscm (gr/dscf).
Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).
P_e=aluminum equivalent for anode production rate, Mg/hr (ton/hr).
K=conversion factor, 10^6 mg/kg (7,000 gr/lb).

(3) Methods 13A or 13B shall be used for ducts or stacks, and Method 14 for roof monitors not employing stacks or pollutant collection systems, to determine the total fluorides concentration (C_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 8 hours and 6.80 dscm (240 dscf) for potroom groups and at least 4 hours and 3.40 dscm (120 dscf) for anode bake plants.

(4) The monitoring devices of §60.194(a) shall be used to determine the daily weight of aluminum and anode produced.

(i) The aluminum production rate (P) shall be determined by dividing 720 hours into the weight of aluminum tapped from the affected facility during a period of 30 days before and including the final run of a performance test.

(ii) The aluminum equivalent production rate (P_e) for anodes shall be determined as 2 times the average weight of anode produced during a representative oven cycle divided by the cycle time. An owner or operator may establish a multiplication factor other than 2 by submitting production records of the amount of aluminum produced and the concurrent weight of anodes consumed by the potrooms.

(5) Method 9 and the procedures in §60.11 shall be used to determine opacity.

[54 FR 6669, Feb. 14, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart T—Standards of Performance for the Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants

§60.200 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each wet-process phosphoric acid plant having a design capacity of more than 15 tons of equivalent P_2O_5 feed per calendar day. For the purpose of this subpart, the affected facility includes any combination of: reactors, filters, evaporators, and hot wells.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977, as amended at 48 FR 7129, Feb. 17, 1983]

§60.201 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Wet-process phosphoric acid plant* means any facility manufacturing phosphoric acid by reacting phosphate rock and acid.

(b) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in §60.204, or equivalent or alternative methods.

(c) *Equivalent* P_2O_5 *feed* means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

[40 FR 33154, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§60.202 Standard for fluorides.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 10.0 g/Mg of equivalent P_2O_5 feed (0.020 lb/ton).

[40 FR 33154, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.203 Monitoring of operations.

(a) The owner or operator of any wet-process phosphoric acid plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any wet-process phosphoric acid plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in Mg/hr of phosphorus bearing feed using a monitoring device for measuring mass flowrate which meets the requirements of paragraph (a) of this section and then by proceeding according to § 60.204(b)(3).

(c) The owner or operator of any wet-process phosphoric acid subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

[40 FR 3154, Aug. 6, 1975, as amended at 54 FR 6669, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§ 60.204 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in § 60.202 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} \, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/Mg (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point ''i,'' mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point ''i,'' dscm/hr (dscf/hr).

N=number of emission points associated with the affected facility.

P=equivalent P_2O_5 feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$$P = M_p \, R_p$$

where:

M_p=total mass flow rate of phosphorus-bearing feed, Mg/hr (ton/hr).

R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.203(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

[54 FR 6669, Feb. 14, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart U—Standards of Performance for the Phosphate Fertilizer Industry: Superphosphoric Acid Plants

§ 60.210 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each superphosphoric acid plant having a design capacity of more than 15 tons of equivalent P_2O_5 feed per calendar day. For the purpose of this subpart, the affected facility includes any combination of: evaporators, hot wells, acid sumps, and cooling tanks.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37937, July 25, 1977, as amended at 48 FR 7129, Feb. 17, 1983]

§60.211 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Superphosphoric acid plant* means any facility which concentrates wet-process phosphoric acid to 66 percent or greater P_2O_5 content by weight for eventual consumption as a fertilizer.

(b) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in §60.214, or equivalent or alternative methods.

(c) *Equivalent P_2O_5 feed* means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

[40 FR 33155, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§60.212 Standard for fluorides.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 5.0 g/megagram (Mg) of equivalent P_2O_5 feed (0.010 lb/ton).

[40 FR 33155, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§60.213 Monitoring of operations.

(a) The owner or operator of any superphosphoric acid plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any superphosphoric acid plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in Mg/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this section and then by proceeding according to §60.214(b)(3).

(c) The owner or operator of any superphosphoric acid plant subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

[40 FR 33155, Aug. 6, 1975, as amended at 54 FR 6670, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§60.214 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in §60.212 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si}\, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/Mg (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point "i," mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).

N=number of emission points associated with the affected facility.

P=equivalent P_2O_5 feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$P = M_p R_p$

where:

M_p=total mass flow rate of phosphorus-bearing feed, Mg/hr (ton/hr).

R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.213(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

[54 FR 6670, Feb. 14, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart V—Standards of Performance for the Phosphate Fertilizer Industry: Diammonium Phosphate Plants

§ 60.220 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each granular diammonium phosphate plant having a design capacity of more than 15 tons of equivalent P_2O_5 feed per calendar day. For the purpose of this subpart, the affected facility includes any combination of: reactors, granulators, dryers, coolers, screens, and mills.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977, as amended at 48 FR 7129, Feb. 17, 1983]

§ 60.221 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Granular diammonium phosphate plant* means any plant manufacturing granular diammonium phosphate by reacting phosphoric acid with ammonia.

(b) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.224, or equivalent or alternative methods.

(c) *Equivalent P_2O_5 feed* means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

[40 FR 33155, Aug. 6, 1975]

§ 60.222 Standard for fluorides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 30 g/megagram (Mg) of equivalent P_2O_5 feed (0.060 lb/ton).

[40 FR 33155, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.223 Monitoring of operations.

(a) The owner or operator of any granular diammonium phosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

(b) The owner or operator of any granular diammonium phosphate plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in Mg/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this section and then by proceeding according to § 60.224(b)(3).

(c) The owner or operator of any granular diammonium phosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

[40 FR 33155, Aug. 6, 1975, as amended at 54 FR 6670, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§ 60.224 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standard in § 60.222 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si}\, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/Mg (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point "i," mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).

N=number of emission points associated with the affected facility.

P=equivalent P_2O_5 feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$P=M_p R_p$

where:

M_p=total mass flow rate of phosphorus-bearing feed, Mg/hr (ton/hr).

R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.223(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

[54 FR 6670, Feb. 14, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart W—Standards of Performance for the Phosphate Fertilizer Industry: Triple Superphosphate Plants

§ 60.230 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each triple superphosphate plant having a design capacity of more than 15 tons of equivalent P_2O_5 feed per calendar day. For the purpose of this subpart, the affected facility includes any combination of: mixers, curing belts (dens), reactors, granulators, dryers, cookers, screens, mills, and facilities which store run-of-pile triple superphosphate.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977, as amended at 48 FR 7129, Feb. 17, 1983]

§ 60.231 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Triple superphosphate plant* means any facility manufacturing triple superphosphate by reacting phosphate rock with phosphoric acid. A run-of-pile triple superphosphate plant includes curing and storing.

(b) *Run-of-pile triple superphosphate* means any triple superphosphate that has not been processed in a granulator and is composed of particles at least 25 percent by weight of which (when not caked) will pass through a 16 mesh screen.

(c) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.234, or equivalent or alternative methods.

(d) *Equivalent P_2O_5 feed* means the quantity of phosphorus, expressed as phosphorus pentoxide, fed to the process.

[40 FR 33156, Aug. 6, 1975]

§ 60.232 Standard for fluorides.

On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 100 g/megagram (Mg) of equivalent P_2O_5 feed (0.20 lb/ton).

[40 FR 33156, Aug. 6, 1975, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.233 Monitoring of operations.

The owner or operator of any triple superphosphate plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a flow monitoring device which can be used to determine the mass flow of phosphorus-bearing feed material to the process. The flow monitoring device shall have an accuracy of ±5 percent over its operating range.

The owner or operator of any triple superphosphate plant shall maintain a daily record of equivalent P_2O_5 feed by first determining the total mass rate in Mg/hr of phosphorus-bearing feed using a flow monitoring device meeting the requirements of paragraph (a) of this section and then by proceeding according to § 60.234(b)(3).

The owner or operator of any triple superphosphate plant subject to the provisions of this part shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the process scrubbing system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

[40 FR 33156, Aug. 6, 1975, as amended at 54 FR 6670, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§ 60.234 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the total fluorides standards in § 60.232 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si} \, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/Mg (lb/ton) of equivalent P_2O_5 feed.

C_{si}=concentration of total fluorides from emission point "i," mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point "i," dscm/hr (dscf/hr).

N=number of emission points in the affected facility.

P=equivalent P_2O_5 feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13b shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$P = M_p R_p$

where:

M_p total mass flow rate of phosphorus-bearing feed, Mg/hr (ton/hr).

R_p=P_2O_5 content, decimal fraction.

(i) The accountability system of § 60.233(a) shall be used to determine the mass flow rate (M_p) of the phosphorus-bearing feed.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the feed.

[54 FR 6670, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 65 FR 61757, Oct. 17, 2000]

Subpart X—Standards of Performance for the Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities

§ 60.240 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each granular triple superphosphate storage facility. For the purpose of this subpart, the affected facility includes any combination of: Storage or curing piles, conveyors, elevators, screens and mills.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 22, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977]

§ 60.241 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Granular triple superphosphate storage facility* means any facility curing or storing fresh granular triple superphosphate.

(b) *Total fluorides* means elemental fluorine and all fluoride compounds as measured by reference methods specified in § 60.244, or equivalent or alternative methods.

(c) *Equivalent* P_2O_5 *stored* means the quantity of phosphorus, expressed as phosphorus pentoxide, being cured or stored in the affected facility.

(d) *Fresh granular triple superphosphate* means granular triple superphosphate produced within the preceding 72 hours.

[40 FR 33156, Aug. 6, 1975, as amended at 62 FR 18280, Apr. 15, 1997; 65 FR 61757, Oct. 17, 2000]

§ 60.242 Standard for fluorides.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain total fluorides in excess of 0.25 g/hr/megagram (Mg) of equivalent P_2O_5 stored (5.0×10^{-4} lb/hr/ton of equivalent P_2O_5 stored).

(b) No owner or operator subject to the provisions of this subpart shall ship fresh granular triple superphosphate from an affected facility.

[40 FR 33156, Aug. 6, 1975, as amended at 62 FR 18280, Apr. 15, 1997; 65 FR 61757, Oct. 17, 2000]

§ 60.243 Monitoring of operations.

(a) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subpart shall maintain an accurate account of triple superphosphate in storage to permit the determination of the amount of equivalent P_2O_5 stored.

(b) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subpart shall maintain a daily record of total equivalent P_2O_5 stored by multiplying the percentage P_2O_5 content, as determined by § 60.244(c)(3), times the total mass of granular triple superphosphate stored.

(c) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across any process scrubbing system. The monitoring device shall have an accuracy of ± 5 percent over its operating range.

(d) The owner or operator of any granular triple superphosphate storage facility subject to the provisions of this subpart shall develop for approval by the Administrator a site-specific methodology including sufficient recordkeeping for the purposes of demonstrating compliance with § 60.242 (b).

[40 FR 33156, Aug. 6, 1975, as amended at 54 FR 6671, Feb. 14, 1989; 62 FR 18280, Apr. 15, 1997]

§ 60.244 Test methods and procedures.

(a) The owner or operator shall conduct performance tests required in § 60.8 only when the following quantities of product are being cured or stored in the facility.

(1) Total granular triple superphosphate is at least 10 percent of the building capacity, and

(2) Fresh granular triple superphosphate is at least 6 percent of the total amount of triple superphosphate, or

(3) If the provision in paragraph (a)(2) of this section exceeds production capabilities for fresh granular triple superphosphate, fresh granular triple

superphosphate is equal to at least 5 days maximum production.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the total fluorides standard in § 60.242 as follows:

(1) The emission rate (E) of total fluorides shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{N} C_{si}\, Q_{sdi} \right) / (PK)$$

where:

E=emission rate of total fluorides, g/hr/Mg (lb/hr/ton) of equivalent P_2O_5 stored.

C_{si}=concentration of total fluorides from emission point ''i,'' mg/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from emission point ''i,'' dscm/hr (dscf/hr).

N=number of emission points in the affected facility.

P=equivalent P_2O_5 stored, metric tons (tons).

K=conversion factor, 1000 mg/g (7,000 gr/lb).

(2) Method 13A or 13B shall be used to determine the total fluorides concentration (C_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas from each of the emission points. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The equivalent P_2O_5 feed rate (P) shall be computed for each run using the following equation:

$P=M_p\, R_p$

where:

M_p=amount of product in storage, Mg (ton).

R_p=P_2O_5 content of product in storage, weight fraction.

(i) The accountability system of § 60.243(a) shall be used to determine the amount of product (M_p) in storage.

(ii) The Association of Official Analytical Chemists (AOAC) Method 9 (incorporated by reference—see § 60.17) shall be used to determine the P_2O_5 content (R_p) of the product in storage.

[54 FR 6671, Feb. 14, 1989, as amended at 62 FR 18280, Apr. 15, 1997; 65 FR 61757, Oct. 17, 2000]

EDITORIAL NOTE: At 65 FR 61757, Oct. 17, 2000, § 60.244 (c)(1) was amended. However, the instruction, which read in part, ''revising the words ''metric ton'' the words ''(453,600 mg/lb)'' in the definition of the term ''K'' to read ''(7,000 gr/lb).'' . . . '' could not be incorporated because of inaccurate amendatory language.

Subpart Y—Standards of Performance for Coal Preparation Plants

§ 60.250 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to any of the following affected facilities in coal preparation plants which process more than 181 Mg (200 tons) per day: Thermal dryers, pneumatic coal-cleaning equipment (air tables), coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 24, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977; 42 FR 44812, Sept. 7, 1977, as amended at 65 FR 61757, Oct. 17, 2000]

§ 60.251 Definitions.

As used in this subpart, all terms not defined herein have the meaning given them in the Act and in subpart A of this part.

(a) *Coal preparation plant* means any facility (excluding underground mining operations) which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying.

(b) *Bituminous coal* means solid fossil fuel classified as bituminous coal by ASTM Designation D388–77, 90, 91, 95, or 98a (incorporated by reference—see § 60.17).

(c) *Coal* means all solid fossil fuels classified as anthracite, bituminous, subbituminous, or lignite by ASTM Designation D388–77, 90, 91, 95, or 98a (incorporated by reference—see § 60.17).

(d) *Cyclonic flow* means a spiraling movement of exhaust gases within a duct or stack.

(e) *Thermal dryer* means any facility in which the moisture content of bituminous coal is reduced by contact with a heated gas stream which is exhausted to the atmosphere.

(f) *Pneumatic coal-cleaning equipment* means any facility which classifies bituminous coal by size or separates bituminous coal from refuse by application of air stream(s).

(g) *Coal processing and conveying equipment* means any machinery used to reduce the size of coal or to separate coal from refuse, and the equipment used to convey coal to or remove coal and refuse from the machinery. This includes, but is not limited to, breakers, crushers, screens, and conveyor belts.

(h) *Coal storage system* means any facility used to store coal except for open storage piles.

(i) *Transfer and loading system* means any facility used to transfer and load coal for shipment.

[41 FR 2234, Jan. 15, 1976, as amended at 48 FR 3738, Jan. 27, 1983; 65 FR 61757, Oct. 17, 2000]

§60.252 Standards for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, an owner or operator subject to the provisions of this subpart shall not cause to be discharged into the atmosphere from any thermal dryer gases which:

(1) Contain particulate matter in excess of 0.070 g/dscm (0.031 gr/dscf).

(2) Exhibit 20 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, an owner or operator subject to the provisions of this subpart shall not cause to be discharged into the atmosphere from any pneumatic coal cleaning equipment, gases which:

(1) Contain particulate matter in excess of 0.040 g/dscm (0.017 gr/dscf).

(2) Exhibit 10 percent opacity or greater.

(c) On and after the date on which the performance test required to be conducted by §60.8 is completed, an owner or operator subject to the provisions of this subpart shall not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal, gases which exhibit 20 percent opacity or greater.

[41 FR 2234, Jan. 15, 1976, as amended at 65 FR 61757, Oct. 17, 2000]

§60.253 Monitoring of operations.

(a) The owner or operator of any thermal dryer shall install, calibrate, maintain, and continuously operate monitoring devices as follows:

(1) A monitoring device for the measurement of the temperature of the gas stream at the exit of the thermal dryer on a continuous basis. The monitoring device is to be certified by the manufacturer to be accurate within ±1.7 °C (±3 °F).

(2) For affected facilities that use venturi scrubber emission control equipment:

(i) A monitoring device for the continuous measurement of the pressure loss through the venturi constriction of the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±1 inch water gauge.

(ii) A monitoring device for the continuous measurement of the water supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±5 percent of design water supply pressure. The pressure sensor or tap must be located close to the water discharge point. The Administrator may be consulted for approval of alternative locations.

(b) All monitoring devices under paragraph (a) of this section are to be recalibrated annually in accordance with procedures under §60.13(b).

[41 FR 2234, Jan. 15, 1976, as amended at 54 FR 6671, Feb. 14, 1989; 65 FR 61757, Oct. 17, 2000]

§60.254 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the particular matter standards in §60.252 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). Sampling shall begin no less than 30 minutes after startup and shall terminate before shutdown procedures begin.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6671, Feb. 14, 1989]

Subpart Z—Standards of Performance for Ferroalloy Production Facilities

SOURCE: 41 FR 18501, May 4, 1976, unless otherwise noted.

§ 60.260 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities: Electric submerged arc furnaces which produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide; and dust-handling equipment.

(b) Any facility under paragraph (a) of this section that commences construction or modification after October 21, 1974, is subject to the requirements of this subpart.

[42 FR 37938, July 25, 1977]

§ 60.261 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Electric submerged arc furnace* means any furnace wherein electrical energy is converted to heat energy by transmission of current between electrodes partially submerged in the furnace charge.

(b) *Furnace charge* means any material introduced into the electric submerged arc furnace, and may consist of, but is not limited to, ores, slag, carbonaceous material, and limestone.

(c) *Product change* means any change in the composition of the furnace charge that would cause the electric submerged arc furnace to become subject to a different mass standard applicable under this subpart.

(d) *Slag* means the more or less completely fused and vitrified matter separated during the reduction of a metal from its ore.

(e) *Tapping* means the removal of slag or product from the electric submerged arc furnace under normal operating conditions such as removal of metal under normal pressure and movement by gravity down the spout into the ladle.

(f) *Tapping period* means the time duration from initiation of the process of opening the tap hole until plugging of the tap hole is complete.

(g) *Furnace cycle* means the time period from completion of a furnace product tap to the completion of the next consecutive product tap.

(h) *Tapping station* means that general area where molten product or slag is removed from the electric submerged arc furnace.

(i) *Blowing tap* means any tap in which an evolution of gas forces or projects jets of flame or metal sparks beyond the ladle, runner, or collection hood.

(j) *Furnace power input* means the resistive electrical power consumption of an electric submerged arc furnace as measured in kilowatts.

(k) *Dust-handling equipment* means any equipment used to handle particulate matter collected by the air pollution control device (and located at or near such device) serving any electric submerged arc furnace subject to this subpart.

(l) *Control device* means the air pollution control equipment used to remove particulate matter generated by an electric submerged arc furnace from an effluent gas stream.

(m) *Capture system* means the equipment (including hoods, ducts, fans, dampers, etc.) used to capture or transport particulate matter generated by an affected electric submerged arc furnace to the control device.

(n) *Standard ferromanganese* means that alloy as defined by ASTM Designation A99–76 or 82 (Reapproved 1987) (incorporated by reference—see §60.17).

(o) *Silicomanganese* means that alloy as defined by ASTM Designation A483–64 or 74 (Reapproved 1988) (incorporated by reference—see §60.17).

(p) *Calcium carbide* means material containing 70 to 85 percent calcium carbide by weight.

(q) *High-carbon ferrochrome* means that alloy as defined by ASTM Designation A101–73 or 93 (incorporated by reference—see §60.17) grades HC1 through HC6.

(r) *Charge chrome* means that alloy containing 52 to 70 percent by weight chromium, 5 to 8 percent by weight carbon, and 3 to 6 percent by weight silicon.

(s) *Silvery iron* means any ferrosilicon, as defined by ASTM Designation A100–69, 74, or 93 (incorporated by reference—see §60.17), which contains less than 30 percent silicon.

(t) *Ferrochrome silicon* means that alloy as defined by ASTM Designation A482–76 or 93 (incorporated by reference—see §60.17).

(u) *Silicomanganese zirconium* means that alloy containing 60 to 65 percent by weight silicon, 1.5 to 2.5 percent by weight calcium, 5 to 7 percent by weight zirconium, 0.75 to 1.25 percent by weight aluminum, 5 to 7 percent by weight manganese, and 2 to 3 percent by weight barium.

(v) *Calcium silicon* means that alloy as defined by ASTM Designation A495–76 or 94 (incorporated by reference—see §60.17).

(w) *Ferrosilicon* means that alloy as defined by ASTM Designation A100–69, 74, or 93 (incorporated by reference—see §60.17) grades A, B, C, D, and E, which contains 50 or more percent by weight silicon.

(x) *Silicon metal* means any silicon alloy containing more than 96 percent silicon by weight.

(y) *Ferromanganese silicon* means that alloy containing 63 to 66 percent by weight manganese, 28 to 32 percent by weight silicon, and a maximum of 0.08 percent by weight carbon.

[41 FR 18501, May 4, 1976; 41 FR 20659, May 20, 1976, as amended at 48 FR 3738, Jan. 27, 1983; 65 FR 61758, Oct. 17, 2000]

§60.262 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any electric submerged arc furnace any gases which:

(1) Exit from a control device and contain particulate matter in excess of 0.45 kg/MW–hr (0.99 lb/MW–hr) while silicon metal, ferrosilicon, calcium silicon, or silicomanganese zirconium is being produced.

(2) Exit from a control device and contain particulate matter in excess of 0.23 kg/MW–hr (0.51 lb/MW–hr) while highcarbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, calcium carbide, ferrochrome silicon, ferromanganese silicon, or silvery iron is being produced.

(3) Exit from a control device and exhibit 15 percent opacity or greater.

(4) Exit from an electric submerged arc furnace and escape the capture system and are visible without the aid of instruments. The requirements under this subparagraph apply only during periods when flow rates are being established under §60.265(d).

(5) Escape the capture system at the tapping station and are visible without the aid of instruments for more than 40 percent of each tapping period. There are no limitations on visible emissions under this subparagraph when a blowing tap occurs. The requirements under this subparagraph apply only during periods when flow rates are being established under §60.265(d).

(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any dust-handling equipment any gases which exhibit 10 percent opacity or greater.

§60.263 Standard for carbon monoxide.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged in to the atmosphere from any electric submerged arc furnace any gases which contain, on a dry basis, 20 or greater volume percent of carbon monoxide. Combustion of such gases under conditions acceptable to the Administrator constitutes compliance with this section. Acceptable conditions include, but are not limited to, flaring of gases or use of gases as fuel for other processes.

§ 60.264 Emission monitoring.

(a) The owner or operator subject to the provisions of this subpart shall install, calibrate, maintain and operate a continuous monitoring system for measurement of the opacity of emissions discharged into the atmosphere from the control device(s).

(b) For the purpose of reports required under § 60.7(c), the owner or operator shall report as excess emissions all six-minute periods in which the average opacity is 15 percent or greater.

(c) The owner or operator subject to the provisions of this subpart shall submit a written report of any product change to the Administrator. Reports of product changes must be postmarked not later than 30 days after implementation of the product change.

§ 60.265 Monitoring of operations.

(a) The owner or operator of any electric submerged arc furnace subject to the provisions of this subpart shall maintain daily records of the following information:

(1) Product being produced.

(2) Description of constituents of furnace charge, including the quantity, by weight.

(3) Time and duration of each tapping period and the identification of material tapped (slag or product.)

(4) All furnace power input data obtained under paragraph (b) of this section.

(5) All flow rate data obtained under paragraph (c) of this section or all fan motor power consumption and pressure drop data obtained under paragraph (e) of this section.

(b) The owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a device to measure and continuously record the furnace power input. The furnace power input may be measured at the output or input side of the transformer. The device must have an accuracy of ±5 percent over its operating range.

(c) The owner or operator subject to the provisions of this subpart shall install, calibrate, and maintain a monitoring device that continuously measures and records the volumetric flow rate through each separately ducted hood of the capture system, except as provided under paragraph (e) of this section. The owner or operator of an electric submerged arc furnace that is equipped with a water cooled cover which is designed to contain and prevent escape of the generated gas and particulate matter shall monitor only the volumetric flow rate through the capture system for control of emissions from the tapping station. The owner or operator may install the monitoring device(s) in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device must have an accuracy of ±10 percent over its normal operating range and must be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device relative to Methods 1 and 2 of appendix A to this part.

(d) When performance tests are conducted under the provisions of § 60.8 of this part to demonstrate compliance with the standards under §§ 60.262(a) (4) and (5), the volumetric flow rate through each separately ducted hood of the capture system must be determined using the monitoring device required under paragraph (c) of this section. The volumetric flow rates must be determined for furnace power input levels at 50 and 100 percent of the nominal rated capacity of the electric submerged arc furnace. At all times the electric submerged arc furnace is operated, the owner or operator shall maintain the volumetric flow rate at or above the appropriate levels for that furnace power input level determined during the most recent performance test. If emissions due to tapping are captured and ducted separately from emissions of the electric submerged arc furnace, during each tapping period the owner or operator shall maintain the exhaust flow rates through the capture system over the tapping station at or above the levels established during the most recent performance test. Operation at lower flow rates may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that these flow rates be reestablished by conducting new performance tests under § 60.8 of this part.

(e) The owner or operator may as an alternative to paragraph (c) of this section determine the volumetric flow rate through each fan of the capture system from the fan power consumption, pressure drop across the fan and the fan performance curve. Only data specific to the operation of the affected electric submerged arc furnace are acceptable for demonstration of compliance with the requirements of this paragraph. The owner or operator shall maintain on file a permanent record of the fan performance curve (prepared for a specific temperature) and shall:

(1) Install, calibrate, maintain, and operate a device to continuously measure and record the power consumption of the fan motor (measured in kilowatts), and

(2) Install, calibrate, maintain, and operate a device to continuously measure and record the pressure drop across the fan. The fan power consumption and pressure drop measurements must be synchronized to allow real time comparisions of the data. The monitoring devices must have an accuracy of ±5 percent over their normal operating ranges.

(f) The volumetric flow rate through each fan of the capture system must be determined from the fan power consumption, fan pressure drop, and fan performance curve specified under paragraph (e) of this section, during any performance test required under § 60.8 to demonstrate compliance with the standards under §§ 60.262(a)(4) and (5). The owner or operator shall determine the volumetric flow rate at a representative temperature for furnace power input levels of 50 and 100 percent of the nominal rated capacity of the electric submerged arc furnace. At all times the electric submerged arc furnace is operated, the owner or operator shall maintain the fan power consumption and fan pressure drop at levels such that the volumetric flow rate is at or above the levels established during the most recent performance test for that furnace power input level. If emissions due to tapping are captured and ducted separately from emissions of the electric submerged arc furnace, during each tapping period the owner or operator shall maintain the fan power consumption and fan pressure drop at levels such that the volumetric flow rate is at or above the levels established during the most recent performance test. Operation at lower flow rates may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that these flow rates be reestablished by conducting new performance tests under § 60.8. The Administrator may require the owner or operator to verify the fan performance curve by monitoring necessary fan operating parameters and determining the gas volume moved relative to Methods 1 and 2 of appendix A to this part.

(g) All monitoring devices required under paragraphs (c) and (e) of this section are to be checked for calibration annually in accordance with the procedures under § 60.13(b).

§ 60.266 Test methods and procedures.

(a) During any performance test required in § 60.8, the owner or operator shall not allow gaseous diluents to be added to the effluent gas stream after the fabric in an open pressurized fabric filter collector unless the total gas volume flow from the collector is accurately determined and considered in the determination of emissions.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the particulate matter standards in § 60.262 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E = \left[\left(\sum_{i=1}^{N} C_{si}\, Q_{sdi}\right)\right] / (PK)$$

where:

E=emission rate of particulate matter, kg/MW-hr (1b/MW-hr).

n=total number of exhaust streams at which emissions are quantified.

c_{si}=concentration of particulate matter from exhaust stream ''i'', g/dscm (gr/dscf).

Q_{sdi}=volumetric flow rate of effluent gas from exhaust stream ''i'', dscm/hr (dscf/hr).

P=average furnace power input, MW.

K=conversion factor, 1000 g/kg (7000 gr/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_{si}) and volumetric flow rate (Q_{sdi}) of the effluent gas, except that the heating systems specified in sections 2.1.2 and 2.1.6 are not to be used when the carbon monoxide content of the gas stream exceeds 10 percent by volume, dry basis. If a flare is used to comply with § 60.263, the sampling site shall be upstream of the flare. The sampling time shall include an integral number of furnace cycles.

(i) When sampling emissions from open electric submerged arc furnaces with wet scrubber control devices, sealed electric submerged arc furnaces, or semienclosed electric arc furnaces, the sampling time and sample volume for each run shall be at least 60 minutes and 1.80 dscm (63.6 dscf).

(ii) When sampling emissions from other types of installations, the sampling time and sample volume for each run shall be at least 200 minutes and 5.66 dscm (200 dscf).

(3) The measurement device of § 60.265(b) shall be used to determine the average furnace power input (P) during each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(5) The emission rate correction factor, integrated sampling procedure of Method 3B shall be used to determine the CO concentration. The sample shall be taken simultaneously with each particulate matter sample.

(d) During the particulate matter run, the maximum open hood area (in hoods with segmented or otherwise moveable sides) under which the process is expected to be operated and remain in compliance with all standards shall be recorded. Any future operation of the hooding system with open areas in excess of the maximum is not permitted.

(e) To comply with § 60.265 (d) or (f), the owner or operator shall use the monitoring devices in § 60.265 (c) or (e) to make the required measurements as determined during the performance test.

[54 FR 6671, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 55 FR 5212, Feb. 14, 1990; 65 FR 61758, Oct. 17, 2000]

Subpart AA—Standards of Performance for Steel Plants: Electric Arc Furnaces Constructed After October 21, 1974, and On or Before August 17, 1983

§ 60.270 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces and dust-handling systems.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commenced construction, modification, or reconstruction after October 21, 1974, and on or before August 17, 1983.

[49 FR 43843, Oct. 31, 1984]

§ 60.271 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Electric arc furnace (EAF)* means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition.

(b) *Dust-handling equipment* means any equipment used to handle particulate matter collected by the control device and located at or near the control device for an EAF subject to this subpart.

(c) *Control device* means the air pollution control equipment used to remove particulate matter generated by an EAF(s) from the effluent gas stream.

(d) *Capture system* means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an EAF to the air pollution control device.

(e) *Charge* means the addition of iron and steel scrap or other materials into the top of an electric arc furnace.

(f) *Charging period* means the time period commencing at the moment an EAF starts to open and ending either three minutes after the EAF roof is returned to its closed position or six minutes after commencement of opening of the roof, whichever is longer.

(g) *Tap* means the pouring of molten steel from an EAF.

(h) *Tapping period* means the time period commencing at the moment an EAF begins to pour molten steel and ending either three minutes after steel ceases to flow from an EAF, or six minutes after steel begins to flow, whichever is longer.

(i) *Meltdown and refining* means that phase of the steel production cycle when charge material is melted and undesirable elements are removed from the metal.

(j) *Meltdown and refining period* means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging periods and times when power to the EAF is off.

(k) *Shop opacity* means the arithmetic average of 24 or more opacity observations of emissions from the shop taken in accordance with Method 9 of appendix A of this part for the applicable time periods.

(l) *Heat time* means the period commencing when scrap is charged to an empty EAF and terminating when the EAF tap is completed.

(m) *Shop* means the building which houses one or more EAF's.

(n) *Direct shell evacuation system* means any system that maintains a negative pressure within the EAF above the slag or metal and ducts these emissions to the control device.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43843, Oct. 31, 1984; 64 FR 10109, Mar. 2, 1999]

§ 60.272 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an electric arc furnace any gases which:

(1) Exit from a control device and contain particulate matter in excess of 12 mg/dscm (0.0052 gr/dscf).

(2) Exit from a control device and exhibit three percent opacity or greater.

(3) Exit from a shop and, due solely to operations of any EAF(s), exhibit 6 percent opacity or greater except:

(i) Shop opacity less than 20 percent may occur during charging periods.

(ii) Shop opacity less than 40 percent may occur during tapping periods.

(iii) The shop opacity standards under paragraph (a)(3) of this section shall apply only during periods when the monitoring parameter limits specified in § 60.274(b) are being established according to § 60.274(c) and (g), unless the owner or operator elects to perform daily shop opacity observations in lieu of furnace static pressure monitoring as provided for under § 60.273(d).

(iv) Where the capture system is operated such that the roof of the shop is closed during the charge and the tap, and emissions to the atmosphere are prevented until the roof is opened after completion of the charge or tap, the shop opacity standards under paragraph (a)(3) of this section shall apply when the roof is opened and shall continue to apply for the length of time defined by the charging and/or tapping periods.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from dust-handling equipment any gases which exhibit 10 percent opacity or greater.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43843, Oct. 31, 1984; 64 FR 10109, Mar. 2, 1999]

§ 60.273 Emission monitoring.

(a) A continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart.

(b) For the purpose of reports under § 60.7(c), all six-minute periods during which the average opacity is three percent or greater shall indicate a period of excess emission, and shall be reported to the Administrator semi-annually.

(c) A continuous monitoring system is not required on any modular, multiple-stack, negative-pressure or positive-pressure fabric filter if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer as follows: Visible emission observations shall be conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emission, only one set of three 6-minute observations will be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272(a) of this subpart.

(d) A furnace static pressure monitoring device is not required on any EAF equipped with a DEC system if observations of shop opacity are performed by a certified visible emission observer as follows: Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period. Shop opacity shall be determined as the arithmetic average of 24 or more consecutive 15-second opacity observations of emissions from the shop taken in accordance with Method 9. Shop opacity shall be recorded for any point(s) where visible emissions are observed in proximity to an affected EAF. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43843, Oct. 31, 1984; 54 FR 6672. Feb. 14, 1989; 64 FR 10109, Mar. 2, 1999]

§ 60.274 Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart shall maintain records daily of the following information:

(1) Time and duration of each charge;

(2) Time and duration of each tap;

(3) All flow rate data obtained under paragraph (b) of this section, or equivalent obtained under paragraph (d) of this section; and

(4) All pressure data obtained under paragraph (f) of this section.

(b) Except as provided under paragraph (d) of this section, the owner or operator subject to the provisions of this subpart shall check and record on a once-per-shift basis furnace static pressure (if a DEC system is in use, and a furnace static pressure gauge is installed according to paragraph (f) of this section) and either: check and record the control system fan motor amperes and damper positions on a once-per-shift basis; install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check and record damper positions on a once-per-shift basis. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of appendix A of this part.

(c) When the owner or operator of an EAF is required to demonstrate compliance with the standards under §60.272(a)(3) and at any other time the Administrator may require that (under section 114 of the Act, as amended) either: the control system fan motor amperes and all damper positions; the volumetric flow rate through each separately ducted hood; or the volumetric flow rate at the control device inlet and all damper positions shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the EAF subject to paragraph (b)(1) or (b)(2) of this section. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of §60.276(a).

(d) The owner or operator may petition the Administrator to approve any alternative method that will provide a continuous record of operation of each emission capture system.

(e) The owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of hole in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.

(f) Except as provided for under §60.273(d), where emissions during any phase of the heat time are controlled by use of a direct shell evacuation system, the owner or operator shall install, calibrate, and maintain a monitoring device that continuously records the pressure in the free space inside the EAF. The pressure shall be recorded as 15-minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ±5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(g) Except as provided for under §60.273(d), when the owner or operator of an EAF is required to demonstrate compliance with the standard under §60.272(a)(3) and at any other time the Administrator may require (under section 114 of the Act, as amended), the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device under paragraph (f) of this section. The owner or operator may petition the Administrator for reestablishment of the 15-minute integrated average pressure whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility.

(h) Where the capture system is designed and operated such that all emissions are captured and ducted to a control device, the owner or operator shall not be subject to the requirements of this section.

(i) During any performance test required under § 60.8, and for any report thereof required by § 60.276(c) of this subpart or to determine compliance with § 60.272(a)(3) of this subpart, the owner or operator shall monitor the following information for all heats covered by the test:

(1) Charge weights and materials, and tap weights and materials;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside the furnace where direct-shell evacuation systems are used;

(3) Control device operation log; and

(4) Continuous opacity monitor or Method 9 data.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43843, Oct. 31, 1984; 64 FR 10110, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000]

§ 60.275 Test methods and procedures.

(a) During performance tests required in § 60.8, the owner or operator shall not add gaseous diluent to the effluent gas after the fabric in any pressurized fabric collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(b) When emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test (see also § 60.276(b)):

(1) Determine compliance using the combined emissions.

(2) Use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of this subpart.

(c) When emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator shall use either or both of the following procedures to demonstrate compliance with § 60.272(a)(3):

(1) Determine compliance using the combined emissions.

(2) Shut down operation of facilities not subject to the provisions of this subpart during the performance test.

(d) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(e) The owner or operator shall determine compliance with the particulate matter standards in § 60.272 as follows:

(1) Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Method 5D shall be used for positive-pressure fabric filters to determine the particular matter concentration and, if applicable, the volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.5 dscm (160 dscf) and, when a single EAF is sampled, the sampling time shall include an integral number of heats.

(2) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$c_{st} = \left[\sum_{i=1}^{n} \left(c_{si}\, Q_{sdi} \right) \right] / \sum_{i=1}^{n} Q_{sdi}$$

where:

c_{st}=average concentration of particulate matter, mg/dscm (gr/dscf).

c_{si}=concentration of particulate matter from control device ‘‘i’’, mg/dscm (gr/dscf).

n=total number of control devices tested.

Q_{sdi}=volumetric flow rate of stack gas from control device ‘‘i’’, dscm/hr (dscf/hr).

(3) Method 9 and the procedures of § 60.11 shall be used to determine opacity.

(4) To demonstrate compliance with § 60.272(a) (1), (2), and (3), the Method 9 test runs shall be conducted concurrently with the particulate matter test runs, unless inclement weather interferes.

(f) To comply with § 60.274 (c), (f), (g), and (i), the owner or operator shall obtain the information in these paragraphs during the particulate matter runs.

(g) Where emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(1) Base compliance on control of the combined emissions.

(2) Utilize a method acceptable to the Administrator which compensates for the emissions from the facilities not subject to the provisions of this subpart.

(3) Any combination of the criteria of paragraphs (g)(1) and (g)(2) of this section.

(h) Where emissions from any EAF(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator may use any of the following procedures for demonstrating compliance with § 60.272(a)(3):

(1) Base compliance on control of the combined emissions.

(2) Shut down operation of facilities not subject to the provisions of this subpart.

(3) Any combination of the criteria of paragraphs (h)(1) and (h)(2) of this section.

(i) Visible emissions observations of modular, multiple-stack, negative-pressure or positive-pressure fabric filters shall occur at least once per day of operation. The observations shall occur when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations will be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272(a) of this subpart.

(j) Unless the presence of inclement weather makes concurrent testing infeasible, the owner or operator shall conduct concurrently the performance tests required under § 60.8 to demonstrate compliance with § 60.272(a) (1), (2), and (3) of this subpart.

[40 FR 43852, Sept. 23, 1975, as amended at 49 FR 43844, Oct. 31, 1984; 54 FR 6672, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 65 FR 61758, Oct. 17, 2000]

§ 60.276 Recordkeeping and reporting requirements.

(a) Operation at a furnace static pressure that exceeds the value established under § 60.274(g) and either operation of control system fan motor amperes at values exceeding ±15 percent of the value established under § 60.274(c) or operation at flow rates lower than those established under § 60.274(c) may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the Administrator semiannually.

(b) When the owner or operator of an EAF is required to demonstrate compliance with the standard under § 60.275 (b)(2) or a combination of (b)(1) and (b)(2), the owner or operator shall obtain approval from the Administrator of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked at least 30 days prior to the performance test.

(c) For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with § 60.272(a) of this subpart and furnish the Administrator a written report of the results of the test. This report shall include the following information:

(1) Facility name and address;

(2) Plant representative;

(3) Make and model of process, control device, and continuous monitoring equipment;

(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;

(5) Rated (design) capacity of process equipment;

(6) Those data required under § 60.274(i) of this subpart;

(i) List of charge and tap weights and materials;

(ii) Heat times and process log;

(iii) Control device operation log; and

(iv) Continuous opacity monitor or Method 9 data.

(7) Test dates and test times;

(8) Test company;

(9) Test company representative;

(10) Test observers from outside agency;

(11) Description of test methodology used, including any deviation from standard reference methods

(12) Schematic of sampling location;

(13) Number of sampling points;

(14) Description of sampling equipment;

(15) Listing of sampling equipment calibrations and procedures;

(16) Field and laboratory data sheets;

(17) Description of sample recovery procedures;

(18) Sampling equipment leak check results;

(19) Description of quality assurance procedures;

(20) Description of analytical procedures;

(21) Notation of sample blank corrections; and

(22) Sample emission calculations.

(d) The owner or operator shall maintain records of all shop opacity observations made in accordance with § 60.273(d). All shop opacity observations in excess of the emission limit specified in § 60.272(a)(3) of this subpart shall indicate a period of excess emission, and shall be reported to the Administrator semi-annually, according to § 60.7(c).

[49 FR 43844, Oct. 31, 1984, as amended at 54 FR 6672, Feb. 14, 1989; 64 FR 10110, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000]

Subpart AAa—Standards of Performance for Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels Constructed After August 17, 1983

SOURCE: 49 FR 43845, Oct. 31, 1984, unless otherwise noted.

§ 60.270a Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in steel plants that produce carbon, alloy, or specialty steels: electric arc furnaces, argon-oxygen decarburization vessels, and dust-handling systems.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after August 17, 1983.

§ 60.271a Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Argon-oxygen decarburization vessel (AOD vessel) means any closed-bottom, refractory-lined converter vessel with submerged tuyeres through which gaseous mixtures containing argon and oxygen or nitrogen may be blown into molten steel for further refining.

Capture system means the equipment (including ducts, hoods, fans, dampers, etc.) used to capture or transport particulate matter generated by an electric arc furnace or AOD vessel to the air pollution control device.

Charge means the addition of iron and steel scrap or other materials into the top of an electric arc furnace or the addition of molten steel or other materials into the top of an AOD vessel.

Control device means the air pollution control equipment used to remove particulate matter from the effluent gas stream generated by an electric arc furnace or AOD vessel.

Direct-shell evacuation control system (DEC system) means a system that maintains a negative pressure within the electric arc furnace above the slag or metal and ducts emissions to the control device.

Dust-handling system means equipment used to handle particulate matter collected by the control device for an electric arc furnace or AOD vessel subject to this subpart. For the purposes of this subpart, the dust-handling system shall consist of the control device dust hoppers, the dust-conveying equipment, any central dust storage equipment, the dust-treating equipment (e.g., pug mill, pelletizer), dust transfer equipment (from storage to truck), and any secondary control devices used with the dust transfer equipment.

Electric arc furnace (EAF) means a furnace that produces molten steel and heats the charge materials with electric arcs from carbon electrodes. For the purposes of this subpart, an EAF shall consist of the furnace shell and roof and the transformer. Furnaces that continuously feed direct-reduced iron ore pellets as the primary source of iron are not affected facilities within the scope of this definition.

Heat cycle means the period beginning when scrap is charged to an empty EAF and ending when the EAF tap is completed or beginning when molten steel is charged to an empty AOD vessel and ending when the AOD vessel tap is completed.

Meltdown and refining period means the time period commencing at the termination of the initial charging period and ending at the initiation of the tapping period, excluding any intermediate charging periods and times when power to the EAF is off.

Melting means that phase of steel production cycle during which the iron and steel scrap is heated to the molten state.

Negative-pressure fabric filter means a fabric filter with the fans on the downstream side of the filter bags.

Positive-pressure fabric filter means a fabric filter with the fans on the upstream side of the filter bags.

Refining means that phase of the steel production cycle during which undesirable elements are removed from the molten steel and alloys are added to reach the final metal chemistry.

Shop means the building which houses one or more EAF's or AOD vessels.

Shop opacity means the arithmetic average of 24 observations of the opacity of emissions from the shop taken in accordance with Method 9 of appendix A of this part.

Tap means the pouring of molten steel from an EAF or AOD vessel.

Tapping period means the time period commencing at the moment an EAF begins to pour molten steel and ending either three minutes after steel ceases to flow from an EAF, or six minutes after steel begins to flow, whichever is longer.

[49 FR 43845, Oct. 31, 1984, as amended at 64 FR 10110, Mar. 2, 1999]

§60.272a Standard for particulate matter.

(a) On and after the date of which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an EAF or an AOD vessel any gases which:

(1) Exit from a control device and contain particulate matter in excess of 12 mg/dscm (0.0052 gr/dscf);

(2) Exit from a control device and exhibit 3 percent opacity or greater; and

(3) Exit from a shop and, due solely to the operations of any affected EAF(s) or AOD vessel(s), exhibit 6 percent opacity or greater.

(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from the dust-handling system any gases that exhibit 10 percent opacity or greater.

§60.273a Emission monitoring.

(a) Except as provided under paragraphs (b) and (c) of this section, a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the control device(s) shall be installed, calibrated, maintained, and operated by the owner or operator subject to the provisions of this subpart.

(b) No continuous monitoring system shall be required on any control device serving the dust-handling system.

(c) A continuous monitoring system for the measurement of opacity is not required on modular, multiple-stack, negative-pressure or positive-pressure fabric filters if observations of the opacity of the visible emissions from the control device are performed by a certified visible emission observer as follows: Visible emission observations are conducted at least once per day when the furnace is operating in the melting and refining period. These observations shall be taken in accordance with Method 9, and, for at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of the visible emissions, only one set of three 6-minute observations will be required. In this case, Method 9 observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident. Records shall be maintained of any 6-minute average that is in excess of the emission limit specified in § 60.272a(a) of this subpart.

(d) A furnace static pressure monitoring device is not required on any EAF equipped with a DEC system if observations of shop opacity are performed by a certified visible emission observer as follows: Shop opacity observations shall be conducted at least once per day when the furnace is operating in the meltdown and refining period. Shop opacity shall be determined as the arithmetic average of 24 consecutive 15-second opacity observations of emissions from the shop taken in accordance with Method 9. Shop opacity shall be recorded for any point(s) where visible emissions are observed. Where it is possible to determine that a number of visible emission sites relate to only one incident of visible emissions, only one observation of shop opacity will be required. In this case, the shop opacity observations must be made for the site of highest opacity that directly relates to the cause (or location) of visible emissions observed during a single incident.

[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6672, Feb. 14, 1989; 64 FR 10111, Mar. 2, 1999]

§ 60.274a Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart shall maintain records of the following information:

(1) All data obtained under paragraph (b) of this section; and

(2) All monthly operational status inspections performed under paragraph (c) of this section.

(b) Except as provided under paragraph (d) of this section, the owner or operator subject to the provisions of this subpart shall check and record on a once-per-shift basis the furnace static pressure (if DEC system is in use, and a furnace static pressure gauge is installed according to paragraph (f) of this section) and either: check and record the control system fan motor amperes and damper position on a once-per-shift basis; install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate through each separately ducted hood; or install, calibrate, and maintain a monitoring device that continuously records the volumetric flow rate at the control device inlet and check and record damper positions on a once-per-shift basis. The monitoring device(s) may be installed in any appropriate location in the exhaust duct such that reproducible flow rate monitoring will result. The flow rate monitoring device(s) shall have an accuracy of ±10 percent over its normal operating range and shall be calibrated according to the manufacturer's instructions. The Administrator may require the owner or operator to demonstrate the accuracy of the monitoring device(s) relative to Methods 1 and 2 of appendix A of this part.

(c) When the owner or operator of an EAF is required to demonstrate compliance with the standards under § 60.272a(a)(3), and at any other time that the Administrator may require (under section 114 of the Act, as amended), either the control system fan motor amperes and all damper positions or the volumetric flow rate through each separately ducted hood shall be determined during all periods in which a hood is operated for the purpose of capturing emissions from the affected facility subject to paragraph (b)(1) or (b)(2) of this section. The owner or operator may petition the Administrator for reestablishment of these parameters whenever the owner or operator can demonstrate to the Administrator's satisfaction that the affected facility operating conditions upon which the parameters were previously established are no longer applicable. The values of these parameters as determined during the most recent demonstration of compliance shall be maintained at the appropriate level for each applicable period. Operation at other than baseline values may be subject to the requirements of § 60.276a(c).

(d) The owner or operator shall perform monthly operational status inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection shall include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). Any deficiencies shall be noted and proper maintenance performed.

(e) The owner or operator may petition the Administrator to approve any alternative to monthly operational status inspections that will provide a continuous record of the operation of each emission capture system.

(f) Except as provided for under § 60.273a(d), if emissions during any phase of the heat time are controlled by the use of a DEC system, the owner or operator shall install, calibrate, and maintain a monitoring device that allows the pressure in the free space inside the EAF to be monitored. The pressure shall be recorded as 15-minute integrated averages. The monitoring device may be installed in any appropriate location in the EAF or DEC duct prior to the introduction of ambient air such that reproducible results will be obtained. The pressure monitoring device shall have an accuracy of ±5 mm of water gauge over its normal operating range and shall be calibrated according to the manufacturer's instructions.

(g) Except as provided for under § 60.273a(d), when the owner or operator of an EAF controlled by a DEC is required to demonstrate compliance with the standard under § 60.272a(a)(3), and at any other time the Administrator may require (under section 114 of the Clean Air Act, as amended), the pressure in the free space inside the furnace shall be determined during the meltdown and refining period(s) using the monitoring device required under paragraph (f) of this section. The owner or operator may petition the Administrator for reestablishment of the pressure whenever the owner or operator can demonstrate to the Administrator's satisfaction that the EAF operating conditions upon which the pressures were previously established are no longer applicable. The pressure determined during the most recent demonstration of compliance shall be maintained at all times when the EAF is operating in a meltdown and refining period. Operation at higher pressures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility.

(h) During any performance test required under § 60.8, and for any report thereof required by § 60.276a(f) of this subpart, or to determine compliance with § 60.272a(a)(3) of this subpart, the owner or operator shall monitor the following information for all heats covered by the test:

(1) Charge weights and materials, and tap weights and materials;

(2) Heat times, including start and stop times, and a log of process operation, including periods of no operation during testing and the pressure inside an EAF when direct-shell evacuation control systems are used;

(3) Control device operation log; and

(4) Continuous opacity monitor or Method 9 data.

[49 FR 43845, Oct. 31, 1984, as amended at 64 FR 10111, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000]

§ 60.275a Test methods and procedures.

(a) During performance tests required in § 60.8, the owner or operator shall not add gaseous diluents to the effluent gas stream after the fabric in any pressurized fabric filter collector, unless the amount of dilution is separately determined and considered in the determination of emissions.

(b) When emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator shall use either or both of the following procedures during a performance test (see also § 60.276a(e)):

(1) Determine compliance using the combined emissions.

(2) Use a method that is acceptable to the Administrator and that compensates for the emissions from the facilities not subject to the provisions of this subpart.

(c) When emission from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart, the owner or operator shall demonstrate compliance with §60.272(a)(3) based on emissions from only the affected facility(ies).

(d) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(e) The owner or operator shall determine compliance with the particulate matter standards in §60.272a as follows:

(1) Method 5 shall be used for negative-pressure fabric filters and other types of control devices and Method 5D shall be used for positive-pressure fabric filters to determine the particulate matter concentration and volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 4 hours and 4.50 dscm (160 dscf) and, when a single EAF or AOD vessel is sampled, the sampling time shall include an integral number of heats.

(2) When more than one control device serves the EAF(s) being tested, the concentration of particulate matter shall be determined using the following equation:

$$c_{st} = \left[\sum_{i=1}^{n} \left(c_{si} \, Q_{sdi} \right) \right] \Big/ \sum_{i=1}^{n} Q_{sdi}$$

where:

c_{st}=average concentration of particulate matter, mg/dscm (gr/dscf).

c_{si}=concentration of particulate matter from control device ''i'', mg/dscm (gr/dscf).

n=total number of control devices tested.

Q_{sdi}=volumetric flow rate of stack gas from control device ''i'', dscm/hr (dscf/hr).

(3) Method 9 and the procedures of §60.11 shall be used to determine opacity.

(4) To demonstrate compliance with §60.272a(a) (1), (2), and (3), the Method 9 test runs shall be conducted concurrently with the particulate matter test runs, unless inclement weather interferes.

(f) To comply with §60.274a (c), (f), (g), and (h), the owner or operator shall obtain the information required in these paragraphs during the particulate matter runs.

(g) Any control device subject to the provisions of the subpart shall be designed and constructed to allow measurement of emissions using applicable test methods and procedures.

(h) Where emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart but controlled by a common capture system and control device, the owner or operator may use any of the following procedures during a performance test:

(1) Base compliance on control of the combined emissions;

(2) Utilize a method acceptable to the Administrator that compensates for the emissions from the facilities not subject to the provisions of this subpart, or;

(3) Any combination of the criteria of paragraphs (h)(1) and (h)(2) of this section.

(i) Where emissions from any EAF(s) or AOD vessel(s) are combined with emissions from facilities not subject to the provisions of this subpart, determinations of compliance with §60.272a(a)(3) will only be based upon emissions originating from the affected facility(ies).

(j) Unless the presence of inclement weather makes concurrent testing infeasible, the owner or operator shall conduct concurrently the performance tests required under §60.8 to demonstrate compliance with §60.272a(a) (1), (2), and (3) of this subpart.

[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6673, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 65 FR 61758, Oct. 17, 2000]

§60.276a Recordkeeping and reporting requirements.

(a) Records of the measurements required in §60.274a must be retained for at least 2 years following the date of the measurement.

(b) Each owner or operator shall submit a written report of exceedances of the control device opacity to the Administrator semi-annually. For the purposes of these reports, exceedances are defined as all 6-minute periods during which the average opacity is 3 percent or greater.

(c) Operation at a furnace static pressure that exceeds the value established under § 60.274a(g) and either operation of control system fan motor amperes at values exceeding ±15 percent of the value established under § 60.274a(c) or operation at flow rates lower than those established under § 60.274a(c) may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. Operation at such values shall be reported to the Administrator semiannually.

(d) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

(e) When the owner or operator of an EAF or AOD is required to demonstrate compliance with the standard under § 60.275 (b)(2) or a combination of (b)(1) and (b)(2) the owner or operator shall obtain approval from the Administrator of the procedure(s) that will be used to determine compliance. Notification of the procedure(s) to be used must be postmarked at least 30 days prior to the performance test.

(f) For the purpose of this subpart, the owner or operator shall conduct the demonstration of compliance with § 60.272a(a) of this subpart and furnish the Administrator a written report of the results of the test. This report shall include the following information:

(1) Facility name and address;

(2) Plant representative;

(3) Make and model of process, control device, and continuous monitoring equipment;

(4) Flow diagram of process and emission capture equipment including other equipment or process(es) ducted to the same control device;

(5) Rated (design) capacity of process equipment;

(6) Those data required under § 60.274a(h) of this subpart;

(i) List of charge and tap weights and materials;

(ii) Heat times and process log;

(iii) Control device operation log; and

(iv) Continuous opacity monitor or Method 9 data.

(7) Test dates and test times;

(8) Test company;

(9) Test company representative;

(10) Test observers from outside agency;

(11) Description of test methodology used, including any deviation from standard reference methods;

(12) Schematic of sampling location;

(13) Number of sampling points;

(14) Description of sampling equipment;

(15) Listing of sampling equipment calibrations and procedures;

(16) Field and laboratory data sheets;

(17) Description of sample recovery procedures;

(18) Sampling equipment leak check results;

(19) Description of quality assurance procedures;

(20) Description of analytical procedures;

(21) Notation of sample blank corrections; and

(22) Sample emission calculations.

(g) The owner or operator shall maintain records of all shop opacity observations made in accordance with § 60.273a(d). All shop opacity observations in excess of the emission limit specified in § 60.272a(a)(3) of this subpart shall indicate a period of excess emission, and shall be reported to the administrator semi-annually, according to § 60.7(c).

[49 FR 43845, Oct. 31, 1984, as amended at 54 FR 6673, Feb. 14, 1989; 64 FR 10111, Mar. 2, 1999; 65 FR 61758, Oct. 17, 2000]

Subpart BB—Standards of Performance for Kraft Pulp Mills

§ 60.280 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in kraft pulp mills: Digester system, brown stock washer system, multiple-effect evaporator system, recovery furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In pulp mills where kraft pulping is combined with neutral sulfite semichemical pulping, the provisions of this subpart are applicable when any portion of the material charged to an affected facility is produced by the kraft pulping operation.

(b) Except as noted in § 60.283(a)(1)(iv), any facility under paragraph (a) of this section that commences construction or modification after September 24, 1976, is subject to the requirements of this subpart.

[51 FR 18544, May 20, 1986]

§ 60.281 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in subpart A.

(a) *Kraft pulp mill* means any stationary source which produces pulp from wood by cooking (digesting) wood chips in a water solution of sodium hydroxide and sodium sulfide (white liquor) at high temperature and pressure. Regeneration of the cooking chemicals through a recovery process is also considered part of the kraft pulp mill.

(b) *Neutral sulfite semichemical pulping operation* means any operation in which pulp is produced from wood by cooking (digesting) wood chips in a solution of sodium sulfite and sodium bicarbonate, followed by mechanical defibrating (grinding).

(c) *Total reduced sulfur (TRS)* means the sum of the sulfur compounds hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and dimethyl disulfide, that are released during the kraft pulping operation and measured by Method 16.

(d) *Digester system* means each continuous digester or each batch digester used for the cooking of wood in white liquor, and associated flash tank(s), blow tank(s), chip steamer(s), and condenser(s).

(e) *Brown stock washer system* means brown stock washers and associated knotters, vacuum pumps, and filtrate tanks used to wash the pulp following the digester system. Diffusion washers are excluded from this definition.

(f) *Multiple-effect evaporator system* means the multiple-effect evaporators and associated condenser(s) and hotwell(s) used to concentrate the spent cooking liquid that is separated from the pulp (black liquor).

(g) *Black liquor oxidation system* means the vessels used to oxidize, with air or oxygen, the black liquor, and associated storage tank(s).

(h) *Recovery furnace* means either a straight kraft recovery furnace or a cross recovery furnace, and includes the direct-contact evaporator for a direct-contact furnace.

(i) *Straight kraft recovery furnace* means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains 7 weight percent or less of the total pulp solids from the neutral sulfite semichemical process or has green liquor sulfidity of 28 percent or less.

(j) *Cross recovery furnace* means a furnace used to recover chemicals consisting primarily of sodium and sulfur compounds by burning black liquor which on a quarterly basis contains more than 7 weight percent of the total pulp solids from the neutral sulfite semichemical process and has a green liquor sulfidity of more than 28 percent.

(k) *Black liquor solids* means the dry weight of the solids which enter the recovery furnace in the black liquor.

(l) *Green liquor sulfidity* means the sulfidity of the liquor which leaves the smelt dissolving tank.

(m) *Smelt dissolving tank* means a vessel used for dissolving the smelt collected from the recovery furnace.

(n) *Lime kiln* means a unit used to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

(o) *Condensate stripper system* means a column, and associated condensers, used to strip, with air or steam, TRS compounds from condensate streams from various processes within a kraft pulp mill.

[43 FR 7572, Feb. 23, 1978, as amended at 51 FR 18544, May 20, 1986; 65 FR 61758, Oct. 17, 2000]

§ 60.282 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any recovery furnace any gases which:

(i) Contain particulate matter in excess of 0.10 g/dscm (0.044 gr/dscf) corrected to 8 percent oxygen.

(ii) Exhibit 35 percent opacity or greater.

(2) From any smelt dissolving tank any gases which contain particulate matter in excess of 0.1 g/kg black liquor solids (dry weight)[0.2 lb/ton black liquor solids (dry weight)].

(3) From any lime kiln any gases which contain particulate matter in excess of:

(i) 0.15 g/dscm (0.066 gr/dscf) corrected to 10 percent oxygen, when gaseous fossil fuel is burned.

(ii) 0.30 g/dscm (0.13 gr/dscf) corrected to 10 percent oxygen, when liquid fossil fuel is burned.

[43 FR 7572, Feb. 23, 1978, as amended at 65 FR 61758, Oct. 17, 2000]

§ 60.283 Standard for total reduced sulfur (TRS).

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 10 percent oxygen, unless the following conditions are met:

(i) The gases are combusted in a lime kiln subject to the provisions of paragraph (a)(5) of this section; or

(ii) The gases are combusted in a recovery furnace subject to the provisions of paragraphs (a)(2) or (a)(3) of this section; or

(iii) The gases are combusted with other waste gases in an incinerator or other device, or combusted in a lime kiln or recovery furnace not subject to the provisions of this subpart, and are subjected to a minimum temperature of 650 °C (1200 °F) for at least 0.5 second; or

(iv) It has been demonstrated to the Administrator's satisfaction by the owner or operator that incinerating the exhaust gases from a new, modified, or reconstructed brown stock washer system is technologically or economically unfeasible. Any exempt system will become subject to the provisions of this subpart if the facility is changed so that the gases can be incinerated.

(v) The gases from the digester system, brown stock washer system, or condensate stripper system are controlled by a means other than combustion. In this case, this system shall not discharge any gases to the atmosphere which contain TRS in excess of 5 ppm by volume on a dry basis, uncorrected for oxygen content.

(vi) The uncontrolled exhaust gases from a new, modified, or reconstructed digester system contain TRS less than 0.005 g/kg air dried pulp (ADP) (0.01 lb/ton ADP).

(2) From any straight kraft recovery furnace any gases which contain TRS in excess of 5 ppm by volume on a dry basis, corrected to 8 percent oxygen.

(3) From any cross recovery furnace any gases which contain TRS in excess of 25 ppm by volume on a dry basis, corrected to 8 percent oxygen.

(4) From any smelt dissolving tank any gases which contain TRS in excess of 0.016 g/kg black liquor solids as H_2S (0.033 lb/ton black liquor solids as H_2S).

(5) From any lime kiln any gases which contain TRS in excess of 8 ppm by volume on a dry basis, corrected to 10 percent oxygen.

[43 FR 7572, Feb. 23, 1978, as amended at 50 FR 6317, Feb. 14, 1985; 51 FR 18544, May 20, 1986; 65 FR 61758, Oct. 17, 2000]

§ 60.284 Monitoring of emissions and operations.

(a) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate the following continuous monitoring systems:

(1) A continuous monitoring system to monitor and record the opacity of the gases discharged into the atmosphere from any recovery furnace. The span of this system shall be set at 70 percent opacity.

(2) Continuous monitoring systems to monitor and record the concentration of TRS emissions on a dry basis and the percent of oxygen by volume on a dry basis in the gases discharged into the atmosphere from any lime kiln, recovery furnace, digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system, except where the provisions of § 60.283(a)(1) (iii) or (iv) apply. These systems shall be located downstream of the control device(s) and the spans of these continuous monitoring system(s) shall be set:

(i) At a TRS concentration of 30 ppm for the TRS continuous monitoring system, except that for any cross recovery furnace the span shall be set at 50 ppm.

(ii) At 25 percent oxygen for the continuous oxygen monitoring system.

(b) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(1) For any incinerator, a monitoring device which measures and records the combustion temperature at the point of incineration of effluent gases which are emitted from any digester system, brown stock washer system, multiple-effect evaporator system, black liquor oxidation system, or condensate stripper system where the provisions of § 60.283(a)(1)(iii) apply. The monitoring device is to be certified by the manufacturer to be accurate within ±1 percent of the temperature being measured.

(2) For any lime kiln or smelt dissolving tank using a scrubber emission control device:

(i) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the control equipment. The monitoring device is to be certified by the manufacturer to be accurate to within a gage pressure of ±500 pascals (ca. ±2 inches water gage pressure).

(ii) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control equipment. The monitoring device is to be certified by the manufacturer to be accurate within ±15 percent of design scrubbing liquid supply pressure. The pressure sensor or tap is to be located close to the scrubber liquid discharge point. The Administrator may be consulted for approval of alternative locations.

(c) Any owner or operator subject to the provisions of this subpart shall, except where the provisions of § 60.283(a)(1)(iii) or (iv) apply, perform the following:

(1) Calculate and record on a daily basis 12-hour average TRS concentrations for the two consecutive periods of each operating day. Each 12-hour average shall be determined as the arithmetic mean of the appropriate 12 contiguous 1-hour average total reduced sulfur concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(2) Calculate and record on a daily basis 12-hour average oxygen concentrations for the two consecutive periods of each operating day for the recovery furnace and lime kiln. These 12-hour averages shall correspond to the 12-hour average TRS concentrations under paragraph (c)(1) of this section and shall be determined as an arithmetic mean of the appropriate 12 contiguous 1-hour average oxygen concentrations provided by each continuous monitoring system installed under paragraph (a)(2) of this section.

(3) Using the following equation, correct all 12-hour average TRS concentrations to 10 volume percent oxygen, except that all 12-hour average TRS concentrations from a recovery furnace shall be corrected to 8 volume percent oxygen instead of 10 percent, and all 12-hour average TRS concentrations from a facility to which the provisions of § 60.283(a)(1)(v) apply shall not be corrected for oxygen content:

$C_{\mathrm{corr}}=C_{\mathrm{meas}}\times(21-X/21-Y)$

where:

C_{corr}=the concentration corrected for oxygen.

C_{meas}=the concentration uncorrected for oxygen.

X=the volumetric oxygen concentration in percentage to be corrected to (8 percent for recovery furnaces and 10 percent for lime kilns, incinerators, or other devices).

Y=the measured 12-hour average volumetric oxygen concentration.

(4) Record once per shift measurements obtained from the continuous monitoring devices installed under paragraph (b)(2) of this section.

(d) For the purpose of reports required under § 60.7(c), any owner or operator subject to the provisions of this subpart shall report semiannually periods of excess emissions as follows:

(1) For emissions from any recovery furnace periods of excess emissions are:

(i) All 12-hour averages of TRS concentrations above 5 ppm by volume for straight kraft recovery furnaces and above 25 ppm by volume for cross recovery furnaces.

(ii) All 6-minute average opacities that exceed 35 percent.

(2) For emissions from any lime kiln, periods of excess emissions are all 12-hour average TRS concentration above 8 ppm by volume.

(3) For emissions from any digester system, brown stock washer system, multiple-effect evaporator system, or condensate stripper system periods of excess emissions are:

(i) All 12-hour average TRS concentrations above 5 ppm by volume unless the provisions of § 60.283(a)(1) (i), (ii), or (iv) apply; or

(ii) All periods in excess of 5 minutes and their duration during which the combustion temperature at the point of incineration is less than 650 °C (1200 °F), where the provisions of § 60.283(a)(1)(iii) apply.

(e) The Administrator will not consider periods of excess emissions reported under paragraph (d) of this section to be indicative of a violation of § 60.11(d) provided that:

(1) The percent of the total number of possible contiguous periods of excess emissions in a quarter (excluding periods of startup, shutdown, or malfunction and periods when the facility is not operating) during which excess emissions occur does not exceed:

(i) One percent for TRS emissions from recovery furnaces.

(ii) Six percent for average opacities from recovery furnaces.

(2) The Administrator determines that the affected facility, including air pollution control equipment, is maintained and operated in a manner which is consistent with good air pollution control practice for minimizing emissions during periods of excess emissions.

(f) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems required under this section.

(1) All continuous monitoring systems shall be operated in accordance with the applicable procedures under Performance Specifications 1, 3, and 5 of appendix B to this part.

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of appendix F to this part.

[43 FR 7572, Feb. 23, 1978, as amended at 51 FR 18545, May 20, 1986; 65 FR 61759, Oct. 17, 2000]

§ 60.285 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.282(a) (1) and (3) as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used as the cleanup solvent instead of acetone in the sample recovery procedure. The particulate concentration shall be corrected to the appropriate oxygen concentration according to § 60.284(c)(3).

(2) The emission rate correction factor, integrated sampling and analysis

procedure of Method 3B shall be used to determine the oxygen concentration. The gas sample shall be taken at the same time and at the same traverse points as the particulate sample.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator shall determine compliance with the particular matter standard in § 60.282(a)(2) as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=c_s Q_{sd}/BLS$

where:

E=emission rate of particulate matter, g/kg (lb/ton) of BLS.

c_s = Concentration of particulate matter, g/dscm (lb/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

BLS=black liquor solids (dry weight) feed rate, kg/hr (ton/hr).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 60 minutes and 0.90 dscm (31.8 dscf). Water shall be used instead of acetone in the sample recovery.

(3) Process data shall be used to determine the black liquor solids (BLS) feed rate on a dry weight basis.

(d) The owner or operator shall determine compliance with the TRS standards in § 60.283, except § 60.283(a)(1)(vi) and (4), as follows:

(1) Method 16 shall be used to determine the TRS concentration. The TRS concentration shall be corrected to the appropriate oxygen concentration using the procedure in § 60.284(c)(3). The sampling time shall be at least 3 hours, but no longer than 6 hours.

(2) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration. The sample shall be taken over the same time period as the TRS samples.

(3) When determining whether a furnace is a straight kraft recovery furnace or a cross recovery furnace, TAPPI Method T.624 (incorporated by reference—see § 60.17) shall be used to determine sodium sulfide, sodium hydroxide, and sodium carbonate. These determinations shall be made 3 times daily from the green liquor, and the daily average values shall be converted to sodium oxide (Na_20) and substituted into the following equation to determine the green liquor sulfidity:

$$GLS = 100\ C_{Na_2S} / \left(C_{Na_2S} C_{NaOH} C_{Na_2CO_3} \right)$$

Where:

GLS=green liquor sulfidity, percent.

C_{Na2S}=concentration of Na_2S as Na_2O, mg/liter (gr/gal).

C_{NaOH}=concentration of NaOH as Na_2O, mg/liter (gr/gal).

C_{Na2CO3}=concentration of Na_2CO_3 as Na_2O, mg/liter (gr/gal).

(e) The owner or operator shall determine compliance with the TRS standards in § 60.283(a)(1)(vi) and (4) as follows:

(1) The emission rate (E) of TRS shall be computed for each run using the following equation:

$E=C_{TRS}\ F\ Q_{sd}/P$

where:

E=emission rate of TRS, g/kg (lb/ton) of BLS or ADP.

C_{TRS}=average combined concentration of TRS, ppm.

F = conversion factor, 0.001417 g H_2S/m^3-ppm (8.846×10^{-8} lb H_2S/ft^3-ppm).

Q_{sd}=volumetric flow rate of stack gas, dscm/hr (dscf/hr).

P=black liquor solids feed or pulp production rate, kg/hr (ton/hr).

(2) Method 16 shall be used to determine the TRS concentration (C_{TRS}).

(3) Method 2 shall be used to determine the volumetric flow rate (Q_{sd}) of the effluent gas.

(4) Process data shall be used to determine the black liquor feed rate or the pulp production rate (P).

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used if a constant value of 0.009 g/dscm (0.004 gr/dscf) is added to the results of Method 17 and the stack temperature is no greater than 204 °C (400 °F).

(2) In place of Method 16, Method 16A or 16B may be used.

[54 FR 6673, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 55 FR 5212, Feb. 14, 1990; 65 FR 61759, Oct. 17, 2000]

Subpart CC—Standards of Performance for Glass Manufacturing Plants

§60.290 Applicability and designation of affected facility.

(a) Each glass melting furnace is an affected facility to which the provisions of this subpart apply.

(b) Any facility under paragraph (a) of this section that commences construction or modification after June 15, 1979, is subject to the requirements of this subpart.

(c) This subpart does not apply to hand glass melting furnaces, glass melting furnaces designed to produce less than 4.55 Mg (5 tons) of glass per day and all-electric melters.

[45 FR 66751, Oct. 7, 1980, as amended at 65 FR 61759, Oct. 17, 2000]

§60.291 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part, unless otherwise required by the context.

All-electric melter means a glass melting furnace in which all the heat required for melting is provided by electric current from electrodes submerged in the molten glass, although some fossil fuel may be charged to the furnace as raw material only.

Borosilicate recipe means glass product composition of the following approximate ranges of weight proportions: 60 to 80 percent silicon dioxide, 4 to 10 percent total R_2O (e.g., Na_2O and K_2O), 5 to 35 percent boric oxides, and 0 to 13 percent other oxides.

Container glass means glass made of soda-lime recipe, clear or colored, which is pressed and/or blown into bottles, jars, ampoules, and other products listed in Standard Industrial Classification 3221 (SIC 3221).

Experimental furnace means a glass melting furnace with the sole purpose of operating to evaluate glass melting processes, technologies, or glass products. An experimental furnace does not produce glass that is sold (except for further research and development purposes) or that is used as a raw material for nonexperimental furnaces.

Flat glass means glass made of soda-lime recipe and produced into continuous flat sheets and other products listed in SIC 3211.

Flow channels means appendages used for conditioning and distributing molten glass to forming apparatuses and are a permanently separate source of emissions such that no mixing of emissions occurs with emissions from the melter cooling system prior to their being vented to the atmosphere.

Glass melting furnace means a unit comprising a refractory vessel in which raw materials are charged, melted at high temperature, refined, and conditioned to produce molten glass. The unit includes foundations, superstructure and retaining walls, raw material charger systems, heat exchangers, melter cooling system, exhaust system, refractory brick work, fuel supply and electrical boosting equipment, integral control systems and instrumentation, and appendages for conditioning and distributing molten glass to forming apparatuses. The forming apparatuses, including the float bath used in flat glass manufacturing and flow channels in wool fiberglass and textile fiberglass manufacturing, are not considered part of the glass melting furnace.

Glass produced means the weight of the glass pulled from the glass melting furnace.

Hand glass melting furnace means a glass melting furnace where the molten glass is removed from the furnace by a glassworker using a blowpipe or a pontil.

Lead recipe means glass product composition of the following ranges of weight proportions: 50 to 60 percent silicon dioxide, 18 to 35 percent lead oxides, 5 to 20 percent total R_2O (e.g., Na_2O and K_2O), 0 to 8 percent total R_2O_3 (e.g., Al_2O_3), 0 to 15 percent total RO (e.g., CaO, MgO), other than lead oxide, and 5 to 10 percent other oxides.

Pressed and blown glass means glass which is pressed, blown, or both, including textile fiberglass, noncontinuous flat glass, noncontainer glass, and other products listed in SIC 3229. It is separated into:

(1) Glass of borosilicate recipe.

(2) Glass of soda-lime and lead recipes.

(3) Glass of opal, fluoride, and other recipes.

Rebricking means cold replacement of damaged or worn refractory parts of the glass melting furnace. Rebricking includes replacement of the refractories comprising the bottom, sidewalls, or roof of the melting vessel; replacement of refractory work in the heat exchanger; replacement of refractory portions of the glass conditioning and distribution system.

Soda-lime recipe means glass product composition of the following ranges of weight proportions: 60 to 75 percent silicon dioxide, 10 to 17 percent total R_2O (e.g., Na_2O and K_2O), 8 to 20 percent total RO but not to include any PbO (e.g., CaO, and MgO), 0 to 8 percent total R_2O_3 (e.g., Al_2O_3), and 1 to 5 percent other oxides.

Textile fiberglass means fibrous glass in the form of continuous strands having uniform thickness.

With modified-processes means using any technique designed to minimize emissions without the use of add-on pollution controls.

Wool fiberglass means fibrous glass of random texture, including fiberglass insulation, and other products listed in SIC 3296.

[45 FR 66751, Oct. 7, 1980, as amended at 49 FR 41035, Oct. 19, 1984; 65 FR 61759, Oct. 17, 2000]

§60.292 Standards for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator of a glass melting furnace subject to the provisions of this subpart shall cause to be discharged into the atmosphere—

(1) From any glass melting furnace fired exclusively with either a gaseous fuel or a liquid fuel, particulate matter at emission rates exceeding those specified in Table CC–1, Column 2 and Column 3, respectively, or

(2) From any glass melting furnace, fired simultaneously with gaseous and liquid fuels, particulate matter at emission rates exceeding STD as specified by the following equation:

$$STD=X\ [1.3(Y)+(Z)]$$

Where:

STD=Particulate matter emission limit, g of particulate/kg (lb of particulate/ton) of glass produced.

X=Emission rate specified in Table CC–1 for furnaces fired with gaseous fuel (Column 2).

Y=Decimal fraction of liquid fuel heating value to total (gaseous and liquid) fuel heating value fired in the glass melting furnaces as determined in §60.296(b). (joules/joules).

Z=(1–Y).

(b) Conversion of a glass melting furnace to the use of liquid fuel is not considered a modification for the purposes of §60.14.

(c) Rebricking and the cost of rebricking is not considered a reconstruction for the purposes of §60.15.

(d) An owner or operator of an experimental furnace is not subject to the requirements of this section.

(e) During routine maintenance of add-on pollution controls, an owner or operator of a glass melting furnace subject to the provisions of paragraph (a) of this section is exempt from the provisions of paragraph (a) of this section if:

(1) Routine maintenance in each calendar year does not exceed 6 days;

(2) Routine maintenance is conducted in a manner consistent with good air pollution control practices for minimizing emissions; and

(3) A report is submitted to the Administrator 10 days before the start of the routine maintenance (if 10 days cannot be provided, the report must be submitted as soon as practicable) and the report contains an explanation of the schedule of the maintenance.

TABLE CC–1—*Emission Rates*

[g of particulate/kg of glass produced]

Col. 1—Glass manufacturing plant industry segment	Col. 2—Furnace fired with gaseous fuel	Col. 3—Furnace fired with liquid fuel
Container glass	0.1	0.13
Pressed and blown glass		
(a) Borosilicate Recipes	0.5	0.65
(b) Soda-Lime and Lead Recipes	0.1	0.13
(c) Other-Than Borosilicate, Soda-Lime, and Lead Recipes (including opal, fluoride, and other recipes)	0.25	0.325
Wool fiberglass	0.25	0.325
Flat glass	0.225	0.225

[45 FR 66751, Oct. 7, 1980, as amended at 49 FR 41035, Oct. 19, 1984; 54 FR 6674, Feb. 14, 1989; 65 FR 61759, Oct. 17, 2000]

§60.293 Standards for particulate matter from glass melting furnace with modified-processes.

(a) An owner or operator of a glass melting furnaces with modified-processes is not subject to the provisions of §60.292 if the affected facility complies with the provisions of this section.

(b) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator of a glass melting furnace with modified-processes subject to the provisions of this subpart shall cause to be discharged into the atmosphere from the affected facility:

(1) Particulate matter at emission rates exceeding 0.5 gram of particulate per kilogram of glass produced (g/kg) as measured according to paragraph (e) of this section for container glass, flat glass, and pressed and blown glass with a soda-lime recipe melting furnaces.

(2) Particulate matter at emission rates exceeding 1.0 g/kg as measured according to paragraph (e) of this section for pressed and blown glass with a borosilicate recipe melting furnace.

(3) Particulate matter at emission rates exceeding 0.5 g/kg as measured according to paragraph (e) of this section for textile fiberglass and wool fiberglass melting furnaces.

(c) The owner or operator of an affected facility that is subject to emission limits specified under paragraph (b) of this section shall:

(1) Install, calibrate, maintain, and operate a continuous monitoring system for the measurement of the opacity of emissions discharged into the atmosphere from the affected facility.

(2) During the performance test required to be conducted by §60.8, conduct continuous opacity monitoring during each test run.

(3) Calculate 6-minute opacity averages from 24 or more data points equally spaced over each 6-minute period during the test runs.

(4) Determine, based on the 6-minute opacity averages, the opacity value corresponding to the 99 percent upper confidence level of a normal distribution of average opacity values.

(5) For the purposes of §60.7, report to the Administrator as excess emissions all of the 6-minute periods during which the average opacity, as measured by the continuous monitoring system installed under paragraph (c)(1) of this section, exceeds the opacity value corresponding to the 99 percent upper confidence level determined under paragraph (c)(4) of this section.

(d)(1) After receipt and consideration of written application, the Administrator may approve alternative continuous monitoring systems for the measurement of one or more process or operating parameters that is or are demonstrated to enable accurate and representative monitoring of an emission limit specified in paragraph (b) of this section.

(2) After the Administrator approves an alternative continuous monitoring system for an affected facility, the requirements of paragraphs (c) (1) through (5) of this section will not apply for that affected facility.

(e) An owner or operator may redetermine the opacity value corresponding to the 99 percent upper confidence level as described in paragraph (c)(4) of this section if the owner or operator:

(1) Conducts continuous opacity monitoring during each test run of a performance test that demonstrates compliance with an emission limit of paragraph (b) of this section,

(2) Recalculates the 6-minute opacity averages as described in paragraph (c)(3) of this section, and

(3) Uses the redetermined opacity value corresponding to the 99 percent upper confidence level for the purposes of paragraph (c)(5) of this section.

(f) Test methods and procedures as specified in §60.296 shall be used to determine compliance with this section except that to determine compliance for any glass melting furnace using modified processes and fired with either a gaseous fuel or a liquid fuel containing less than 0.50 weight percent sulfur, Method 5 shall be used with the probe and filter holder heating system in the sampling train set to provide a gas temperature of 120±14 °C (248±25 °F).

[49 FR 41036, Oct. 19, 1984, as amended at 64 FR 7466, Feb. 12, 1999; 65 FR 61759, Oct. 17, 2000]

§§ 60.294–60.295 [Reserved]

§ 60.296 Test methods and procedures.

(a) If a glass melting furnace with modified processes is changed to one without modified processes or if a glass melting furnace without modified processes is changed to one with modified processes, the owner or operator shall notify the Administrator at least 60 days before the change is scheduled to occur.

(b) When gaseous and liquid fuels are fired simultaneously in a glass melting furnace, the owner or operator shall determine the applicable standard under § 60.292(a)(2) as follows:

(1) The ratio (Y) of liquid fuel heating value to total (gaseous and liquid) fuel heating value fired in the glass melting furnaces shall be computed for each run using the following equation:

$Y=(H_l L)/(H_l L+H_g G)$

where:

Y=decimal fraction of liquid fuel heating value to total fuel heating value.
H_l=gross calorific value of liquid fuel, J/kg.
H_g=gross calorific value of gaseous fuel, J/kg.
L=liquid flow rate, kg/hr.
G=gaseous flow rate, kg/hr.

(2) Suitable methods shall be used to determine the rates (L and G) of fuels burned during each test period and a material balance over the glass melting furnace shall be used to confirm the rates.

(3) ASTM Method D240–76 or 92 (liquid fuels) and D1826–77 or 94 (gaseous fuels) (incorporated by reference—see § 60.17), as applicable, shall be used to determine the gross calorific values.

(c) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(d) The owner or operator shall determine compliance with the particulate matter standards in §§ 60.292 and 60.293 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=(c_s Q_{sd}-A)/P$

where:

E=emission rate of particulate matter, g/kg.
c_s=concentration of particulate matter, g/dsm.
Q_{sd}=volumetric flow rate, dscm/hr.
A=zero production rate correction
=227 g/hr for container glass, pressed and blown (soda-lime and lead) glass, and pressed and blown (other than borosilicate, soda-lime, and lead) glass.
=454 g/hr for pressed and blown (borosilicate) glass, wool fiberglass, and flat glass.
P=glass production rate, kg/hr.

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). The probe and filter holder heating system may be set to provide a gas temperature no greater than 177±14 °C (350±25 °F), except under the conditions specified in § 60.293(e).

(3) Direct measurement or material balance using good engineering practice shall be used to determine the amount of glass pulled during the performance test. The rate of glass produced is defined as the weight of glass pulled from the affected facility during the performance test divided by the number of hours taken to perform the performance test.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

[54 FR 6674, Feb. 14, 1989; 54 FR 21344, May 17, 1989, as amended at 65 FR 61759, Oct. 17, 2000]

Subpart DD—Standards of Performance for Grain Elevators

SOURCE: 43 FR 34347, Aug. 3, 1978, unless otherwise noted.

§ 60.300 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility at any grain terminal elevator or any grain storage elevator, except as provided under § 60.304(b). The affected facilities are each truck unloading station, truck loading station, barge and ship unloading station, barge and ship loading station, railcar loading station, railcar unloading station, grain dryer, and all grain handling operations.

(b) Any facility under paragraph (a) of this section which commences construction, modification, or reconstruction after August 3, 1978, is subject to the requirements of this part.

[43 FR 34347, Aug. 3, 1978, as amended at 52 FR 42434, Nov. 5, 1988]

§ 60.301 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Grain* means corn, wheat, sorghum, rice, rye, oats, barley, and soybeans.

(b) *Grain elevator* means any plant or installation at which grain is unloaded, handled, cleaned, dried, stored, or loaded.

(c) *Grain terminal elevator* means any grain elevator which has a permanent storage capacity of more than 88,100 m^3 (ca. 2.5 million U.S. bushels), except those located at animal food manufacturers, pet food manufacturers, cereal manufacturers, breweries, and livestock feedlots.

(d) *Permanent storage capacity* means grain storage capacity which is inside a building, bin, or silo.

(e) *Railcar* means railroad hopper car or boxcar.

(f) *Grain storage elevator* means any grain elevator located at any wheat flour mill, wet corn mill, dry corn mill (human consumption), rice mill, or soybean oil extraction plant which has a permanent grain storage capacity of 35,200 m^3 (ca. 1 million bushels).

(g) *Process emission* means the particulate matter which is collected by a capture system.

(h) *Fugitive emission* means the particulate matter which is not collected by a capture system and is released directly into the atmosphere from an affected facility at a grain elevator.

(i) *Capture system* means the equipment such as sheds, hoods, ducts, fans, dampers, etc. used to collect particulate matter generated by an affected facility at a grain elevator.

(j) *Grain unloading station* means that portion of a grain elevator where the grain is transferred from a truck, railcar, barge, or ship to a receiving hopper.

(k) *Grain loading station* means that portion of a grain elevator where the grain is transferred from the elevator to a truck, railcar, barge, or ship.

(l) *Grain handling operations* include bucket elevators or legs (excluding legs used to unload barges or ships), scale hoppers and surge bins (garners), turn heads, scalpers, cleaners, trippers, and the headhouse and other such structures.

(m) *Column dryer* means any equipment used to reduce the moisture content of grain in which the grain flows from the top to the bottom in one or more continuous packed columns between two perforated metal sheets.

(n) *Rack dryer* means any equipment used to reduce the moisture content of grain in which the grain flows from the top to the bottom in a cascading flow around rows of baffles (racks).

(o) *Unloading leg* means a device which includes a bucket-type elevator which is used to remove grain from a barge or ship.

[43 FR 34347, Aug. 3, 1978, as amended at 65 FR 61759, Oct. 17, 2000]

§ 60.302 Standard for particulate matter.

(a) On and after the 60th day of achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere any gases which exhibit greater than 0 percent opacity from any:

(1) Column dryer with column plate perforation exceeding 2.4 mm diameter (ca. 0.094 inch).

(2) Rack dryer in which exhaust gases pass through a screen filter coarser than 50 mesh.

(b) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility except a grain dryer any process emission which:

(1) Contains particulate matter in excess of 0.023 g/dscm (ca. 0.01 gr/dscf).

(2) Exhibits greater than 0 percent opacity.

(c) On and after the 60th day of achieving the maximum production rate at which the affected facility will be operated, but no later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere any fugitive emission from:

(1) Any individual truck unloading station, railcar unloading station, or railcar loading station, which exhibits greater than 5 percent opacity.

(2) Any grain handling operation which exhibits greater than 0 percent opacity.

(3) Any truck loading station which exhibits greater than 10 percent opacity.

(4) Any barge or ship loading station which exhibits greater than 20 percent opacity.

(d) The owner or operator of any barge or ship unloading station shall operate as follows:

(1) The unloading leg shall be enclosed from the top (including the receiving hopper) to the center line of the bottom pulley and ventilation to a control device shall be maintained on both sides of the leg and the grain receiving hopper.

(2) The total rate of air ventilated shall be at least 32.1 actual cubic meters per cubic meter of grain handling capacity (ca. 40 ft^3/bu).

(3) Rather than meet the requirements of paragraphs (d)(1) and (2) of this section the owner or operator may use other methods of emission control if it is demonstrated to the Administrator's satisfaction that they would reduce emissions of particulate matter to the same level or less.

§ 60.303 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (c) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.302 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration and the volumetric flow rate of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 1.70 dscm (60 dscf). The probe and filter holder shall be operated without heaters.

(2) Method 2 shall be used to determine the ventilation volumetric flow rate.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For Method 5, Method 17 may be used.

[54 FR 6674, Feb. 14, 1989]

§ 60.304 Modifications.

(a) The factor 6.5 shall be used in place of ''annual asset guidelines repair allowance percentage,'' to determine whether a capital expenditure as defined by § 60.2 has been made to an existing facility.

(b) The following physical changes or changes in the method of operation shall not by themselves be considered a modification of any existing facility:

(1) The addition of gravity loadout spouts to existing grain storage or grain transfer bins.

(2) The installation of automatic grain weighing scales.

(3) Replacement of motor and drive units driving existing grain handling equipment.

(4) The installation of permanent storage capacity with no increase in hourly grain handling capacity.

Subpart EE—Standards of Performance for Surface Coating of Metal Furniture

SOURCE: 47 FR 49287, Oct. 29, 1982, unless otherwise noted.

§ 60.310 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each metal furniture surface coating operation in which organic coatings are applied.

(b) This subpart applies to each affected facility identified in paragraph (a) of this section on which construction, modification, or reconstruction is commenced after November 28, 1980.

(c) Any owner or operator of a metal furniture surface coating operation that uses less than 3,842 liters of coating (as applied) per year and keeps purchase or inventory records or other data necessary to substantiate annual coating usage shall be exempt from all other provisions of this subpart. These records shall be maintained at the source for a period of at least 2 years.

[47 FR 49287, Oct. 29, 1982, as amended at 50 FR 18248, Apr. 30, 1985]

§ 60.311 Definitions and symbols.

(a) All terms used in this subpart not defined below are given the meaning in the Act and in subpart A of this part.

Bake oven means a device which uses heat to dry or cure coatings.

Dip coating means a method of applying coatings in which the part is submerged in a tank filled with the coatings.

Electrodeposition (EDP) means a method of applying coatings in which the part is submerged in a tank filled with the coatings and in which an electrical potential is used to enhance deposition of the coatings on the part.

Electrostatic spray application means a spray application method that uses an electrical potential to increase the transfer efficiency of the coatings.

Flash-off area means the portion of a surface coating operation between the coating application area and bake oven.

Flow coating means a method of applying coatings in which the part is carried through a chamber containing numerous nozzles which direct unatomized streams of coatings from many different angles onto the surface of the part.

Organic coating means any coating used in a surface coating operation, including dilution solvents, from which volatile organic compound emissions occur during the application or the curing process. For the purpose of this regulation, powder coatings are not included in this definition.

Powder coating means any surface coating which is applied as a dry powder and is fused into a continuous coating film through the use of heat.

Spray application means a method of applying coatings by atomizing and directing the atomized spray toward the part to be coated.

Surface coating operation means the system on a metal furniture surface coating line used to apply and dry or cure an organic coating on the surface of the metal furniture part or product. The surface coating operation may be a prime coat or a top coat operation and includes the coating application station(s), flash-off area, and curing oven.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of a part or product to the total amount of coating solids used.

VOC content means the proportion of a coating that is volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of coating solids.

VOC emissions means the mass of volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of applied coating solids, emitted from a metal furniture surface coating operation.

(b) All symbols used in this subpart not defined below are given the meaning in the Act and in subpart A of this part.

C_a=the VOC concentration in each gas stream leaving the control device and entering the atmosphere (parts per million by volume, as carbon)

C_b=the VOC concentration in each gas stream entering the control device (parts per million by volume, as carbon)

C_f=the VOC concentration in each gas stream emitted directly to the atmosphere (parts per million by volume, as carbon)

D_c=density of each coating, as received (kilograms per liter)

D_d=density of each diluent VOC-solvent (kilograms per liter)

D_r=density of VOC-solvent recovered by an emission control device (kilograms per liter)

E=VOC destruction efficiency of the control device (fraction)

F=the proportion of total VOC's emitted by an affected facility that enters the control device (fraction)

G=the volume-weighted average mass of VOC's in coatings consumed in a calendar month per unit volume of coating solids applied (kilograms per liter)

L_c=the volume of each coating consumed, as received (liters)

L_d=the volume of each diluent VOC-solvent added to coatings (liters)

L_r=the volume of VOC-solvent recovered by an emission control device (liters)

L_s=the volume of coating solids consumed (liters)

M_d=the mass of diluent VOC-solvent consumed (kilograms)

M_o=the mass of VOC's in coatings consumed, as received (kilograms)

M_r=the mass of VOC's recovered by an emission control device (kilograms)

N=the volume weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter)

Q_a=the volumetric flow rate of each gas stream leaving the control device and entering the atmosphere (dry standard cubic meters per hour)

Q_b=the volumetric flow rate of each gas stream entering the control device (dry standard cubic meters per hour)

Q_f=the volumetric flow rate of each gas stream emitted directly to the atmosphere (dry standard cubic meters per hour)

R=the overall VOC emission reduction achieved for an affected facility (fraction)

T=the transfer efficiency (fraction)

V_s=the proportion of solids in each coating (or input stream), as received (fraction by volume)

W_o=the proportion of VOC's in each coating (or input stream), as received (fraction by weight)

§ 60.312 Standard for volatile organic compounds (VOC).

(a) On and after the date on which the initial performance test required to be conducted by § 60.8(a) is completed, no owner or operator subject to the provisions of this subpart shall cause the discharge into the atmosphere of VOC emissions from any metal furniture surface coating operation in excess of 0.90 kilogram of VOC per liter of coating solids applied.

§ 60.313 Performance tests and compliance provisions.

(a) Section 60.8(d) and (f) do not apply to the performance test procedures required by this subpart.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each calendar month for each affected facility according to the procedures in this section.

(c) The owner or operator shall use the following procedures for determining monthly volume-weighted average emissions of VOC's in kilograms per liter of coating solids applied (G).

(1) An owner or operator shall use the following procedures for any affected facility which does not use a capture system and control device to comply with the emissions limit specified under § 60.312. The owner or operator shall determine the composition of the coatings by formulation data supplied by the manufacturer of the coating or by an analysis of each coating, as received, using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coating to determine the VOC content of coatings using Method 24. The owner or operator shall determine the volume of coating and the mass of VOC-solvent used for thinning purposes from company records on a monthly basis. If a common coating distribution system serves more than one affected facility or serves both affected and existing facilities, the owner or operator shall estimate the volume of coating used at each facility by using the average dry weight of coating and the surface area coated by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Calculate the volume-weighted average of the total mass of VOC's consumed per unit volume of coating solids applied (G) during each calendar month for each affected facility, except as provided under § 60.313(c)(2) and (c)(3). Each monthly calculation is considered a performance test. Except as provided in paragraph (c)(1)(iv) of this section, the volume-weighted average of the total mass of VOC's consumed per unit volume of coating solids applied (G) each calendar month will be determined by the following procedures.

(A) Calculate the mass of VOC's used (M_o+M_d) during each calendar month for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

($\Sigma L_{dj} D_{dj}$ will be 0 if no VOC solvent is added to the coatings, as received.)

Where: n is the number of different coatings used during the calendar month and m is the number of different diluent VOC-solvents used during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in each calendar month for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

Where: n is the number of different coatings used during the calendar month.

Select the appropriate transfer efficiency from Table 1. If the owner or operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiency values for application methods not listed below shall be determined by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the accuracy of the transfer efficiency claims.

TABLE 1—TRANSFER EFFICIENCIES

Application methods	Transfer efficiency (T)
Air atomized spray	0.25
Airless spray	.25
Manual electrostatic spray	.60
Nonrotational automatic electrostatic spray	.70
Rotating head electrostatic spray (manual and automatic)	.80
Dip coat and flow coat	.90
Electrodeposition	.95

Where more than one application method is used within a single surface coating operation, the owner or operator shall determine the composition and volume of each coating applied by each method through a means acceptable to the Administrator and compute the weighted average transfer efficiency by the following equation:

$$T = \frac{\sum_{i=1}^{n} L_{cik} V_{sik} T_k}{\sum_{k=1}^{p} L_s}$$

Where n is the number of coatings used and p is the number of application methods used.

(C) Calculate the volume-weighted average mass of VOC's consumed per unit volume of coating solids applied (G) during the calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s T}$$

(ii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during the calendar month for each affected facility by the following equation:

N=G

(iii) Where the volume-weighted average mass of VOC discharged to the atmosphere per unit volume of coating solids applied (N) is less than or equal to 0.90 kilogram per liter, the affected facility is in compliance.

(iv) If each individual coating used by an affected facility has a VOC content, as received, which when divided by the lowest transfer efficiency at which the coating is applied, results in a value equal to or less than 0.90 kilogram per liter, the affected facility is in compliance provided no VOC's are added to the coatings during distribution or application.

(2) An owner or operator shall use the following procedures for any affected facility that uses a capture system and a control device that destroys VOC's (e.g., incinerator) to comply with the emission limit specified under §60.312.

(i) Determine the overall reduction efficiency (R) for the capture system and control device. For the initial performance test the overall reduction efficiency (R) shall be determined as prescribed in paragraphs (c)(2)(i) (A), (B), and (C) of this section. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test providing control device and capture system operating conditions have not changed. The procedure in, paragraphs (c)(2)(i) (A), (B), and (C), of this section, shall be repeated when directed by the Administrator or when the owner or operator elects to operate the control device or capture system at conditions different from the initial performance test.

(A) Determine the fraction (F) of total VOC's emitted by an affected facility that enters the control device using the following equation:

$$F = \frac{\sum_{i=1}^{n} C_{bi} Q_{bi}}{\sum_{i=1}^{n} C_{bi} Q_{bi} + \sum_{j=1}^{m} C_{fj} Q_{fj}}$$

Where

n is the number of gas streams entering the control device and

m is the number of gas streams emitted directly to the atmosphere.

(B) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}}$$

Where:

n is the number of gas streams entering the control device, and

m is the number of gas streams leaving the contol device and entering the atmosphere.

(C) Determine overall reduction efficiency (R) using the following equation:

$R = EF$

(ii) Calculate the volume-weighted average of the total mass of VOC's per unit volume of coating solids applied (G) during each calendar month for each affected facility using equations in paragraphs (c)(1)(i) (A), (B), and (C) of this section.

(iii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during each calendar month by the following equation:

$N = G(1 - R)$

(iv) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to 0.90 kilogram per liter of coating solids applied, the affected facility is in compliance. Each monthly calculation is a performance test.

(3) An owner or operator shall use the following procedure for any affected facility which uses a control device that recovers the VOC's (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.312.

(i) Calculate the total mass of VOC's consumed (M_o+M_d) and the volume-weighted average of the total mass of VOC's per unit volume of coating solids applied (G) during each calendar month for each affected facility using equations in paragraph (c)(1)(i) (A), (B), and (C) of this section.

(ii) Calculate the total mass of VOC's recovered (M_r) during each calendar month using the following equation:

$M_r = L_r D_r$

(iii) Calculate overall reduction efficiency of the control device (R) for each calendar month for each affected facility using the following equation:

$$R = \frac{M_r}{M_o + M_d}$$

(iv) Calculate the volume-weighted average mass of VOC's emitted to the atmosphere (N) for each calendar month for each affected facility using equation in paragraph (c)(2)(iii) of this section.

(v) If the weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to 0.90 kilogram per liter of coating solids applied, the affected facility is in compliance. Each monthly calculation is a performance test.

[47 FR 49287, Oct. 29, 1982, as amended at 65 FR 61759, Oct. 17, 2000]

§ 60.314 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility which uses a capture system and an incinerator to comply with the emission limits specified under § 60.312 shall install, calibrate, maintain, and operate temperature measurement devices according to the following procedures:

(1) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, a temperature measurement device shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Each temperature measurement device shall be installed, calibrated, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of 0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5 °C.

(3) Each temperature measurement device shall be equipped with a recording device so that a permanent continuous record is produced.

(b) The owner or operator of an affected facility which uses a capture system and a solvent recovery system to comply with the emission limits specified under § 60.312 shall install the equipment necessary to determine the total volume of VOC-solvent recovered daily.

§ 60.315 Reporting and recordkeeping requirements.

(a) The reporting requirements of § 60.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under § 60.8(a):

(1) Except as provided in paragraph (a)(2) of this section, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for a period of one calendar month from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of § 60.313(c)(1)(iv), a list of the coatings used during a period of one calendar month, the VOC content of each coating calculated from data determined using Method 24 or supplied by the manufacturer of the coating, and the minimum transfer efficiency of any coating application equipment used during the month.

(3) For each affected facility where compliance is achieved through the use of an incineration system, the following additional information will be reported:

(i) The proportion of total VOC's emitted that enters the control device (F),

(ii) The VOC reduction efficiency of the control device (E),

(iii) The average combustion temperature (or the average temperature upstream and downstream of the catalyst bed), and

(iv) A description of the method used to establish the amount of VOC's captured and sent to the incinerator.

(4) For each affected facility where compliance is achieved through the use of a solvent recovery system, the following additional information will be reported:

(i) The volume of VOC-solvent recovered (L_r), and

(ii) The overall VOC emission reduction achieved (R).

(b) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the total mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under § 60.312. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit at the frequency specified in § 60.7(c) the following:

(1) Where compliance with § 60.312 is achieved through the use of thermal incineration, each 3-hour period when metal furniture is being coated during which the average temperature of the device was more than 28 °C below the average temperature of the device during the most recent performance test at which destruction efficiency was determined as specified under § 60.313.

(2) Where compliance with § 60.312 is achieved through the use of catalytic incineration, each 3-hour period when metal furniture is being coated during

which the average temperature of the device immediately before the catalyst bed is more than 28 °C below the average temperature of the device immediately before the catalyst bed during the most recent performance test at which destruction efficiency was determined as specified under § 60.313. Additionally, when metal furniture is being coated, all 3-hour periods during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference across the catalyst bed during the most recent performance test at which destruction efficiency was determined as specified under § 60.313 will be recorded.

(3) For thermal and catalytic incinerators, if no such periods as described in paragraphs (c)(1) and (c)(2) of this section occur, the owner or operator shall state this in the report.

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine VOC emissions from each affected facility. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain, at the source, daily records of the incinerator combustion chamber temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed. Where compliance is achieved through the use of a solvent recovery system, the owner or operator shall maintain at the source daily records of the amount of solvent recovered by the system for each affected facility.

[47 FR 49287, Oct. 29, 1982, as amended at 55 FR 51383, Dec. 13, 1990; 65 FR 61759, Oct. 17, 2000]

§ 60.316 Test methods and procedures.

(a) The reference methods in appendix A to this part except as provided under § 60.8(b) shall be used to determine compliance with § 60.312 as follows:

(1) Method 24, or coating manufacturer's formulation data, for use in the determination of VOC content of each batch of coating as applied to the surface of the metal parts. In case of an inconsistency between the Method 24 results and the formulation data, the Method 24 results will govern.

(2) Method 25 for the measurement of VOC concentration.

(3) Method 1 for sample and velocity traverses.

(4) Method 2 for velocity and volumetric flow rate.

(5) Method 3 for gas analysis.

(6) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be at least a 1 liter sample in a 1 liter container taken at a point where the sample will be representative of the coating material as applied to the surface of the metal part.

(c) For Method 25, the minimum sampling time for each of 3 runs is 60 minutes and the minimum sample volume is 0.003 dry standard cubic meters except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(d) The Administrator will approve testing of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that testing of representative stacks yields results comparable to those that would be obtained by testing all stacks.

Subpart FF [Reserved]

Subpart GG—Standards of Performance for Stationary Gas Turbines

§ 60.330 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities: All stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on the lower heating value of the fuel fired.

(b) Any facility under paragraph (a) of this section which commences construction, modification, or reconstruction after October 3, 1977, is subject to the requirements of this part except as provided in paragraphs (e) and (j) of §60.332.

[44 FR 52798, Sept. 10, 1979, as amended at 52 FR 42434, Nov. 5, 1987; 65 FR 61759, Oct. 17, 2000]

§60.331 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Stationary gas turbine* means any simple cycle gas turbine, regenerative cycle gas turbine or any gas turbine portion of a combined cycle steam/electric generating system that is not self propelled. It may, however, be mounted on a vehicle for portability.

(b) *Simple cycle gas turbine* means any stationary gas turbine which does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or which does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

(c) *Regenerative cycle gas turbine* means any stationary gas turbine which recovers heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine.

(d) *Combined cycle gas turbine* means any stationary gas turbine which recovers heat from the gas turbine exhaust gases to heat water or generate steam.

(e) *Emergency gas turbine* means any stationary gas turbine which operates as a mechanical or electrical power source only when the primary power source for a facility has been rendered inoperable by an emergency situation.

(f) *Ice fog* means an atmospheric suspension of highly reflective ice crystals.

(g) *ISO standard day conditions* means 288 degrees Kelvin, 60 percent relative humidity and 101.3 kilopascals pressure.

(h) *Efficiency* means the gas turbine manufacturer's rated heat rate at peak load in terms of heat input per unit of power output based on the lower heating value of the fuel.

(i) *Peak load* means 100 percent of the manufacturer's design capacity of the gas turbine at ISO standard day conditions.

(j) *Base load* means the load level at which a gas turbine is normally operated.

(k) *Fire-fighting turbine* means any stationary gas turbine that is used solely to pump water for extinguishing fires.

(l) *Turbines employed in oil/gas production or oil/gas transportation* means any stationary gas turbine used to provide power to extract crude oil/natural gas from the earth or to move crude oil/ natural gas, or products refined from these substances through pipelines.

(m) A *Metropolitan Statistical Area* or *MSA* as defined by the Department of Commerce.

(n) *Offshore platform gas turbines* means any stationary gas turbine located on a platform in an ocean.

(o) *Garrison facility* means any permanent military installation.

(p) *Gas turbine model* means a group of gas turbines having the same nominal air flow, combuster inlet pressure, combuster inlet temperature, firing temperature, turbine inlet temperature and turbine inlet pressure.

(q) *Electric utility stationary gas turbine* means any stationary gas turbine constructed for the purpose of supplying more than one-third of its potential electric output capacity to any utility power distribution system for sale.

(r) *Emergency fuel* is a fuel fired by a gas turbine only during circumstances, such as natural gas supply curtailment or breakdown of delivery system, that make it impossible to fire natural gas in the gas turbine.

[44 FR 52798, Sept. 10, 1979, as amended at 47 FR 3770, Jan. 27, 1982; 65 FR 61759, Oct. 17, 2000]

§60.332 Standard for nitrogen oxides.

(a) On and after the date on which the performance test required by §60.8 is completed, every owner or operator subject to the provisions of this subpart as specified in paragraphs (b), (c), and (d) of this section shall comply with one of the following, except as provided in paragraphs (e), (f), (g), (h), (i), (j), (k), and (l) of this section.

(1) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine,

any gases which contain nitrogen oxides in excess of:

$$\mathrm{STD} = 0.0075 \frac{(14.4)}{\mathrm{Y}} + \mathrm{F}$$

where:

STD=allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y=manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F=NO_x emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of this section.

(2) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine, any gases which contain nitrogen oxides in excess of:

$$\mathrm{STD} = 0.0150 \frac{(14.4)}{\mathrm{Y}} + \mathrm{F}$$

where:

STD=allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y=manufacturer's rated heat rate at manufacturer's rated peak load (kilojoules per watt hour), or actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F=NO_x emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of this section.

(3) F shall be defined according to the nitrogen content of the fuel as follows:

Fuel-bound nitrogen (percent by weight)	F (NO_x percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	0.04(N)
$0.1 < N \leq 0.25$	0.004+0.0067(N–0.1)
$N > 0.25$	0.005

where:

N=the nitrogen content of the fuel (percent by weight).

or:

Manufacturers may develop custom fuel-bound nitrogen allowances for each gas turbine model they manufacture. These fuel-bound nitrogen allowances shall be substantiated with data and must be approved for use by the Administrator before the initial performance test required by § 60.8. Notices of approval of custom fuel-bound nitrogen allowances will be published in the FEDERAL REGISTER.

(b) Electric utility stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired shall comply with the provisions of paragraph (a)(1) of this section.

(c) Stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hour) but less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired, shall comply with the provisions of paragraph (a)(2) of this section.

(d) Stationary gas turbines with a manufacturer's rated base load at ISO conditions of 30 megawatts or less except as provided in § 60.332(b) shall comply with paragraph (a)(2) of this section.

(e) Stationary gas turbines with a heat input at peak load equal to or greater than 10.7 gigajoules per hour (10 million Btu/hour) but less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) based on the lower heating value of the fuel fired and that have commenced construction prior to October 3, 1982 are exempt from paragraph (a) of this section.

(f) Stationary gas turbines using water or steam injection for control of NO_x emissions are exempt from paragraph (a) when ice fog is deemed a traffic hazard by the owner or operator of the gas turbine.

(g) Emergency gas turbines, military gas turbines for use in other than a garrison facility, military gas turbines installed for use as military training facilities, and fire fighting gas turbines are exempt from paragraph (a) of this section.

(h) Stationary gas turbines engaged by manufacturers in research and development of equipment for both gas turbine emission control techniques and gas turbine efficiency improvements are exempt from paragraph (a) on a case-by-case basis as determined by the Administrator.

(i) Exemptions from the requirements of paragraph (a) of this section will be granted on a case-by-case basis as determined by the Administrator in specific geographical areas where mandatory water restrictions are required by governmental agencies because of drought conditions. These exemptions will be allowed only while the mandatory water restrictions are in effect.

(j) Stationary gas turbines with a heat input at peak load greater than 107.2 gigajoules per hour that commenced construction, modification, or reconstruction between the dates of October 3, 1977, and January 27, 1982, and were required in the September 10, 1979, FEDERAL REGISTER (44 FR 52792) to comply with paragraph (a)(1) of this section, except electric utility stationary gas turbines, are exempt from paragraph (a) of this section.

(k) Stationary gas turbines with a heat input greater than or equal to 10.7 gigajoules per hour (10 million Btu/hour) when fired with natural gas are exempt from paragraph (a)(2) of this section when being fired with an emergency fuel.

(l) Regenerative cycle gas turbines with a heat input less than or equal to 107.2 gigajoules per hour (100 million Btu/hour) are exempt from paragraph (a) of this section.

[44 FR 52798, Sept. 10, 1979, as amended at 47 FR 3770, Jan. 27, 1982; 65 FR 61759, Oct. 17, 2000]

§ 60.333 Standard for sulfur dioxide.

On and after the date on which the performance test required to be conducted by § 60.8 is completed, every owner or operator subject to the provision of this subpart shall comply with one or the other of the following conditions:

(a) No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis.

(b) No owner or operator subject to the provisions of this subpart shall burn in any stationary gas turbine any fuel which contains sulfur in excess of 0.8 percent by weight.

[44 FR 52798, Sept. 10, 1979]

§ 60.334 Monitoring of operations.

(a) The owner or operator of any stationary gas turbine subject to the provisions of this subpart and using water injection to control NO_x emissions shall install and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine. This system shall be accurate to within ±5.0 percent and shall be approved by the Administrator.

(b) The owner or operator of any stationary gas turbine subject to the provisions of this subpart shall monitor sulfur content and nitrogen content of the fuel being fired in the turbine. The frequency of determination of these values shall be as follows:

(1) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.

(2) If the turbine is supplied its fuel without intermediate bulk storage the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with paragraph (b) of this section.

(c) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as follows:

(1) *Nitrogen oxides.* Any one-hour period during which the average water-to-fuel ratio, as measured by the continuous monitoring system, falls below the water-to-fuel ratio determined to demonstrate compliance with § 60.332 by the performance test required in § 60.8 or any period during which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the performance test required in § 60.8. Each report shall include the average water-to-fuel ratio,

average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under § 60.335(a).

(2) *Sulfur dioxide.* Any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeds 0.8 percent.

(3) *Ice fog.* Each period during which an exemption provided in § 60.332(f) is in effect shall be reported in writing to the Administrator quarterly. For each period the ambient conditions existing during the period, the date and time the air pollution control system was deactivated, and the date and time the air pollution control system was reactivated shall be reported. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter.

(4) *Emergency fuel.* Each period during which an exemption provided in § 60.332(k) is in effect shall be included in the report required in § 60.7(c). For each period, the type, reasons, and duration of the firing of the emergency fuel shall be reported.

[44 FR 52798, Sept. 10, 1979, as amended at 47 FR 3770, Jan. 27, 1982; 65 FR 61759, Oct. 17, 2000]

§ 60.335 Test methods and procedures.

(a) To compute the nitrogen oxides emissions, the owner or operator shall use analytical methods and procedures that are accurate to within 5 percent and are approved by the Administrator to determine the nitrogen content of the fuel being fired.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (f) of this section.

(c) The owner or operator shall determine compliance with the nitrogen oxides and sulfur dioxide standards in §§ 60.332 and 60.333(a) as follows:

(1) The nitrogen oxides emission rate (NO_x) shall be computed for each run using the following equation:

$$NO_x=(NO_{xo})\ (P_r/P_o)^{0.5}\ e^{19(Ho—0.00633)}\ (288°K/T_a)^{1.53}$$

where:

NO_X = emission rate of NO_X at 15 percent O2 and ISO standard ambient conditions, ppm by volume.

NO_X = observed NO_X concentration, ppm by volume at 15 percent O_2.

P_r=reference combustor inlet absolute pressure at 101.3 kilopascals ambient pressure, mm Hg.

P_o=observed combustor inlet absolute pressure at test, mm Hg.

H_o=observed humidity of ambient air, g H_2O/g air.

e=transcendental constant, 2.718.

T_a=ambient temperature, °K.

(2) The monitoring device of § 60.334(a) shall be used to determine the fuel consumption and the water-to-fuel ratio necessary to comply with § 60.332 at 30, 50, 75, and 100 percent of peak load or at four points in the normal operating range of the gas turbine, including the minimum point in the range and peak load. All loads shall be corrected to ISO conditions using the appropriate equations supplied by the manufacturer.

(3) Method 20 shall be used to determine the nitrogen oxides, sulfur dioxide, and oxygen concentrations. The span values shall be 300 ppm of nitrogen oxide and 21 percent oxygen. The NO_x emissions shall be determined at each of the load conditions specified in paragraph (c)(2) of this section.

(d) The owner or operator shall determine compliance with the sulfur content standard in § 60.333(b) as follows: ASTM D 2880–71, 78, or 96 shall be used to determine the sulfur content of liquid fuels and ASTM D 1072–80 or 90 (Reapproved 1994), D 3031–81, D 4084–82 or 94, or D 3246–81, 92, or 96 shall be used for the sulfur content of gaseous fuels (incorporated by reference-see § 60.17). The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels of sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Administrator.

(e) To meet the requirements of § 60.334(b), the owner or operator shall use the methods specified in paragraphs (a) and (d) of this section to determine the nitrogen and sulfur contents of the fuel being burned. The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency.

(f) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) Instead of using the equation in paragraph (c)(1) of this section, manufacturers may develop ambient condition correction factors to adjust the nitrogen oxides emission level measured by the performance test as provided in §60.8 to ISO standard day conditions. These factors are developed for each gas turbine model they manufacture in terms of combustion inlet pressure, ambient air pressure, ambient air humidity, and ambient air temperature. They shall be substantiated with data and must be approved for use by the Administrator before the initial performance test required by §60.8. Notices of approval of custom ambient condition correction factors will be published in the FEDERAL REGISTER.

[54 FR 6675, Feb. 14, 1989, as amended at 54 FR 27016, June 27, 1989; 65 FR 61760, Oct. 17, 2000]

Subpart HH—Standards of Performance for Lime Manufacturing Plants

SOURCE: 49 FR 18080, Apr. 26, 1984, unless otherwise noted.

§ 60.340 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to each rotary lime kiln used in the manufacture of lime.

(b) The provisions of this subpart are not applicable to facilities used in the manufacture of lime at kraft pulp mills.

(c) Any facility under paragraph (a) of this section that commences construction or modification after May 3, 1977, is subject to the requirements of this subpart.

§ 60.341 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in the General Provisions.

(a) *Lime manufacturing plant* means any plant which uses a rotary lime kiln to produce lime product from limestone by calcination.

(b) *Lime product* means the product of the calcination process including, but not limited to, calcitic lime, dolomitic lime, and dead-burned dolomite.

(c) *Positive-pressure fabric filter* means a fabric filter with the fans on the upstream side of the filter bags.

(d) *Rotary lime kiln* means a unit with an inclined rotating drum that is used to produce a lime product from limestone by calcination.

(e) *Stone feed* means limestone feedstock and millscale or other iron oxide additives that become part of the product.

§ 60.342 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any rotary lime kiln any gases which:

(1) Contain particulate matter in excess of 0.30 kilogram per megagram (0.60 lb/ton) of stone feed.

(2) Exhibit greater than 15 percent opacity when exiting from a dry emission control device.

§ 60.343 Monitoring of emissions and operations.

(a) The owner or operator of a facility that is subject to the provisions of this subpart shall install, calibrate, maintain, and operate a continuous monitoring system, except as provided in paragraphs (b) and (c) of this section, to monitor and record the opacity of a representative portion of the gases discharged into the atmosphere from any rotary lime kiln. The span of this system shall be set at 40 percent opacity.

(b) The owner or operator of any rotary lime kiln having a control device with a multiple stack exhaust or a roof monitor may, in lieu of the continuous opacity monitoring requirement of §60.343(a), monitor visible emissions at least once per day of operation by using a certified visible emissions observer who, for each site where visible emissions are observed, will perform three Method 9 tests and record the results. Visible emission observations shall occur during normal operation of the rotary lime kiln at least once per day. For at least three 6-minute periods, the opacity shall be recorded for any point(s) where visible emissions are observed, and the corresponding feed rate of the kiln shall also be recorded. Records shall be maintained of any 6-minute average that is in excess of the emissions specified in § 60.342(a) of this subpart.

(c) The owner or operator of any rotary lime kiln using a wet scrubbing emission control device subject to the provisions of this subpart shall not be required to monitor the opacity of the gases discharged as required in paragraph (a) of this section, but shall install, calibrate, maintain, operate, and record the resultant information from the following continuous monitoring devices:

(1) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be accurate within ±250 pascals (one inch of water).

(2) A monitoring device for continuous measurement of the scrubbing liquid supply pressure to the control device. The monitoring device must be accurate within ±5 percent of the design scrubbing liquid supply pressure.

(d) For the purpose of conducting a performance test under § 60.8, the owner or operator of any lime manufacturing plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a device for measuring the mass rate of stone feed to any affected rotary lime kiln. The measuring device used must be accurate to within ±5 percent of the mass rate over its operating range.

(e) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as all 6-minute periods during which the average opacity of the visible emissions from any lime kiln subject to paragraph (a) of this subpart is greater than 15 percent or, in the case of wet scrubbers, any period in which the scrubber pressure drop or scrubbing liquid supply pressure is greater than 30 percent below that established during the performance test. If visible emission observations are made according to paragraph (b) of this section, reports of excess emissions shall be submitted semiannually.

[49 FR 18080, Apr. 26, 1984, as amended at 52 FR 4773, Feb. 17, 1987; 54 FR 6675, Feb. 14, 1989; 65 FR 61760, Oct. 17, 2000]

§ 60.344 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.342(a) as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\ Q_{sd})/PK)$$

where:

E=emission rate of particulate matter, kg/Mg (1b/ton) of stone feed.

c_s=concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=stone feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg (7000 gr/lb).

(2) Method 5 shall be used at negative-pressure fabric filters and other types of control devices and Method 5D shall be used at positive-pressure fabric filters to determine the particulate matter concentration (c_s) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf).

(3) The monitoring device of § 60.343(d) shall be used to determine the stone feed rate (P) for each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) During the particulate matter run, the owner or operator shall use the monitoring devices in § 60.343(c)(1) and (2) to determine the average pressure loss of the gas stream through the scrubber and the average scrubbing liquid supply pressure.

[54 FR 6675, Feb. 14, 1989, as amended at 65 FR 61760, Oct. 17, 2000]

Subpart KK—Standards of Performance for Lead-Acid Battery Manufacturing Plants

SOURCE: 47 FR 16573, Apr. 16, 1982, unless otherwise noted.

§60.370 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the affected facilities listed in paragraph (b) of this section at any lead-acid battery manufacturing plant that produces or has the design capacity to produce in one day (24 hours) batteries containing an amount of lead equal to or greater than 5.9 Mg (6.5 tons).

(b) The provisions of this subpart are applicable to the following affected facilities used in the manufacture of lead-acid storage batteries:

(1) Grid casting facility.

(2) Paste mixing facility.

(3) Three-process operation facility.

(4) Lead oxide manufacturing facility.

(5) Lead reclamation facility.

(6) Other lead-emitting operations.

(c) Any facility under paragraph (b) of this section the construction or modification of which is commenced after January 14, 1980, is subject to the requirements of this subpart.

§60.371 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

(a) *Grid casting facility* means the facility which includes all lead melting pots and machines used for casting the grid used in battery manufacturing.

(b) *Lead-acid battery manufacturing plant* means any plant that produces a storage battery using lead and lead compounds for the plates and sulfuric acid for the electrolyte.

(c) *Lead oxide manufacturing facility* means a facility that produces lead oxide from lead, including product recovery.

(d) *Lead reclamation facility* means the facility that remelts lead scrap and casts it into lead ingots for use in the battery manufacturing process, and which is not a furnace affected under subpart L of this part.

(e) *Other lead-emitting operation* means any lead-acid battery manufacturing plant operation from which lead emissions are collected and ducted to the atmosphere and which is not part of a grid casting, lead oxide manufacturing, lead reclamation, paste mixing, or three-process operation facility, or a furnace affected under subpart L of this part.

(f) *Paste mixing facility* means the facility including lead oxide storage, conveying, weighing, metering, and charging operations; paste blending, handling, and cooling operations; and plate pasting, takeoff, cooling, and drying operations.

(g) *Three-process operation facility* means the facility including those processes involved with plate stacking, burning or strap casting, and assembly of elements into the battery case.

§60.372 Standards for lead.

(a) On and after the date on which the performance test required to be conducted by §60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any grid casting facility any gases that contain lead in excess of 0.40 milligram of lead per dry standard cubic meter of exhaust (0.000175 gr/dscf).

(2) From any paste mixing facility any gases that contain in excess of 1.00 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

(3) From any three-process operation facility any gases that contain in excess of 1.00 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

(4) From any lead oxide manufacturing facility any gases that contain in excess of 5.0 milligrams of lead per kilogram of lead feed (0.010 lb/ton).

(5) From any lead reclamation facility any gases that contain in excess of 4.50 milligrams of lead per dry standard cubic meter of exhaust (0.00197 gr/dscf).

(6) From any other lead-emitting operation any gases that contain in excess of 1.00 milligram of lead per dry standard cubic meter of exhaust (0.000437 gr/dscf).

(7) From any affected facility other than a lead reclamation facility any gases with greater than 0 percent opacity (measured according to Method 9 and rounded to the nearest whole percentage).

(8) From any lead reclamation facility any gases with greater than 5 percent opacity (measured according to Method 9 and rounded to the nearest whole percentage).

(b) When two or more facilities at the same plant (except the lead oxide manufacturing facility) are ducted to a common control device, an equivalent standard for the total exhaust from the commonly controlled facilities shall be determined as follows:

$$S_e = \sum_{a=1}^{N} S_a \left(Q_{sd_a} / Q_{sd_T} \right)$$

Where:

S_e=is the equivalent standard for the total exhaust stream.

S_a=is the actual standard for each exhaust stream ducted to the control device.

N=is the total number of exhaust streams ducted to the control device.

Q_{sda}=is the dry standard volumetric flow rate of the effluent gas stream from each facility ducted to the control device.

Q_{sdT}=is the total dry standard volumetric flow rate of all effluent gas streams ducted to the control device.

[47 FR 16573, Apr. 16, 1982, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.373 Monitoring of emissions and operations.

The owner or operator of any lead-acid battery manufacturing facility subject to the provisions of this subpart and controlled by a scrubbing system(s) shall install, calibrate, maintain, and operate a monitoring device(s) that measures and records the pressure drop across the scrubbing system(s) at least once every 15 minutes. The monitoring device shall have an accuracy of ±5 percent over its operating range.

§ 60.374 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the lead standards in § 60.372, except § 60.372(a)(4), as follows:

(1) Method 12 shall be used to determine the lead concentration and, if applicable, the volumetric flow rate (Q_{sda}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(2) When different operations in a three-process operation facility are ducted to separate control devices, the lead emission concentration (C) from the facility shall be determined as follows:

$$C = \left[\sum_{a=1}^{n} \left(C_s Q_{sda} \right) \right] / \sum_{a=1}^{n} Q_{sda}$$

where:

C=concentration of lead emissions for the entire facility, mg/dscm (gr/dscf).

C_a=concentration of lead emissions from facility "a", mg/dscm (gr/dscf).

Q_{sda}=volumetric flow rate of effluent gas from facility "a", dscm/hr (dscf/hr).

N=total number of control devices to which separate operations in the facility are ducted.

(3) Method 9 and the procedures in § 60.11 shall be used to determine opacity. The opacity numbers shall be rounded off to the nearest whole percentage.

(c) The owner or operator shall determine compliance with the lead standard in § 60.372(a)(4) as follows:

(1) The emission rate (E) from lead oxide manufacturing facility shall be computed for each run using the following equation:

$$E = \left(\sum_{i=1}^{M} C_{Pbi} Q_{sdi} \right) / \left(PK \right)$$

where:

E=emission rate of lead, mg/kg (lb/ton) of lead charged.

C_{Pbi}=concentration of lead from emission point "i," mg/dscm (gr/dscf).
Q_{sdi}=volumetric flow rate of effluent gas from emission point "i," dscm/hr (sdcf/hr).
M=number of emission points in the affected facility.
P=lead feed rate to the facility, kg/hr (ton/hr).
K=conversion factor, 1.0 mg/mg (7000 gr/lb).

(2) Method 12 shall be used to determine the lead concentration (C_{Pb}) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The average lead feed rate (P) shall be determined for each run using the following equation:

$$P=N\ W/\Theta$$

where:
N=number of lead pigs (ingots) charged.
W=average mass of a pig, kg (ton).
Θ=duration of run, hr.

[54 FR 6675, Feb. 14, 1989, as amended at 65 FR 61760, Oct. 17, 2000]

Subpart LL—Standards of Performance for Metallic Mineral Processing Plants

SOURCE: 49 FR 6464, Feb. 21, 1984, unless otherwise noted.

§ 60.380 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities in metallic mineral processing plants: Each crusher and screen in open-pit mines; each crusher, screen, bucket elevator, conveyor belt transfer point, thermal dryer, product packaging station, storage bin, enclosed storage area, truck loading station, truck unloading station, railcar loading station, and railcar unloading station at the mill or concentrator with the following exceptions. All facilities located in underground mines are exempted from the provisions of this subpart. At uranium ore processing plants, all facilities subsequent to and including the beneficiation of uranium ore are exempted from the provisions of this subpart.

(b) An affected facility under paragraph (a) of this section that commences construction or modification after August 24, 1982, is subject to the requirements of this part.

§ 60.381 Definitions.

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in subpart A of this part.

Bucket elevator means a conveying device for metallic minerals consisting of a head and foot assembly that supports and drives an endless single or double strand chain or belt to which buckets are attached.

Capture system means the equipment used to capture and transport particulate matter generated by one or more affected facilities to a control device.

Control device means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities at a metallic mineral processing plant.

Conveyor belt transfer point means a point in the conveying operation where the metallic mineral or metallic mineral concentrate is transferred to or from a conveyor belt except where the metallic mineral is being transferred to a stockpile.

Crusher means a machine used to crush any metallic mineral and includes feeders or conveyors located immediately below the crushing surfaces. Crushers include, but are not limited to, the following types: jaw, gyratory, cone, and hammermill.

Enclosed storage area means any area covered by a roof under which metallic minerals are stored prior to further processing or loading.

Metallic mineral concentrate means a material containing metallic compounds in concentrations higher than naturally occurring in ore but requiring additional processing if pure metal is to be isolated. A metallic mineral concentrate contains at least one of the following metals in any of its oxidation states and at a concentration that contributes to the concentrate's commercial value: Aluminum, copper, gold, iron, lead, molybdenum, silver, titanium, tungsten, uranium, zinc, and zirconium. This definition shall not be construed as requiring that material containing metallic compounds be refined to a pure metal in order for the material to be considered a metallic mineral concentrate to be covered by the standards.

Metallic mineral processing plant means any combination of equipment that produces metallic mineral concentrates from ore. Metallic mineral processing commences with the mining of ore and includes all operations either up to and including the loading of wet or dry concentrates or solutions of metallic minerals for transfer to facilities at non-adjacent locations that will subsequently process metallic concentrates into purified metals (or other products), or up to and including all material transfer and storage operations that precede the operations that produce refined metals (or other products) from metallic mineral concentrates at facilities adjacent to the metallic mineral processing plant. This definition shall not be construed as requiring that mining of ore be conducted in order for the combination of equipment to be considered a metallic mineral processing plant. (See also the definition of *metallic mineral concentrate.*)

Process fugitive emissions means particulate matter emissions from an affected facility that are not collected by a capture system.

Product packaging station means the equipment used to fill containers with metallic compounds or metallic mineral concentrates.

Railcar loading station means that portion of a metallic mineral processing plant where metallic minerals or metallic mineral concentrates are loaded by a conveying system into railcars.

Railcar unloading station means that portion of a metallic mineral processing plant where metallic ore is unloaded from a railcar into a hopper, screen, or crusher.

Screen means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series and retaining oversize material on the mesh surfaces (screens).

Stack emissions means the particulate matter captured and released to the atmosphere through a stack, chimney, or flue.

Storage bin means a facility for storage (including surge bins and hoppers) of metallic minerals prior to further processing or loading.

Surface moisture means water that is not chemically bound to a metallic mineral or metallic mineral concentrate.

Thermal dryer means a unit in which the surface moisture content of a metallic mineral or a metallic mineral concentrate is reduced by direct or indirect contact with a heated gas stream.

Truck loading station means that portion of a metallic mineral processing plant where metallic minerals or metallic mineral concentrates are loaded by a conveying system into trucks.

Truck unloading station means that portion of a metallic mineral processing plant where metallic ore is unloaded from a truck into a hopper, screen, or crusher.

[49 FR 6464, Feb. 21, 1984, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.382 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an affected facility any stack emissions that:

(1) Contain particulate matter in excess of 0.05 grams per dry standard cubic meter (0.02 g/dscm).

(2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing emission control device.

(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from an affected facility any process fugitive emissions that exhibit greater than 10 percent opacity.

[49 FR 6464, Feb. 21, 1984, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.383 Reconstruction.

(a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital cost that would be required to construct a comparable new facility'' under § 60.15. Ore-contact surfaces are: Crushing surfaces; screen meshes, bars, and plates; conveyor belts; elevator buckets; and pan feeders.

(b) Under § 60.15, the ''fixed capital cost of the new components'' includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) that are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 24, 1982.

§ 60.384 Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the change in pressure of the gas stream through the scrubber for any affected facility using a wet scrubbing emission control device. The monitoring device must be certified by the manufacturer to be accurate within ±250 pascals (±1 inch water) gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

(b) The owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device for the continuous measurement of the scrubbing liquid flow rate to a wet scrubber for any affected facility using any type of wet scrubbing emission control device. The monitoring device must be certified by the manufacturer to be accurate within ±5 percent of design scrubbing liquid flow rate and must be calibrated on at least an annual basis in accordance with manufacturer's instructions.

§ 60.385 Recordkeeping and reporting requirements.

(a) The owner or operator subject to the provisions of this subpart shall conduct a performance test and submit to the Administrator a written report of the results of the test as specified in § 60.8(a).

(b) During the initial performance test of a wet scrubber, and at least weekly thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.

(c) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) or liquid flow rate differ by more than ±30 percent from the average obtained during the most recent performance test.

(d) The reports required under paragraph (c) shall be postmarked within 30 days following the end of the second and fourth calendar quarters.

(e) The requirements of this subsection remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with requirements established by the State.

[49 FR 6464, Feb. 21, 1984, as amended at 54 FR 6676, Feb. 14, 1989; 65 FR 61760, Oct. 17, 2000]

§ 60.386 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards § 60.382 as follows:

(1) Method 5 or 17 shall be used to determine the particulate matter concentration. The sample volume for each run shall be at least 1.70 dscm (60 dscf). The sampling probe and filter holder of Method 5 may be operated without heaters if the gas stream being sampled is at ambient temperature.

For gas streams above ambient temperature, the Method 5 sampling train shall be operated with a probe and filter temperature slightly above the effluent temperature (up to a maximum filter temperature of 121°C (250 °F)) in order to prevent water condensation on the filter.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity from stack emissions and process fugitive emissions. The observer shall read opacity only when emissions are clearly identified as emanating solely from the affected facility being observed.

(c) To comply with § 60.385(c), the owner or operator shall use the monitoring devices in § 60.384(a) and (b) to determine the pressure loss of the gas stream through the scrubber and scrubbing liquid flow rate at any time during each particulate matter run, and the average of the three determinations shall be computed.

[54 FR 6676, Feb. 14, 1989, as amended at 65 FR 61760, Oct. 17, 2000]

Subpart MM—Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations

SOURCE: 45 FR 85415, Dec. 24, 1980, unless otherwise noted.

§ 60.390 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to the following affected facilities in an automobile or light-duty truck assembly plant: each prime coat operation, each guide coat operation, and each topcoat operation.

(b) Exempted from the provisions of this subpart are operations used to coat plastic body components or all-plastic automobile or light-duty truck bodies on separate coating lines. The attachment of plastic body parts to a metal body before the body is coated does not cause the metal body coating operation to be exempted.

(c) The provisions of this subpart apply to any affected facility identified in paragraph (a) of this section that begins construction, reconstruction, or modification after October 5, 1979.

§ 60.391 Definitions.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

Applied coating solids means the volume of dried or cured coating solids which is deposited and remains on the surface of the automobile or light-duty truck body.

Automobile means a motor vehicle capable of carrying no more than 12 passengers.

Automobile and light-duty truck body means the exterior surface of an automobile or light-duty truck including hoods, fenders, cargo boxes, doors, and grill opening panels.

Bake oven means a device that uses heat to dry or cure coatings.

Electrodeposition (EDP) means a method of applying a prime coat by which the automobile or light-duty truck body is submerged in a tank filled with coating material and an electrical field is used to effect the deposition of the coating material on the body.

Electrostatic spray application means a spray application method that uses an electrical potential to increase the transfer efficiency of the coating solids. Electrostatic spray application can be used for prime coat, guide coat, or topcoat operations.

Flash-off area means the structure on automobile and light-duty truck assembly lines between the coating application system (dip tank or spray booth) and the bake oven.

Guide coat operation means the guide coat spray booth, flash-off area and bake oven(s) which are used to apply and dry or cure a surface coating between the prime coat and topcoat operation on the components of automobile and light-duty truck bodies.

Light-duty truck means any motor vehicle rated at 3,850 kilograms gross vehicle weight or less, designed mainly to transport property.

Plastic body means an automobile or light-duty truck body constructed of synthetic organic material.

Plastic body component means any component of an automobile or light-duty truck exterior surface constructed of synthetic organic material.

Prime coat operation means the prime coat spray booth or dip tank, flash-off area, and bake oven(s) which are used to apply and dry or cure the initial coating on components of automobile or light-duty truck bodies.

Purge or *line purge* means the coating material expelled from the spray system when clearing it.

Solids Turnover Ratio (R_T) means the ratio of total volume of coating solids that is added to the EDP system in a calendar month divided by the total volume design capacity of the EDP system.

Solvent-borne means a coating which contains five percent or less water by weight in its volatile fraction.

Spray application means a method of applying coatings by atomizing the coating material and directing the atomized material toward the part to be coated. Spray applications can be used for prime coat, guide coat, and topcoat operations.

Spray booth means a structure housing automatic or manual spray application equipment where prime coat, guide coat, or topcoat is applied to components of automobile or light-duty truck bodies.

Surface coating operation means any prime coat, guide coat, or topcoat operation on an automobile or light-duty truck surface coating line.

Topcoat operation means the topcoat spray booth, flash-off area, and bake oven(s) which are used to apply and dry or cure the final coating(s) on components of automobile and light-duty truck bodies.

Transfer efficiency means the ratio of the amount of coating solids transferred onto the surface of a part or product to the total amount of coating solids used.

VOC content means all volatile organic compounds that are in a coating expressed as kilograms of VOC per liter of coating solids.

Volume Design Capacity of EDP System (LE) means the total liquid volume that is contained in the EDP system (tank, pumps, recirculating lines, filters, etc.) at its designed liquid operating level.

Waterborne or *water reducible* means a coating which contains more than five weight percent water in its volatile fraction.

(b) The nomenclature used in this subpart has the following meanings:

C_{aj}=concentration of VOC (as carbon) in the effluent gas flowing through stack (j) leaving the control device (parts per million by volume),

C_{bi}=concentration of VOC (as carbon) in the effluent gas flowing through stack (i) entering the control device (parts per million by volume),

C_{fk}=concentration of VOC (as carbon) in the effluent gas flowing through exhaust stack (k) not entering the control device (parts per million by volume),

D_{ci}=density of each coating (i) as received (kilograms per liter),

D_{dj}=density of each type VOC dilution solvent (j) added to the coatings, as received (kilograms per liter),

D_r=density of VOC recovered from an affected facility (kilograms per liter),

E=VOC destruction or removal efficiency of the control device,

F=fraction of total VOC which is emitted by an affected facility that enters the control device,

G=volume weighted average mass of VOC per volume of applied solids (kilograms per liter),

L_{ci}=volume of each coating (i) consumed, as received (liters),

L_{cil} = Volume of each coating (i) consumed by each application method (l), as received (liters),

L_{dj}=volume of each type VOC dilution solvent (j) added to the coatings, as received (liters),

L_r=volume of VOC recovered from an affected facility (liters),

L_s=volume of solids in coatings consumed (liters),

L_E=the total volume of the EDP system (liters),

M_d=total mass of VOC in dilution solvent (kilograms),

M_0=total mass of VOC in coatings as received (kilograms),

M_r=total mass of VOC recovered from an affected facility (kilograms),

N=volume weighted average mass of VOC per volume of applied coating solids after the control device

$$\frac{\text{kilograms of VOC}}{\text{liter of applied solids}},$$

Q_{aj}=volumetric flow rate of the effluent gas flowing through stack (j) leaving the control device (dry standard cubic meters per hour),

Q_{bi}=volumetric flow rate of the effluent gas flowing through stack (i) entering the control device (dry standard cubic meters per hour),

Q_{fk}=volumetric flow rate of the effluent gas flowing through exhaust stack (k) not entering the control device (dry standard cubic meters per hour),

T=overall transfer efficiency,

T_l=transfer efficiency for application method (*l*),

V_{si}=proportion of solids by volume in each coating (i) as received

$$\frac{\text{liter solids}}{\text{liter coating}}, \text{and}$$

W_{oi}=proportion of VOC by weight in each coating (i), as received

$$\frac{\text{kilograms VOC}}{\text{kilograms coating}}$$

[45 FR 85415, Dec. 24, 1980, as amended at 59 FR 51386, Oct. 11, 1994; 65 FR 61760, Oct. 17, 2000]

§ 60.392 Standards for volatile organic compounds

On and after the date on which the initial performance test required by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge into the atmosphere from any affected facility VOC emissions in excess of:

(a) Prime Coat Operation. (1) For each EDP prime coat operation:

(i) 0.17 kilogram of VOC per liter of applied coating solids when R_T is 0.16 or greater.

(ii) $0.17 \times 350^{(0.160-R_T)}$ kg of VOC per liter of applied coating solids when R_T is greater than or equal to 0.040 and less than 0.160.

(iii) When R_T is less than 0.040, there is no emission limit.

(2) For each nonelectrodeposition prime coat operation: 0.17 kilogram of VOC per liter of applied coating solids.

(b) 1.40 kilograms of VOC per liter of applied coating solids from each guide coat operation.

(c) 1.47 kilograms of VOC per liter of applied coating solids from each topcoat operation.

[45 FR 85415, Dec. 24, 1980, as amended at 59 FR 51386, Oct. 11, 1994]

§ 60.393 Performance test and compliance provisions.

(a) Section 60.8 (d) and (f) do not apply to the performance test procedures required by this section.

(b) The owner or operator of an affected facility shall conduct an initial performance test in accordance with § 60.8(a) and thereafter for each calendar month for each affected facility according to the procedures in this section.

(c) The owner or operator shall use the following procedures for determining the monthly volume weighted average mass of VOC emitted per volume of applied coating solids.

(1) The owner or operator shall use the following procedures for each affected facility which does not use a capture system and a control device to comply with the applicable emission limit specified under § 60.392.

(i) Calculate the volume weighted average mass of VOC per volume of applied coating solids for each calendar month for each affected facility. The owner or operator shall determine the composition of the coatings by formulation data supplied by the manufacturer of the coating or from data determined by an analysis of each coating, as received, by Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coating to determine data used in the calculation of the VOC content of coatings by Method 24 or an equivalent or alternative method. The owner or operator shall determine from company records on a monthly basis the volume of coating consumed, as received, and the mass of solvent used for thinning purposes. The volume weighted average of the total mass of VOC per volume of coating solids used each calendar month will be determined by the following procedures.

(A) Calculate the mass of VOC used in each calendar month for each affected facility by the following equation where ‘‘n’’ is the total number of coatings used and ‘‘m’’ is the total number of VOC solvents used:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

[$\Sigma L_{dj} D_{dj}$ will be zero if no VOC solvent is added to the coatings, as received].

(B) Calculate the total volume of coating solids used in each calendar month for each affected facility by the following equation where "n" is the total number of coatings used:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

(C) Select the appropriate transfer efficiency (T) from the following tables for each surface coating operation:

Application method	Transfer efficiency
Air Atomized Spray (waterborne coating)	0.39
Air Atomized Spray (solvent-borne coating)	0.50
Manual Electrostatic Spray	0.75
Automatic Electrostatic Spray	0.95
Electrodeposition	1.00

The values in the table above represent an overall system efficiency which includes a total capture of purge. If a spray system uses line purging after each vehicle and does not collect any of the purge material, the following table shall be used:

Application method	Transfer efficiency
Air Atomized Spray (waterborne coating)	0.30
Air Atomized Spray (solvent-borne coating)	0.40
Manual Electrostatic Spray	0.62
Automatic Electrostatic Spray	0.75

If the owner or operator can justify to the Administrator's satisfaction that other values for transfer efficiencies are appropriate, the Administrator will approve their use on a case-by-case basis.

(*1*) When more than one application method (*l*) is used on an individual surface coating operation, the owner or operator shall perform an analysis to determine an average transfer efficiency by the following equation where "n" is the total number of coatings used and "p" is the total number of application methods:

$$T = \frac{\sum_{i=1}^{n} T_l V_{si} L_{cil}}{\sum_{l=1}^{p} L_s}$$

(D) Calculate the volume weighted average mass of VOC per volume of applied coating solids (G) during each calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s T}$$

(E) For each EDP prime coat operation, calculate the turnover ratio (R_T) by the following equation:

$$R_T = \frac{L_S}{L_E}, \text{ truncated after 3 decimal places.}$$

Then calculate or select the appropriate limit according to §60.392(a).

(ii) If the volume weighted average mass of VOC per volume of applied coating solids (G), calculated on a calendar month basis, is less than or equal to the applicable emission limit specified in §60.392, the affected facility is in compliance. Each monthly calculation is a performance test for the purpose of this subpart.

(2) The owner or operator shall use the following procedures for each affected facility which uses a capture system and a control device that destroys VOC (e.g., incinerator) to comply with the applicable emission limit specified under §60.392.

(i) Calculate the volume weighted average mass of VOC per volume of applied coating solids (G) during each calendar month for each affected facility as described under §60.393(c)(1)(i).

(ii) Calculate the volume weighted average mass of VOC per volume of applied solids emitted after the control device, by the following equation: $N=G[1-FE]$

(A) Determine the fraction of total VOC which is emitted by an affected facility that enters the control device by using the following equation where ''n'' is the total number of stacks entering the control device and ''p'' is the total number of stacks not connected to the control device:

$$\sum_{i=1}^{n}$$

If the owner can justify to the Administrator's satisfaction that another method will give comparable results, the Administrator will approve its use on a case-by-case basis.

(*1*) In subsequent months, the owner or operator shall use the most recently determined capture fraction for the performance test.

(B) Determines the destruction efficiency of the control device using values of the volumetric flow rate of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation where ''n'' is the total number of stacks entering the control device and ''m'' is the total number of stacks leaving the control device:

$$E=\frac{\sum_{i=1}^{n} Q_{bi}\ C_{bi} - \sum_{j=1}^{m} Q_{aj}\ C_{aj}}{\sum_{i=1}^{n} Q_{bi}\ C_{bi}}$$

(*1*) In subsequent months, the owner or operator shall use the most recently determined VOC destruction efficiency for the performance test.

(C) If an emission control device controls the emissions from more than one affected facility, the owner or operator shall measure the VOC concentration (C_{bi}) in the effluent gas entering the control device (in parts per million by volume) and the volumetric flow rate (Q_{bi}) of the effluent gas (in dry standard cubic meters per hour) entering the device through each stack. The destruction or removal efficiency determined using these data shall be applied to each affected facility served by the control device.

(iii) If the volume weighted average mass of VOC per volume of applied solids emitted after the control device (N) calculated on a calendar month basis is less than or equal to the applicable emission limit specified in § 60.392, the affected facility is in compliance. Each monthly calculation is a performance test for the purposes of this subpart.

(3) The owner or operator shall use the following procedures for each affected facility which uses a capture system and a control device that recovers the VOC (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.392.

(i) Calculate the mass of VOC (M_o+M_d) used during each calendar month for each affected facility as described under § 60.393(c)(1)(i).

(ii) Calculate the total volume of coating solids (L_s) used in each calendar month for each affected facility as described under § 60.393(c)(1)(i).

(iii) Calculate the mass of VOC recovered (M_r) each calendar month for each affected facility by the following equation: $M_r=L_r\ D_r$

(iv) Calculate the volume weighted average mass of VOC per volume of applied coating solids emitted after the control device during a calendar month by the following equation:

$$N=\frac{M_o+M_d-M_r}{L_sT}$$

(v) If the volume weighted average mass of VOC per volume of applied solids emitted after the control device (N) calculated on a calendar month basis is less than or equal to the applicable emission limit specified in § 60.392, the affected facility is in compliance. Each monthly calculation is a performance test for the purposes of this subpart.

[45 FR 85415, Dec. 24, 1980, as amended at 59 FR 51387, Oct. 11, 1994; 65 FR 61760, Oct. 17, 2000]

§ 60.394 Monitoring of emissions and operations.

The owner or operator of an affected facility which uses an incinerator to comply with the emission limits specified under §60.392 shall install, calibrate, maintain, and operate temperature measurement devices as prescribed below:

(a) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, a temperature measurement device shall be installed in the gas stream immediately before and after the catalyst bed.

(b) Each temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±5 percent of the temperature being measured expressed in degrees Celsius or ±2.5 °C.

(c) Each temperature measurement device shall be equipped with a recording device so that a permanent record is produced.

§60.395 Reporting and recordkeeping requirements.

(a) Each owner or operator of an affected facility shall include the data outlined in paragraphs (a)(1) and (2) in the initial compliance report required by §60.8.

(1) The owner or operator shall report the volume weighted average mass of VOC per volume of applied coating solids for each affected facility.

(2) Where compliance is achieved through the use of incineration, the owner or operator shall include the following additional data in the control device initial performance test requried by §60.8(a) or subsequent performance tests at which destruction efficiency is determined: the combustion temperature (or the gas temperature upstream and downstream of the catalyst bed), the total mass of VOC per volume of applied coating solids before and after the incinerator, capture efficiency, the destruction efficiency of the incinerator used to attain compliance with the applicable emission limit specified in §60.392 and a description of the method used to establish the fraction of VOC captured and sent to the control device.

(b) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the total mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under §60.392. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually. Where compliance is achieved through the use of a capture system and control device, the volume-weighted average after the control device should be reported.

(c) Where compliance with §60.392 is achieved through the use of incineration, the owner or operator shall continuously record the incinerator combustion temperature during coating operations for thermal incineration or the gas temperature upstream and downstream of the incinerator catalyst bed during coating operations for catalytic incineration. The owner or operator shall submit a written report at the frequency specified in §60.7(c) and as defined below.

(1) For thermal incinerators, every three-hour period shall be reported during which the average temperature measured is more than 28 °C less than the average temperature during the most recent control device performance test at which the destruction efficiency was determined as specified under §60.393.

(2) For catalytic incinerators, every three-hour period shall be reported during which the average temperature immediately before the catalyst bed, when the coating system is operational, is more than 28 °C less than the average temperature immediately before the catalyst bed during the most recent control device performance test at which destruction efficiency was determined as specified under §60.393. In addition, every three-hour period shall be reported each quarter during which the average temperature difference across the catalyst bed when the coating system is operational is less than 80 percent of the average temperature difference of the device during the

most recent control device performance test at which destruction efficiency was determined as specified under § 60.393.

(3) For thermal and catalytic incinerators, if no such periods occur, the owner or operator shall submit a negative report.

(d) The owner or operator shall notify the Administrator 30 days in advance of any test by Method 25.

[45 FR 85415, Dec. 24, 1980, as amended at 55 FR 51383, Dec. 13, 1990; 65 FR 61760, Oct. 17, 2000]

§ 60.396 Reference methods and procedures.

(a) The reference methods in appendix A to this part, except as provided in § 60.8 shall be used to conduct performance tests.

(1) Method 24 or an equivalent or alternative method approved by the Administrator shall be used for the determination of the data used in the calculation of the VOC content of the coatings used for each affected facility. Manufacturers' formulation data is approved by the Administrator as an alternative method to Method 24. In the event of dispute, Method 24 shall be the referee method.

(2) Method 25 or an equivalent or alternative method approved by the Administrator shall be used for the determination of the VOC concentration in the effluent gas entering and leaving the emission control device for each stack equipped with an emission control device and in the effluent gas leaving each stack not equipped with a control device.

(3) The following methods shall be used to determine the volumetric flow rate in the effluent gas in a stack:

(i) Method 1 for sample and velocity traverses,

(ii) Method 2 for velocity and volumetric flow rate,

(iii) Method 3 for gas analysis, and

(iv) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be a 1-liter sample taken in a 1-liter container.

(c) For Method 25, the sampling time for each of three runs must be at least one hour. The minimum sample volume must be 0.003 dscm except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator. The Administrator will approve the sampling of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that the testing of representative stacks would yield results comparable to those that would be obtained by testing all stacks.

[45 FR 85415, Dec. 24, 1980, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.397 Modifications.

The following physical or operational changes are not, by themselves, considered modifications of existing facilities:

(a) Changes as a result of model year changeovers or switches to larger cars.

(b) Changes in the application of the coatings to increase coating film thickness.

§ 60.398 Innovative technology waivers.

(a) *General Motors Corporation, Wentzville, Missouri, automobile assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at General Motors Corporation automobile assembly plant located in Wentzville, Missouri, shall comply with the following conditions:

(i) The General Motors Corporation shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Wentzville assembly plant.

(ii) Commencing on February 4, 1983, and continuing to December 31, 1986, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980) is demonstrated to the Administrator's satisfaction the General Motors Corporation shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Wentzville, Missouri, assembly plant, to either:

(A) 1.9 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (a)(1)(ii) of this section, and continuing thereafter, emissions of VOC from each topcoat operations shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (Dec. 24, 1980).

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (a)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region VII, 324 East 11th Street, Kansas City, MO 64106, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. The technology development report shall summarize the base coat/clear coat development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of 40 CFR 60.392(c) (Dec. 24, 1980) based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for General Motors Corporation to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the General Motors Corporation to enforcement under section 113 (b) and (c), 42 U.S.C. 7412 (b) and (c), and section 120, 42 U.S.C. 7420, of the Act as well as possible citizen enforcement under section 304 of the Act, 42 U.S.C. 7604.

(b) *General Motors Corporation, Detroit, Michigan, Automobile Assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at General Motors Corporation's automobile assembly plant located in Detroit, MI, shall comply with the following conditions:

(i) The General Motors Corporation shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Detroit assembly plant.

(ii) Commencing on February 4, 1983, and continuing to December 31, 1986, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980), is demonstrated to the Administrator's satisfaction, the General Motors Corporation shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Detroit, MI, assembly plant, to either:

(A) 1.9 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (b)(ii) of this section, and continuing thereafter, emissions of VOC from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (December 24, 1980).

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (b)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. The technology development report shall summarize the base coat/clear coat development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of 40 CFR 60.392(c) (Dec. 24, 1980) based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for General Motors Corporation to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the General Motors Corporation to enforcement under section 113 (b) and (c), 42 U.S.C. 7412 (b) and (c), and section 120, 42 U.S.C. 7420, of the Act as well as possible citizen enforcement under section 304 of the Act, 42 U.S.C. 7604.

(c) *General Motors Corporation, Orion Township, MI, automobile assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at General Motors Corporation automobile assembly plant located in Orion Township, MI, shall comply with the following conditions:

(i) The General Motors Corporation shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Orion Township assembly plant.

(ii) Commencing on February 4, 1983, and continuing to December 31, 1986, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980) is demonstrated to the Administrator's satisfaction, the General Motors Corporation shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Orion Township, MI, assembly plant, to either:

(A) 1.9 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (c)(l)(ii) of this section and continuing thereafter, emissions of VOC from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (Dec. 24, 1980).

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (c)(l) (ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. The technology development report shall summarize the base coat/clear coat development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of 40 CFR 60.392(c) (December 24, 1980) based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for General Motors Corporation to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the General Motors Corporation to enforcement under section 113 (b) and (c), 42 U.S.C. 7412 (b) and (c), and section 120, 42 U.S.C. 7420, of the Act as well as possible citizen enforcement under section 304 of the Act, 42 U.S.C. 7604.

(d) *Honda of America Manufacturing, Incorporated (Honda), Marysville, Ohio, automobile assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Honda's automobile assembly plant located in Marysville, OH, shall comply with the following conditions:

(i) Honda shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Marysville assembly plant.

(ii) Commencing on February 4, 1983, and continuing for 4 years or to December 31, 1986, whichever is sooner, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980) is demonstrated to the Administrator's satisfaction, Honda shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at Marysville, OH, assembly plant, to either:

(A) 3.1 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (d)(1)(ii) of this section and continuing thereafter, emissions of VOC from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (December 24, 1980).

(iv) Each topcoat operation shall comply with the provisions of §§60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (d)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. The technology development report shall summarize the base coat/clear coat development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of 40 CFR 60.392(c) (Dec. 24, 1980) based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for Honda to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject Honda to enforcement under section 113(b) and (c), 42 U.S.C. 7412(b) and (c), and section 120, 42 U.S.C. 7420, of the Act as well as possible citizen enforcement under section 304 of the Act, 42 U.S.C. 7604.

(e) *Nissan Motor Manufacturing Corporation, U.S.A. (Nissan), Smyrna, TN, light-duty truck assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Nissan's light-duty truck assembly plant located in Smyrna, Tennessee, shall comply with the following conditions:

(i) Nissan shall obtain the necessary permits as required by section 173 of the Clean Air Act, as amended August 1977, to operate the Smyrna assembly plant.

(ii) Commencing on February 4, 1983, and continuing for 4 years or to December 31, 1986, whichever is sooner, or until the base coat/clear coat topcoat system that can achieve the standard specified in 40 CFR 60.392(c) (Dec. 24, 1980), is demonstrated to the Administrator's satisfaction, Nissan shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Smyrna, TN, assembly plant, to either:

(A) 2.3 kilograms of VOC per liter of applied coating solids from base coat/clear coat topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (e)(1)(ii) of this section and continuing thereafter, emissions of VOC from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified in 40 CFR 60.392(c) (Dec. 24, 1980).

Each topcoat operation shall comply with the provisions of §§60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for base coat/clear coat coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits in paragraph (e)(1)(ii)(A) of this section.

(f) *Chrysler Corporation, Sterling Heights, MI, automobile assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Chrysler Corporation's automobile assembly plant located in Sterling Heights, MI, shall comply with the following conditions:

(i) The Chrysler Corporation shall obtain the necessary permits as required under Parts C and D of the Clean Air Act, as amended August 1977, to operate the Sterling Heights assembly plant.

(ii) Commencing on September 9, 1985, and continuing to December 31, 1986, or until the basecoat/clearcoat (BC/CC) topcoat system that can achieve the standard specified under § 60.392(c) of this subpart is demonstrated to the Administrator's satisfaction, whichever is sooner, the Chrysler Corporation shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Sterling Heights, MI assembly plant, to either:

(A) 1.7 kilograms of VOC per liter of applied coating solids from BC/CC topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (f)(1)(ii) and continuing thereafter, emissions of VOC's from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified under § 60.392(c) of this subpart.

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for BC/CC coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits specified under paragraph (f)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. A copy of this report shall be sent to Director, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, MD–13, Research Triangle Park, NC 27711. The technology development report shall summarize the BC/CC development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of § 60.392(c) of this subpart, based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for the Chrysler Corporation to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the Chrysler Corporation to enforcement under sections 113 (b) and (c) of the Act (42 U.S.C. 7412 (b) and (c)) and under section 120 of the Act (42 U.S.C. 7420), as well as possible citizen enforcement under section 304 of the Act (42 U.S.C. 7604).

(3) This waiver shall not be construed to constrain the State of Michigan from imposing upon the Chrysler Corporation any emission reduction requirement at Chrysler's Sterling Heights automobile assembly plant necessary for the maintenance of reasonable further progress or the attainment of the national ambient air quality standard for ozone or the maintenance of the national ambient air quality standard for ozone. Furthermore, this waiver shall not be construed as granting any exemptions from the applicability, enforcement, or other provisions of any other standards that apply or may apply to topcoat operations or any other operations at this automobile assembly plant.

(g) *Ford Motor Company, Hapeville, GA, automotive assemply plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Ford Motor Company's automobile assembly plant located in Hapeville, GA, shall comply with the following conditions:

(i) The Ford Motor Company shall obtain the necessary permits as required under parts C and D of the Clean Air Act, as amended August 1977, to operate the Hapeville assembly plant.

(ii) Commencing on September 9, 1985, and continuing to December 31, 1986, or until the basecoat/clearcoat (BC/CC) topcoat system that can achieve the standard specified under § 60.392(c) of this subpart is demonstrated to the Administrator's satisfaction, whichever is sooner, the Ford

Motor Company shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Hapeville, GA, assembly plant, to either:

(A) 2.6 kilograms of VOC per liter of applied coating solids from BC/CC topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (g)(1)(ii) and continuing thereafter, emissions of VOC's from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified under §60.392(c) of this subpart.

(iv) Each topcoat operation shall comply with the provisions of §§60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for BC/CC coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits specified under paragraph (g)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region IV, 345 Courtland Street, NE., Atlanta, GA 30365, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. A copy of this report shall be sent to Director, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, MD–13, Research Triangle Park, NC 27711. The technology development report shall summarize the BC/CC development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of §60.392(c) of this subpart, based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for the Ford Motor Company to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the Ford Motor Company to enforcement under section 113 (b) and (c) and the Act (42 U.S.C. 7412 (b) and (c)) and under section 120 of the Act (42 U.S.C. 7420), as well as possible citizen enforcement under section 304 of the Act (42 U.S.C. 7604).

(3) This waiver shall not be construed to constrain the State of Georgia from imposing upon the Ford Motor Corporation any emission reduction requirement at Ford's Hapeville automobile assembly plant necessary for the maintenance of reasonable further progress or the attainment of the national ambient air quality standard for ozone or the maintenance of the national ambient air quality standard for ozone. Furthermore, this waiver shall not be construed as granting any exemptions from the applicability, enforcement, or other provisions of any other standards that apply or may apply to topcoat operations or any other operations at this automobile assembly plant.

(h) *Ford Motor Company, St. Paul, MN, light-duty truck assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Ford Motor Company's automobile assembly plant located in St. Paul, MN, shall comply with the following conditions:

(i) The Ford Motor Company shall obtain the necessary permits as required under parts C and D of the Clean Air Act, as amended August 1977, to operate the St. Paul assembly plant.

(ii) Commencing on September 9, 1985, and continuing to December 31, 1986, or until the basecoat/clearcoat (BC/CC) topcoat system that can achieve the standard specified under §60.392(c) of this subpart, is demonstrated to the Administrator's satisfaction, whichever is sooner, the Ford Motor Company shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the St. Paul, MN, assembly plant, to either:

(A) 2.0 kilograms of VOC per liter of applied coating solids from BC/CC topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (h)(1)(ii) and continuing thereafter, emissions of VOC's from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified under § 60.392(c) of this subpart.

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for BC/CC coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits specified under paragraph (h)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region V, 230 South Dearborn Street, Chicago, IL 60604, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. A copy of this report shall be sent to Director, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, MD–13, Research Triangle Park, NC 27711. The technology development report shall summarize the BC/CC development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of § 60.392(c) of this subpart, based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for the Ford Motor Company to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this wavier shall subject the Ford Motor Company to enforcement under section 113 (b) and (c) of the Act (42 U.S.C. 7412 (b) and (c)) and under section 120 of the Act (42 U.S.C. 7420), as well as possible citizen enforcement under section 304 of the Act (42 U.S.C. 7604).

(3) This waiver shall not be construed to constrain the State of Minnesota from imposing upon the Ford Motor Corporation any emission reduction requirements at Ford's St. Paul light-duty truck assembly plant necessary for the maintenance of reasonable further progress or the attainment of the national ambient air quality standard for ozone or the maintenance of the national ambient air quality standard for ozone. Furthermore, this waiver shall not be construed as granting any exemptions from the applicability, enforcement, or other provisions of any other standards that apply or may apply to topcoat operations or any other operations at this light-duty truck assembly plant.

(i) *Ford Motor Company, Hazelwood, MO, passenger van assembly plant.* (1) Pursuant to section 111(j) of the Clean Air Act, 42 U.S.C. 7411(j), each topcoat operation at Ford Motor Company's passenger van assembly plant located in Hazelwood, MO, shall comply with the following conditions:

(i) The Ford Motor Company shall obtain the necessary permits as required under parts C and D of the Clean Air Act, as amended August 1977, to operate the Hazelwood assembly plant.

(ii) Commencing on September 9, 1985, and continuing to December 31, 1986, or until the basecoat/clearcoat (BC/CC) topcoat system that can achieve the standard specified under § 60.392(c) of this subpart is demonstrated to the Administrator's satisfaction, whichever is sooner, the Ford Motor Company shall limit the discharge of VOC emissions to the atmosphere from each topcoat operation at the Hazelwood, MO, assembly plant, to either:

(A) 2.5 kilograms of VOC per liter of applied coating solids from BC/CC topcoats, and 1.47 kilograms of VOC per liter of applied coating solids from all other topcoat coatings; or

(B) 1.47 kilograms of VOC per liter of applied coating solids from all topcoat coatings.

(iii) Commencing on the day after the expiration of the period described in paragraph (i)(1)(ii) and continuing thereafter, emissions of VOC's from each topcoat operation shall not exceed 1.47 kilograms of VOC per liter of applied coating solids as specified under § 60.392(c) of this subpart.

(iv) Each topcoat operation shall comply with the provisions of §§ 60.393, 60.394, 60.395, 60.396, and 60.397. Separate calculations shall be made for BC/CC coatings and all other topcoat coatings when necessary to demonstrate compliance with the emission limits specified under paragraph (i)(1)(ii)(A) of this section.

(v) A technology development report shall be sent to EPA Region VII, 726 Minnesota Avenue, Kansas City, KS 61101, postmarked before 60 days after the promulgation of this waiver and annually thereafter while this waiver is in effect. A copy of this report shall be sent to Director, Emission Standards and Engineering Division, U.S. Environmental Protection Agency, MD–13, Research Triangle Park, NC 27711. The technology development report shall summarize the BC/CC development work including the results of exposure and endurance tests of the various coatings being evaluated. The report shall include an updated schedule of attainment of §60.392(c) of this subpart, based on the most current information.

(2) This waiver shall be a federally promulgated standard of performance. As such, it shall be unlawful for the Ford Motor Company to operate a topcoat operation in violation of the requirements established in this waiver. Violation of the terms and conditions of this waiver shall subject the Ford Motor Company to enforcement under section 113 (b) and (c) of the Act (42 U.S.C. 7412 (b) and (c)) and under section 120 of the Act (42 U.S.C. 7420), as well as possible citizen enforcement under section 304 of the Act (42 U.S.C. 7604).

(3) This waiver shall not be construed to constrain the State of Missouri from imposing upon the Ford Motor Corporation any emission reduction at Ford's Hazelwood passenger van assembly plant necessary for the maintenance of reasonable further progresss or the attainment of the national ambient air quality standards for ozone or the maintenance of the national ambient air quality standard for ozone. Furthermore, this waiver shall not be construed as granting any exemptions from the applicability, enforcement, or other provisions of any other standards that apply or may apply to topcoat operations or any other operations at this passenger van assembly plant.

[48 FR 5454, Feb. 4, 1983, as amended at 50 FR 36834, Sept. 9, 1985]

Subpart NN—Standards of Performance for Phosphate Rock Plants

SOURCE: 47 FR 16589, Apr. 16, 1982, unless otherwise noted.

§60.400 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities used in phosphate rock plants which have a maximum plant production capacity greater than 3.6 megagrams per hour (4 tons/hr): dryers, calciners, grinders, and ground rock handling and storage facilities, except those facilities producing or preparing phosphate rock solely for consumption in elemental phosphorus production.

(b) Any facility under paragraph (a) of this section which commences construction, modification, or reconstruction after September 21, 1979, is subject to the requirements of this part.

§60.401 Definitions.

(a) *Phosphate rock plant* means any plant which produces or prepares phosphate rock product by any or all of the following processes: Mining, beneficiation, crushing, screening, cleaning, drying, calcining, and grinding.

(b) *Phosphate rock feed* means all material entering the process unit, including moisture and extraneous material as well as the following ore minerals: Fluorapatite, hydroxylapatite, chlorapatite, and carbonateapatite.

(c) *Dryer* means a unit in which the moisture content of phosphate rock is reduced by contact with a heated gas stream.

(d) *Calciner* means a unit in which the moisture and organic matter of phosphate rock is reduced within a combustion chamber.

(e) *Grinder* means a unit which is used to pulverize dry phosphate rock to the final product size used in the manufacture of phosphate fertilizer and does not include crushing devices used in mining.

(f) *Ground phosphate rock handling and storage system* means a system which is used for the conveyance and storage of ground phosphate rock from grinders at phosphate rock plants.

(g) *Beneficiation* means the process of washing the rock to remove impurities or to separate size fractions.

[47 FR 16589, Apr. 16, 1982, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.402 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere:

(1) From any phosphate rock dryer any gases which:

(i) Contain particulate matter in excess of 0.030 kilogram per megagram of phosphate rock feed (0.06 lb/ton), or

(ii) Exhibit greater than 10-percent opacity.

(2) From any phosphate rock calciner processing unbeneficiated rock or blends of beneficiated and unbeneficiated rock, any gases which:

(i) Contain particulate matter in excess of 0.12 kilogram per megagram of phosphate rock feed (0.23 lb/ton), or

(ii) Exhibit greater than 10-percent opacity.

(3) From any phosphate rock calciner processing beneficiated rock any gases which:

(i) Contain particulate matter in excess of 0.055 kilogram per megagram of phosphate rock feed (0.11 lb/ton), or

(ii) Exhibit greater than 10-percent opacity.

(4) From any phosphate rock grinder any gases which:

(i) Contain particulate matter in excess of 0.006 kilogram per megagram of phosphate rock feed (0.012 lb/ton), or

(ii) Exhibit greater than zero-percent opacity.

(5) From any ground phosphate rock handling and storage system any gases which exhibit greater than zero-percent opacity.

[47 FR 16589, Apr. 16, 1982, as amended at 65 FR 61760, Oct. 17, 2000]

§ 60.403 Monitoring of emissions and operations.

(a) Any owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate a continuous monitoring system, except as provided in paragraphs (b) and (c) of this section, to monitor and record the opacity of the gases discharged into the atmosphere from any phosphate rock dryer, calciner, or grinder. The span of this system shall be set at 40-percent opacity.

(b) For ground phosphate rock storage and handling systems, continuous monitoring systems for measuring opacity are not required.

(c) The owner or operator of any affected phosphate rock facility using a wet scrubbing emission control device shall not be subject to the requirements in paragraph (a) of this section, but shall install, calibrate, maintain, and operate the following continuous monitoring devices:

(1) A monitoring device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ±250 pascals (±1 inch water) gauge pressure.

(2) A monitoring device for the continuous measurement of the scrubbing liquid supply pressure to the control device. The monitoring device must be accurate within ±5 percent of design scrubbing liquid supply pressure.

(d) For the purpose of conducting a performance test under § 60.8, the owner or operator of any phosphate rock plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a device for measuring the phosphate rock feed to any affected dryer, calciner, or grinder. The measuring device used must be accurate to within ±5 percent of the mass rate over its operating range.

(e) For the purpose of reports required under § 60.7(c), periods of excess emissions that shall be reported are defined as all 6-minute periods during which the average opacity of the plume from any phosphate rock dryer, calciner, or grinder subject to paragraph (a) of this section exceeds the applicable opacity limit.

(f) Any owner or operator subject to the requirements under paragraph (c) of this section shall report on a frequency specified in § 60.7(c) all measurement results that are less than 90 percent of the average levels maintained during the most recent performance test conducted under § 60.8 in which the affected facility demonstrated compliance with the standard under § 60.402.

[47 FR 16589, Apr. 16, 1982, as amended at 64 FR 7466, Feb. 12, 1999]

§ 60.404 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided for in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.402 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(c_s\ Q_{sd})/(P\ K)$$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton) of phosphate rock feed.

c_s=concentration of particulate matter, g/dscm (g/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=phosphate rock feed rate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf).

(3) The device of § 60.403(d) shall be used to determine the phosphate rock feed rate (P) for each run.

(4) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c) To comply with § 60.403(f), if applicable, the owner or operator shall use the monitoring devices in § 60.403(c) (1) and (2) to determine the average pressure loss of the gas stream through the scrubber and the average scrubbing supply pressure during the particulate matter runs.

[54 FR 6676, Feb. 14, 1989; 54 FR 21344, May 17, 1989]

Subpart PP—Standards of Performance for Ammonium Sulfate Manufacture

SOURCE: 45 FR 74850, Nov. 12, 1980, unless otherwise noted.

§ 60.420 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each ammonium sulfate dryer within an ammonium sulfate manufacturing plant in the caprolactam by-product, synthetic, and coke oven by-product sectors of the ammonium sulfate industry.

(b) Any facility under paragraph (a) of this section that commences construction or modification after February 4, 1980, is subject to the requirements of this subpart.

§ 60.421 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A.

Ammonium sulfate dryer means a unit or vessel into which ammonium sulfate is charged for the purpose of reducing the moisture content of the product using a heated gas stream. The unit includes foundations, superstructure, material charger systems, exhaust systems, and integral control systems and instrumentation.

Ammonium sulfate feed material streams means the sulfuric acid feed stream to the reactor/crystallizer for synthetic and coke oven by-product ammonium sulfate manufacturing plants; and means the total or combined feed streams (the oximation ammonium sulfate stream and the rearrangement reaction ammonium sulfate stream) to the crystallizer stage, prior to any recycle streams.

Ammonium sulfate manufacturing plant means any plant which produces ammonium sulfate.

Caprolactam by-product ammonium sulfate manufacturing plant means any plant which produces ammonium sulfate as a by-product from process streams generated during caprolactam manufacture.

Coke oven by-product ammonium sulfate manufacturing plant means any plant which produces ammonium sulfate by reacting sulfuric acid with ammonia recovered as a by-product from the manufacture of coke.

Synthetic ammonium sulfate manufacturing plant means any plant which produces ammonium sulfate by direct combination of ammonia and sulfuric acid.

§ 60.422 Standards for particulate matter.

On or after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator of an ammonium sulfate dryer subject to the provisions of this subpart shall cause to be discharged into the atmosphere, from any ammonium sulfate dryer, particulate matter at an emission rate exceeding 0.15 kilogram of particulate per megagram of ammonium sulfate produced (0.30 pound of particulate per ton of ammonium sulfate produced) and exhaust gases with greater than 15 percent opacity.

§ 60.423 Monitoring of operations.

(a) The owner or operator of any ammonium sulfate manufacturing plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate flow monitoring devices which can be used to determine the mass flow of ammonium sulfate feed material streams to the process. The flow monitoring device shall have an accuracy of ±5 percent over its range. However, if the plant uses weigh scales of the same accuracy to directly measure production rate of ammonium sulfate, the use of flow monitoring devices is not required.

(b) The owner or operator of any ammonium sulfate manufacturing plant subject to the provisions of this subpart shall install, calibrate, maintain, and operate a monitoring device which continuously measures and permanently records the total pressure drop across the emission control system. The monitoring device shall have an accuracy of ±5 percent over its operating range.

§ 60.424 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.422 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=(c_s\ Q_{sd})/(PK)$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton) of ammonium sulfate produced.

c_s=concentration of particulate matter, g/dscm (g/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=production rate of ammonium sulfate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg (453.6 g/lb).

(2) Method 5 shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 1.50 dscm (53 dscf).

(3) Direct measurement using product weigh scales, or the result of computations using a material balance, shall be used to determine the rate (P) of the ammonium sulfate production. If production rate is determined by material balance, the following equations shall be used:

(i) For synthetic and coke oven by-product ammonium sulfate plants:

P=ABCK¼

where:

A=sulfuric aid flow rate to the reactor/crystallizer averaged over the time-period taken to conduct the run, liter/min.

B=acid density (a function of acid strength and temperature), g/cc.

C=acid strength, decimal fraction.

K¼=conversion factor, 0.0808 (Mg-min-cc)/(g-hr-liter) [0.0891 (ton-min-cc)/(g-hr-liter)].

(ii) For caprolactam by-product ammonium sulfate plants:

$P=DEFK''$

where:

D=total combined feed stream flow rate to the ammonium crystallizer before the point where any recycle streams enter the stream averaged over the time-period taken to conduct the test run, liter/min.

E=density of the process stream solution, g/liter.

F=percent mass of ammonium sulfate in the process solution, decimal fraction.

K″=conversion factor, 6.0 x 10^{-5} (Mg-min)/(g-hr) [6.614 x 10^{-5} (ton-min)/(g-hr)].

(4) Method 9 and the procedures in § 60.11 shall be used to determine the opacity.

[54 FR 6676, Feb. 14, 1989, as amended at 65 FR 61760, Oct. 17, 2000]

Subpart QQ—Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing

SOURCE: 47 FR 50649, Nov. 8, 1982, unless otherwise noted.

§ 60.430 Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which the provisions of this subpart apply is each publication rotogravure printing press.

(b) The provisions of this subpart do not apply to proof presses.

(c) Any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after October 28, 1980 is subject to the requirements of this subpart.

§ 60.431 Definitions and notations.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

Automatic temperature compensator means a device that continuously senses the temperature of fluid flowing through a metering device and automatically adjusts the registration of the measured volume to the corrected equivalent volume at a base temperature.

Base temperature means an arbitrary reference temperature for determining liquid densities or adjusting the measured volume of a liquid quantity.

Density means the mass of a unit volume of liquid, expressed as grams per cubic centimeter, kilograms per liter, or pounds per gallon, at a specified temperature.

Gravure cylinder means a printing cylinder with an intaglio image consisting of minute cells or indentations specially engraved or etched into the cylinder's surface to hold ink when continuously revolved through a fountain of ink.

Performance averaging period means 30 calendar days, one calendar month, or four consecutive weeks as specified in sections of this subpart.

Proof press means any device used only to check the quality of the image formation of newly engraved or etched gravure cylinders and prints only nonsaleable items.

Publication rotogravure printing press means any number of rotogravure printing units capable of printing simultaneously on the same continuous web or substrate and includes any associated device for continuously cutting and folding the printed web, where the following saleable paper products are printed:

Catalogues, including mail order and premium,

Direct mail advertisements, including circulars, letters, pamphlets, cards, and printed envelopes,

Display advertisements, including general posters, outdoor advertisements, car cards, window posters; counter and floor displays; point-of-purchase, and other printed display material,

Magazines,

Miscellaneous advertisements, including brochures, pamphlets, catalogue sheets, circular folders, announcements, package inserts, book jackets, market circulars, magazine inserts, and shopping news,

Newspapers, magazine and comic supplements for newspapers, and preprinted newspaper inserts, including hi-fi and spectacolor rolls and sections,

Periodicals, and

Telephone and other directories, including business reference services.

Raw ink means all purchased ink.

Related coatings means all non-ink purchased liquids and liquid-solid mixtures containing VOC solvent, usually referred to as extenders or varnishes, that are used at publication rotogravure printing presses.

Rotogravure printing unit means any device designed to print one color ink on one side of a continuous web or substrate using a gravure cylinder.

Solvent-borne ink systems means ink and related coating mixtures whose volatile portion consists essentially of VOC solvent with not more than five weight percent water, as applied to the gravure cylinder.

Solvent recovery system means an air pollution control system by which VOC solvent vapors in air or other gases are captured and directed through a condenser(s) or a vessel(s) containing beds of activated carbon or other adsorbents. For the condensation method, the solvent is recovered directly from the condenser. For the adsorption method, the vapors are adsorbed, then desorbed by steam or other media, and finally condensed and recovered.

VOC means volatile organic compound.

VOC solvent means an organic liquid or liquid mixture consisting of VOC components.

Waterborne ink systems means ink and related coating mixtures whose volatile portion consists of a mixture of VOC solvent and more than five weight percent water, as applied to the gravure cylinder.

(b) Symbols used in this subpart are defined as follows:

D_B=the density at the base temperature of VOC solvent used or recovered during one performance averaging period.

D_{ci}=the density of each color of raw ink and each related coating (i) used at the subject facility (or facilities), at the coating temperature when the volume of coating used is measured.

D_{di}=the density of each VOC solvent (i) added to the ink for dilution at the subject facility (or facilities), at the solvent temperature when the volume of solvent used is measured.

D_{gi}=the density of each VOC solvent (i) used as a cleaning agent at the subject facility (or facilities), at the solvent temperature when the volume of cleaning solvent used is measured.

D_{hi}=the density of each quantity of water (i) added at the subject facility (or facilities) for dilution of waterborne ink systems at the water temperature when the volume of dilution water used is measured.

D_{mi}=the density of each quantity of VOC solvent and miscellaneous solvent-borne waste inks and waste VOC solvents (i) recovered from the subject facility (or facilities), at the solvent temperature when the volume of solvent recovered is measured.

D_{oi}=the density of the VOC solvent contained in each raw ink and related coating (i) used at the subject facility (or facilities), at the coating temperature when the volume of coating used is measured.

D_{wi}=the density of the water contained in each waterborne raw ink and related coating (i) used at the subject facility (or facilities), at the coating temperature when the volume of coating used is measured.

L_{ci}=the measured liquid volume of each color of raw ink and each related coating (i) used at the facility of a corresponding VOC content, V_{oi} or W_{oi}, with a VOC density, D_{oi}, and a coating density, D_{ci}.

L_{di}=the measured liquid volume of each VOC solvent (i) with corresponding density, D_{di}, added to dilute the ink used at the subject facility (or facilities)

M_{ci}=the mass, determined by direct weighing, of each color of raw ink and each related coating (i) used at the subject facility (or facilities).

M_d=the mass, determined by direct weighing, of VOC solvent added to dilute the ink used at the subject facility (or facilities) during one performance averaging period.

M_g=the mass, determined by direct weighing, of VOC solvent used as a cleaning agent at the subject facility (or facilities) during one performance averaging period.

M_h=the mass, determined by direct weighing, of water added for dilution with waterborne ink systems used at the subject facility (or facilities) during one performance averaging period.

M_m=the mass, determined by direct weighing, of VOC solvent and miscellaneous solvent-borne waste inks and waste VOC solvents recovered from the subject facility (or facilities) during one performance averaging period.

M_o=the total mass of VOC solvent contained in the raw inks and related coatings used at the subject facility (or facilities) during one performance averaging period.

M_r=the total mass of VOC solvent recovered from the subject facility (or facilities) during one performance averaging period.

M_t=the total mass of VOC solvent used at the subject facility (or facilities) during one performance averaging period.

M_v=the total mass of water used with waterborne ink systems at the subject facility (or facilities) during one performance averaging period.

M_w=the total mass of water contained in the waterborne raw inks and related coatings used at the subject facility (or facilities) during one performance averaging period.

P=the average VOC emission percentage for the subject facility (or facilities) for one performance averaging period.

V_{oi}=the liquid VOC content, expressed as a volume fraction of VOC volume per total volume of coating, of each color of raw ink and related coating (i) used at the subject facility (or facilities).

V_{wi}=the water content, expressed as a volume fraction of water volume per total volume of coating, of each color of waterborne raw ink and related coating (i) used at the subject facility (or facilities).

W_{oi}=the VOC content, expressed as a weight fraction of mass of VOC per total mass of coating, of each color of raw ink and related coating (i) used at the subject facility (or facilities).

W_{wi}=the water content, expressed as a weight fraction of mass of water per total mass of coating, of each color of waterborne raw ink and related coating (i) used at the subject facility (or facilities).

(c) The following subscripts are used in this subpart with the above symbols to denote the applicable facility:

a=affected facility.

b=both affected and existing facilities controlled in common by the same air pollution control equipment.

e=existing facility.

f=all affected and existing facilities located within the same plant boundary.

[47 FR 50649, Nov. 8, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

§60.432 Standard for volatile organic compounds.

During the period of the performance test required to be conducted by §60.8 and after the date required for completion of the test, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility VOC equal to more than 16 percent of the total mass of VOC solvent and water used at that facility during any one performance averaging period. The water used includes only that water contained in the waterborne raw inks and related coatings and the water added for dilution with waterborne ink systems.

§60.433 Performance test and compliance provisions.

(a) The owner or operator of any affected facility (or facilities) shall conduct performance tests in accordance with §60.8, under the following conditions:

(1) The performance averaging period for each test is 30 consecutive calendar days and not an average of three separate runs as prescribed under §60.8(f).

(2) Except as provided under paragraphs (f) and (g) of this section, if affected facilities routinely share the same raw ink storage/handling system with existing facilities, then temporary measurement procedures for segregating the raw inks, related coatings, VOC solvent, and water used at the affected facilities must be employed during the test. For this case, an overall emission percentage for the combined facilities as well as for only the affected facilities must be calculated during the test.

(3) For the purpose of measuring bulk storage tank quantities of each color of raw ink and each related coating used, the owner or operator of any affected facility shall install, calibrate, maintain, and continuously operate during the test one or more:

(i) Non-resettable totalizer metering device(s) for indicating the cumulative liquid volumes used at each affected facility; or

(ii) Segregated storage tanks for each affected facility to allow determination of the liquid quantities used by measuring devices other than the press meters required under item (i) of this article; or

(iii) Storage tanks to serve more than one facility with the liquid quantities used determined by measuring devices other than press meters, if facilities are combined as decribed under paragraph (d), (f), or (g) of this section.

(4) The owner or operator may choose to install an automatic temperature compensator with any liquid metering device used to measure the raw inks, related coatings, water, or VOC solvent used, or VOC solvent recovered.

(5) Records of the measured amounts used at the affected facility and the liquid temperature at which the amounts were measured are maintained for each shipment of all purchased material on at least a weekly basis for:

(i) The raw inks and related coatings used;

(ii) The VOC and water content of each raw ink and related coating used as determined according to § 60.435;

(iii) The VOC solvent and water added to the inks used;

(iv) The VOC solvent used as a cleaning agent; and

(v) The VOC solvent recovered.

(6) The density variations with temperature of the raw inks, related coatings, VOC solvents used, and VOC solvent recovered are determined by the methods stipulated in § 60.435(d).

(7) The calculated emission percentage may be reported as rounded-off to the nearest whole number.

(8) Printing press startups and shutdowns are not included in the exemption provisions under § 60.8(c). Frequent periods of press startups and shutdowns are normal operations and constitute representative conditions for the purpose of a performance test.

(b) If an affected facility uses waterborne ink systems or a combination of waterborne and solvent-borne ink systems with a solvent recovery system, compliance is determined by the following procedures, except as provided in paragraphs (d), (e), (f), and (g) of this section:

(1) The mass of VOC in the solvent-borne and waterborne raw inks and related coatings used is determined by the following equation:

$$(M_o)_a = \sum_{i=1}^{k} (M_{ci})_a (W_{oi})_a + \sum_{i=1}^{m} (L_{ci})_a (D_{ci})_a (W_{oi})_a + \sum_{i=1}^{n} (L_{ci})_a (V_{oi})_a (D_{oi})_a$$

where:

k is the total number of raw inks and related coatings measured as used in direct mass quantities with different amounts of VOC content.

m is the total number of raw inks and related coatings measured as used by volume with different amounts of VOC content or different densities.

n is the total number of raw inks and related coatings measured as used by volume with different amounts of VOC content or different VOC solvent densities.

(2) The total mass of VOC used is determined by the following equation:

$$(M_t)_a = (M_o)_a + \sum_{i=1}^{m} (L_{di})_a (D_{di})_a + (M_d)_a + \sum_{i=1}^{n} (L_{gi})_a (D_{gi})_a + (M_g)_a$$

where "m" and "n" are the respective total numbers of VOC dilution and cleaning solvents measured as used by volume with different densities.

(3) The mass of water in the waterborne raw inks and related coatings used is determined by the following equation:

$$(M_w)_a = \sum_{i=1}^{k} (M_{ci})_a (W_{wi})_a + \sum_{i=1}^{m} (L_{ci})_a (D_{ci})_a (W_{wi})_a + \sum_{i=1}^{n} (L_{ci})_a (V_{wi})_a (D_{wi})_a$$

where:

k is the total number of raw inks and related coatings measured as used in direct mass quantities with different amounts of water content.

m is the total number of raw inks and related coatings measured as used by volume with different amounts of water content or different densities.

n is the total number of raw inks and related coatings measured as used by volume with different amounts of water content or different water densities.

(4) The total mass of water used is determined by the following equation:

$$(M_v)_a = (M_w)_a + (M_h)_a + \sum_{i=1}^{m} (L_{hi})_a (D_{hi})_a$$

where "m" is the total number of water dilution additions measured as used by volume with different densities.

(5) The total mass of VOC solvent recovered is determined by the following equation:

$$(M_r)_a = (M_m)_a + \sum_{i=1}^{k} (L_{mi})_a (D_{mi})_a$$

where "k" if the total number of VOC solvents, miscellaneous solvent-borne waste inks, and waste VOC solvents measured as recovered by volume with different densities.

(6) The average VOC emission percentage for the affected facility is determined by the following equation:

$$P_a = \left[\frac{(M_t)_a - (M_r)_a}{(M_t)_a + (M_v)_a} \right] \times 100$$

(c) If an affected facility controlled by a solvent recovery system uses only solvent-borne ink systems, the owner or operator may choose to determine compliance on a direct mass or a density-corrected liquid volume basis. Except as provided in paragraphs (d), (e), (f), and (g) of this section, compliance is determined as follows:

(1) On a direct mass basis, compliance is determined according to paragraph (b) of this section, except that the water term, M_v, does not apply.

(2) On a density-corrected liquid volume basis, compliance is determined by the following procedures:

(i) A base temperature corresponding to that for the largest individual amount of VOC solvent used or recovered from the affected facility, or other reference temperature, is chosen by the owner or operator.

(ii) The corrected liquid volume of VOC in the raw inks and related coatings used is determined by the following equation:

$$(L_o)_a = \sum_{i=1}^{k} \frac{(M_{ci})_a (W_{oi})_a}{D_B} + \sum_{i=1}^{m} \frac{(L_{ci})_a (D_{ci})_a (W_{oi})_a}{D_B} + \sum_{i=1}^{n} \frac{(L_{ci})_a (V_{oi})_a (D_{oi})_a}{D_B}$$

where:

k is the total number of raw inks and related coatings measured as used in direct mass quantities with different amounts of VOC content.

m is the total number of raw inks and related coatings measured as used by volume with different amounts of VOC content or different densities.

n is the total number of raw inks and related coatings measured as used by volume with different amounts of VOC content or different VOC solvent densities.

(iii) The total corrected liquid volume of VOC used is determined by the following equation:

$$(L_t)_a = (L_o)_a + \sum_{i=1}^{m} \frac{(L_{di})_a (D_{di})_a}{D_B} + \frac{(M_d)_a}{D_B} + \sum_{i=1}^{n} \frac{(L_{gi})_a (D_{gi})_a}{D_B} + \frac{(M_g)_a}{D_B}$$

where "m" and "n" are the respective total numbers of VOC dilution and cleaning solvents measured as used by volume with different densities.

(iv) The total corrected liquid volume of VOC solvent recovered is determined by the following equation:

$$P_e = \left[\frac{(L_t)_e - (L_r)_e}{(L_t)_e} \right] \times 100$$

where "k" is the total number of VOC solvents, miscellaneous solvent-borne waste inks, and waste VOC solvents measured as recovered by volume with different densities.

(v) The average VOC emission percentage for the affected facility is determined by the following equation:

$$P_a = \left[\frac{(L_t)_a - (L_r)_a}{(L_t)_a} \right] \times 100$$

(d) If two or more affected facilities are controlled by the same solvent recovery system, compliance is determined by the procedures specified in paragraph (b) or (c) of this section, whichever applies, except that $(L_t)_a$ and $(L_r)_a$, $(M_t)_a$, $(M_r)_a$, and $(M_v)_a$, are the collective amounts of VOC solvent and water corresponding to all the affected facilities controlled by that solvent recovery system. The average VOC emission percentage for each of the affected facilities controlled by that same solvent recovery system is assumed to be equal.

(e) Except as provided under paragraph (f) of this section, if an existing facility (or facilities) and an affected facility (or facilities) are controlled in common by the same solvent recovery system, the owner or operator shall determine compliance by conducting a separate emission test on the existing facility (or facilities) and then conducting a performance test on the combined facilities as follows:

(1) Before the initial startup of the affected facility (or facilities) and at any other time as requested by the Administrator, the owner or operator shall conduct emission test(s) on the existing facility (or facilities) controlled by the subject solvent recovery system. The solvent recovery system must handle VOC emissions from only the subject existing facility (or facilities), not from affected facilities, during the emission test.

(2) During the emission test, the affected facilities are subject to the standard stated in § 60.432.

(3) The emission test is conducted over a 30 consecutive calendar day averaging period according to the conditions stipulated in paragraphs (a)(1) through (a)(5) of this section, except that the conditions pertain to only existing facilities instead of affected facilities.

(4) The owner or operator of the existing facility (or facilities) shall provide the Administrator at least 30 days prior notice of the emission test to afford the Administrator the opportunity to have an observer present.

(5) The emission percentage for the existing facility (or facilities) during the emission test is determined by one of the following procedures:

(i) If the existing facility (or facilities) uses a combination of waterborne and solvent-borne ink systems, the average VOC emission percentage must be determined on a direct mass basis according to paragraph (b) or (d) of this section, whichever applies, with the following equation:

$$P_e = \left[\frac{(M_t)_e - (M_r)_e}{(M_t)_e + (M_v)_e} \right] \times 100$$

where the water and VOC solvent amounts pertain to only existing facilities.

(ii) If the existing facility (or facilities) uses only solvent-borne ink systems, the owner or operator may choose to determine the emission percentage either on a direct mass basis or a density-corrected liquid volume basis according to paragraph (c) or (d) of this section, whichever applies. On a direct mass basis, the average VOC emission percentage is determined by the equation presented in article (i) of this paragraph. On a density-corrected liquid volume basis, the average VOC emission percentage is determined by the following equation:

$$P_a = \left[\frac{(L_t)_a - (L_r)_a}{(L_t)_a} \right] \times 100$$

where the VOC solvent amounts pertain to only existing facilities.

(6) The owner or operator of the existing facility (or facilities) shall furnish the Administrator a written report of the results of the emission test.

(7) After completion of the separate emission test on the existing facility (or facilities), the owner or operator shall conduct performance test(s) on the combined facilities with the solvent recovery system handling VOC emissions from both the existing and affected facilities.

(8) During performance test(s), the emission percentage for the existing facility (or facilities), P_e, is assumed to be equal to that determined in the latest emission test. The administrator may request additional emission tests if any physical or operational changes occur to any of the subject existing facilities.

(9) The emission percentage for the affected facility (or facilities) during performance test(s) with both existing and affected facilities connected to the solvent recovery system is determined by one of the following procedures:

(i) If any of the combined facilities uses both waterborne and solvent-borne ink systems, the average VOC emission percentage must be determined on a direct mass basis according to paragraph (b) or (d) of this section, whichever applies, with the following equation:

$$P_a = \left\{ \frac{(M_t)_b - (M_r)_b - \left(\frac{P_e}{100} \right) [(M_t)_e + (M_v)_e]}{(M_t)_a + (M_v)_a} \right\} \times 100$$

where $(M_t)_b$ and $(M_r)_b$ are the collective VOC solvent amounts pertaining to all the combined facilities.

(ii) If all of the combined facilities use only solvent-borne ink systems, the owner or operator may choose to determine performance of the affected facility (or facilities) either on a direct mass basis or a density-corrected liquid volume basis according to paragraph (c) or (d) of this section, whichever applies. On a direct mass basis, the average VOC emission percentage is determined by the equation presented in article (i) of this paragraph. On a density-corrected liquid volume basis, the average VOC emission percentage is determined by the following equation:

$$P_a = \left[\frac{(L_t)_b - (L_r)_b - (L_t)_e \left(\frac{P_e}{100} \right)}{(L_t)_a} \right] \times 100$$

where $(L_t)_b$ and $(L_r)_b$ are the collective VOC solvent amounts pertaining to all the combined facilities.

(f) The owner or operator may choose to show compliance of the combined performance of existing and affected facilities controlled in common by the same solvent recovery system. A separate emission test for existing facilities is not required for this option. The combined performance is determined by one of the following procedures:

(1) If any of the combined facilities uses both waterborne and solvent-borne ink systems, the combined average VOC emission percentage must be determined on a direct mass basis according to paragraph (b) or (d) of this section, whichever applies, with the following equation:

$$P_b = \left[\frac{(M_t)_b - (M_r)_b}{(M_t)_b + (M_v)_b} \right] \times 100$$

(2) If all of the combined facilities use only solvent-borne ink systems, the owner or operator may choose to determine performance either on a direct mass basis or a density-corrected liquid volume basis according to paragraph (c) or (d) of this section, whichever applies. On a direct mass basis, the average VOC emission percentage is determined by the equation presented in article (i) of this paragraph. On a density-corrected liquid volume basis, the average VOC emission percentage is determined by the following equation:

$$P_a = \left[\frac{(L_t)_a - (L_r)_a}{(L_t)_a} \right] \times 100$$

(g) If all existing and affected facilities located within the same plant boundary use waterborne ink systems or solvent-borne ink systems with solvent recovery systems, the owner or operator may choose to show compliance on a plantwide basis for all the existing and affected facilities together. No separate emission tests on existing facilities and no temporary segregated liquid measurement procedures for affected facilities are required for this option. The plantwide performance is determined by one of the following procedures:

(1) If any of the facilities use waterborne ink systems, the total plant average VOC emission percentage must be determined on a direct mass basis according to paragraph (b) of this section with the following equation:

$$P_a = \left\{ \frac{(M_t)_b - (M_r)_b - \left(\frac{P_e}{100} \right) [(M_t)_e + (M_v)_e]}{(M_t)_a + (M_v)_a} \right\} \times 100$$

Where $(M_t)_f$ and $(M_v)_f$ are the collective VOC solvent and water amounts used at all the subject plant facilities during the performance test.

(2) If all of the plant facilities use only solvent-borne ink systems, the owner or operator may choose to determine performance either on a direct mass basis or a density-corrected liquid volume basis according to paragraph (c) of this section. On a direct mass basis, the total plant average VOC emission percentage is determined by the equation presented in article (i) of this paragraph. On a density-corrected liquid volume basis, the total plant average VOC emission percentage is determined by the following equation:

$$P_f = \left[\frac{(L_t)_f - (L_r)_b - (L_t)_e - (L_r)_e}{(L_t)_f} \right] \times 100$$

Where $(L_t)_f$ is the collective VOC solvent amount used at all the subject plant facilities during the performance test.

[47 FR 50649, Nov. 8, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.434 Monitoring of operations and recordkeeping.

(a) After completion of the performance test required under § 60.8, the owner or operator of any affected facility using waterborne ink systems or solvent-borne ink systems with solvent recovery systems shall record the amount of solvent and water used, solvent recovered, and estimated emission percentage for each performance averaging period and shall maintain these records for 2 years. The emission percentage is estimated as follows:

(1) The performance averaging period for monitoring of proper operation and maintenance is a calendar month or 4 consecutive weeks, at the option of the owner or operator.

(2) If affected facilities share the same raw ink storage/handling system with existing facilities, solvent and water used, solvent recovered, and emission percentages for the combined facilities may be documented. Separate emission percentages for only the affected facilities are not required in this case. The combined emission percentage is compared to the overall average for the existing and affected facilities' emission percentage determined during the most recent performance test.

(3) Except as provided in article (4) of this paragraph, temperatures and liquid densities determined during the most recent performance test are used to calculate corrected volumes and mass quantities.

(4) The owner or operator may choose to measure temperatures for determination of actual liquid densities during each performance averaging period. A different base temperature may be used for each performance averaging period if desired by the owner or operator.

(5) The emission percentage is calculated according to the procedures under § 60.433 (b) through (g), whichever applies, or by a comparable calculation which compares the total solvent recovered to the total solvent used at the affected facility.

§ 60.435 Test methods and procedures.

(a) The owner or operator of any affected facility using solvent-borne ink systems shall determine the VOC content of the raw inks and related coatings used at the affected facility by:

(1) Analysis using Method 24A of routine weekly samples of raw ink and related coatings in each respective storage tank; or

(2) Analysis using Method 24A of samples of each shipment of all purchased raw inks and related coatings; or

(3) Determination of the VOC content from the formulation data supplied by the ink manufacturer with each shipment of raw inks and related coatings used.

(b) The owner or operator of any affected facility using solvent-borne ink systems shall use the results of verification analyses by Method 24A to determine compliance when discrepancies with ink manufacturers' formulation data occur.

(c) The owner or operator of any affected facility using waterborne ink systems shall determine the VOC and water content of raw inks and related coatings used at the affected facility by:

(1) Determination of the VOC and water content from the formulation data supplied by the ink manufacturer with each shipment of purchased raw inks and related coatings used; or

(2) Analysis of samples of each shipment of purchased raw inks and related coatings using a test method approved by the Administrator in accordance with § 60.8(b).

(d) The owner or operator of any affected facility shall determine the density of raw inks, related coatings, and VOC solvents by:

(1) Making a total of three determinations for each liquid sample at specified temperatures using the procedure outlined in ASTM D1475–60, 80, or 90, which is incorporated by reference. It is available from the American Society of Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103. It is also available for inspection at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC. This incorporation by reference was approved by the Director of the Federal Register on November 8, 1982. This material is incorporated as it exists on the date of approval and a notice of any change in these materials will be published in the FEDERAL REGISTER. The temperature and density is recorded as the arithmetic average of the three determinations; or

(2) Using literature values, at specified temperatures, acceptable to the Administrator.

(e) If compliance is determined according to § 60.433 (e), (f), or (g), the existing as well as affected facilities are subject to the requirements of paragraphs (a) through (d) of this section.

[47 FR 50649, Nov. 8, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

Subpart RR—Standards of Performance for Pressure Sensitive Tape and Label Surface Coating Operations

SOURCE: 48 FR 48375, Oct. 18, 1983, unless otherwise noted.

§ 60.440 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each coating line used in the manufacture of pressure sensitive tape and label materials.

(b) Any affected facility which inputs to the coating process 45 Mg (50 tons) of VOC or less per 12 month period is not subject to the emission limits of § 60.442(a), however, the affected facility is subject to the requirements of all other applicable sections of this subpart. If the amount of VOC input exceeds 45 Mg (50 tons) per 12 month period, the coating line will become subject to § 60.442(a) and all other sections of this subpart.

(c) This subpart applies to any affected facility which begins construction, modification, or reconstruction after December 30, 1980.

[48 FR 48375, Oct. 18, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.441 Definitions and symbols.

(a) Except as otherwise required by the context, terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

Coating applicator means an apparatus used to apply a surface coating to a continuous web.

Coating line means any number or combination of adhesive, release, or precoat coating applicators, flashoff areas, and ovens which coat a continuous web, located between a web unwind station and a web rewind station, to produce pressure sensitive tape and label materials.

Coating solids applied means the solids content of the coated adhesive, release, or precoat as measured by Method 24.

Flashoff area means the portion of a coating line after the coating applicator and usually before the oven entrance.

Fugitive volatile organic compounds means any volatile organic compounds which are emitted from the coating applicator and flashoff areas and are not emitted in the oven.

Hood or enclosure means any device used to capture fugitive volatile organic compounds.

Oven means a chamber which uses heat or irradiation to bake, cure, polymerize, or dry a surface coating.

Precoat means a coating operation in which a coating other than an adhesive or release is applied to a surface during the production of a pressure sensitive tape or label product.

Solvent applied in the coating means all organic solvent contained in the adhesive, release, and precoat formulations that is metered into the coating applicator from the formulation area.

Total enclosure means a structure or building around the coating applicator and flashoff area or the entire coating line for the purpose of confining and totally capturing fugitive VOC emissions.

VOC means volatile organic compound.

(b) All symbols used in this subpart not defined below are given meaning in the Act or in subpart A of this part.

a=the gas stream vents exiting the emission control device.

b=the gas stream vents entering the emission control device.

C_{aj}=the concentration of VOC (carbon equivalent) in each gas stream (j) exiting the emission control device, in parts per million by volume.

C_{bi}=the concentration of VOC (carbon equivalent) in each gas stream (i) entering the emission control device, in parts per million by volume.

C_{fk}=the concentration of VOC (carbon equivalent) in each gas stream (k) emitted directly to the atmosphere, in parts per million by volume.

G=the calculated weighted average mass (kg) of VOC per mass (kg) of coating solids applied each calendar month.

M_{ci}=the total mass (kg) of each coating (i) applied during the calendar month as determined from facility records.

M_r=the total mass (kg) of solvent recovered for a calendar month.

Q_{aj}=the volumetric flow rate of each effluent gas stream (j) exiting the emission control device, in dry standard cubic meters per hour.

Q_{bi}=the volumetric flow rate of each effluent gas stream (i) entering the emission control device, in dry standard cubic meters per hour.

Q_{fk}=the volumetric flow rate of each effluent gas stream (k) emitted to the atmosphere, in dry standard cubic meters per hour.

R=the overall VOC emission reduction achieved for a calendar month (in percent).

R_q=the required overall VOC emission reduction (in percent).

W_{oi}=the weight fraction of organics applied of each coating (i) applied during a calendar month as determined from Method 24 or coating manufacturer's formulation data.

W_{si}=the weight fraction of solids applied of each coating (i) applied during a calendar month as determined from Method 24 or coating manufacturer's formulation data.

[48 FR 48375, Oct. 18, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.442 Standard for volatile organic compounds.

(a) On and after the date on which the performance test required by § 60.8 has been completed each owner or operator subject to this subpart shall:

(1) Cause the discharge into the atmosphere from an affected facility not more than 0.20 kg VOC/kg of coating solids applied as calculated on a weighted average basis for one calendar month; or

(2) Demonstrate for each affected facility;

(i) A 90 percent overall VOC emission reduction as calculated over a calendar month; or

(ii) The percent overall VOC emission reduction specified in § 60.443(b) as calculated over a calendar month.

§ 60.443 Compliance provisions.

(a) To determine compliance with § 60.442 the owner or operator of the affected facility shall calculate a weighted average of the mass of solvent used per mass of coating solids applied for a one calendar month period according to the following procedures:

(1) Determine the weight fraction of organics and the weight fraction of solids of each coating applied by using Reference Method 24 or by the coating manufacturer's formulation data.

(2) Compute the weighted average by the following equation:

$$G = \frac{\sum_{i=1}^{n} W_{oi} M_{ci}}{\sum_{i=1}^{n} W_{si} M_{ci}}$$

(3) For each affected facility where the value of G is less than or equal to 0.20 kg VOC per kg of coating solids applied, the affected facility is in compliance with § 60.442(a)(1).

(b) To determine compliance with § 60.442(a)(2), the owner or operator shall calculate the required overall VOC emission reduction according to the following equation:

$$R_q = \frac{G - 0.20}{G} \times 100$$

If R_q is less than or equal to 90 percent, then the required overall VOC emission reduction is R_q. If R_q is greater than 90 percent, then the required overall VOC emission reduction is 90 percent.

(c) Where compliance with the emission limits specified in § 60.442(a)(2) is achieved through the use of a solvent recovery system, the owner or operator shall determine the overall VOC emission reduction for a one calendar month period by the following equation:

$$R = \sum_{i=1}^{n} \frac{M_r}{W_{oi} M_{ci}} \times 100$$

If the R value is equal to or greater than the R_q value specified in paragraph (b) of this section, then compliance with § 60.442(a)(2) is demonstrated.

(d) Where compliance with the emission limit specified in § 60.442(a)(2) is achieved through the use of a solvent destruction device, the owner or operator shall determine calendar monthly compliance by comparing the monthly required overall VOC emission reduction specified in paragraph (b) of this section to the overall VOC emission reduction demonstrated in the most recent performance test which complied with § 60.442(a)(2). If the monthly required overall VOC emission reduction is less than or equal to the overall VOC reduction of the most recent performance test, the affected facility is in compliance with § 60.442(a)(2).

(e) Where compliance with § 60.442(a)(2) is achieved through the use of a solvent destruction device, the owner or operator shall continuously record the destruction device combustion temperature during coating operations for thermal incineration destruction devices or the gas temperature upstream and downstream of the incinerator catalyst bed during coating operations for catalytic incineration destruction devices. For thermal incineration destruction devices the owner or operator shall record all 3-hour periods (during actual coating operations) during which the average temperature of the device is more than 28 °C (50 °F) below the average temperature of the device during the most recent performance test complying with § 60.442(a)(2). For catalytic incineration destruction devices, the owner or operator shall record all 3-hour periods (during actual coating operations) during which the average temperature of the device immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature of the device during the most recent performance test complying with § 60.442(a)(2), and all 3-hour periods (during actual coating operations) during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test complying with § 60.442(a)(2).

(f) After the initial performance test required for all affected facilities under § 60.8, compliance with the VOC emission limitation and percentage reduction requirements under § 60.442 is based on the average emission reduction for one calendar month. A separate compliance test is completed at the end of each calendar month after the initial performance test, and a new calendar month's average VOC emission reduction is calculated to show compliance with the standard.

(g) If a common emission control device is used to recover or destroy solvent from more than one affected facility, the performance of that control device is assumed to be equal for each of the affected facilities. Compliance with § 60.442(a)(2) is determined by the methods specified in paragraphs (c) and (d) of this section and is performed simultaneously on all affected facilities.

(h) If a common emission control device is used to recover solvent from an existing facility (or facilities) as well as from an affected facility (or facilities), the overall VOC emission reduction for the affected facility (or facilities), for the purpose of compliance, shall be determined by the following procedures:

(1) The owner or operator of the existing facility (or facilities) shall determine the mass of solvent recovered for a calendar month period from the existing facility (or facilities) prior to the connection of the affected facility (or facilities) to the emission control device.

(2) The affected facility (or facilities) shall then be connected to the emission control device.

(3) The owner or operator shall determine the total mass of solvent recovered from both the existing and affected facilities over a calendar month period. The mass of solvent determined in paragraph (h)(1) of this section from the existing facility shall be subtracted from the total mass of recovered solvent to obtain the mass of solvent recovered from the affected facility (or facilities). The overall VOC emission reduction of the affected facility (or facilities) can then be determined as specified in paragraph (c) of this section.

(i) If a common emission control device(s) is used to destruct solvent from an existing facility (or facilities) as well as from an affected facility (or facilities), the overall VOC emission reduction for the affected facility (or facilities), for the purpose of compliance, shall be determined by the following procedures:

(1) The owner or operator shall operate the emission control device with both the existing and affected facilities connected.

(2) The concentration of VOC (in parts per million by volume) after the common emission control device shall be determined as specified in § 60.444(c). This concentration is used in the calculation of compliance for both the existing and affected facilities.

(3) The volumetric flow out of the common control device attributable to the affected facility (or facilities) shall be calculated by first determining the ratio of the volumetric flow entering the common control device attributable to the affected facility (facilities) to the total volumetric flow entering the common control device from both existing and affected facilities. The multiplication of this ratio by the total volumetric flow out of the common control device yields the flow attributable to the affected facility (facilities). Compliance is determined by the use of the equation specified in § 60.444(c).

(j) Startups and shutdowns are normal operation for this source category. Emissions from these operations are to be included when determining if the standard specified at § 60.442(a)(2) is being attained.

[48 FR 48375, Oct. 18, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.444 Performance test procedures.

(a) The performance test for affected facilities complying with § 60.442 without the use of add-on controls shall be identical to the procedures specified in § 60.443(a).

(b) The performance test for affected facilities controlled by a solvent recovery device shall be conducted as follows:

(1) The performance test shall be a one calendar month test and not the average of three runs as specified in § 60.8(f).

(2) The weighted average mass of VOC per mass of coating solids applied for a one calendar month period shall be determined as specified in § 60.443(a) (1) and (2).

(3) Calculate the required percent overall VOC emission reduction as specified in § 60.443(b).

(4) Inventory VOC usage and VOC recovery for a one calendar month period.

(5) Determine the percent overall VOC emission reduction as specified in § 60.443(c).

(c) The performance test for affected facilities controlled by a solvent destruction device shall be conducted as follows:

(1) The performance of the solvent destruction device shall be determined by averaging the results of three test runs as specified in § 60.8(f).

(2) Determine for each affected facility prior to each test run the weighted average mass of VOC per mass of coating solids applied being used at the facility. The weighted average shall be determined as specified in § 60.443(a). In this application the quantities of W_{oi}, W_{si}, and M_{ci} shall be determined for the time period of each test run and not a calendar month as specified in § 60.441.

(3) Calculate the required percent overall VOC emission reduction as specified in § 60.443(b).

(4) Determine the percent overall VOC emission reduction of the solvent destruction device by the following equation and procedures:

$$R = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{m} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi} + \sum_{k=1}^{p} Q_{fk}C_{fk}} \times 100$$

(i) The owner or operator of the affected facility shall construct the overall VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.446(b).

(ii) The owner or operator of an affected facility shall construct a temporary total enclosure around the coating line applicator and flashoff area during the performance test for the purpose of capturing fugitive VOC emissions. If a permanent total enclosure exists in the affected facility prior to the performance test and the Administrator is satisfied that the enclosure is totally capturing fugitive VOC emissions, then no additional total enclosure will be required for the performance test.

(iii) For each affected facility where the value of R is greater than or equal to the value of R_q calculated in

§ 60.443(b), compliance with § 60.442(a)(2) is demonstrated.

§ 60.445 Monitoring of operations and recordkeeping.

(a) The owner or operator of an affected facility subject to this subpart shall maintain a calendar month record of all coatings used and the results of the reference test method specified in § 60.446(a) or the manufacturer's formulation data used for determining the VOC content of those coatings.

(b) The owner or operator of an affected facility controlled by a solvent recovery device shall maintain a calendar month record of the amount of solvent applied in the coating at each affected facility.

(c) The owner or operator of an affected facility controlled by a solvent recovery device shall install, calibrate, maintain, and operate a monitoring device for indicating the cumulative amount of solvent recovered by the device over a calendar month period. The monitoring device shall be accurate within ±2.0 percent. The owner or operator shall maintain a calendar month record of the amount of solvent recovered by the device.

(d) The owner or operator of an affected facility operating at the conditions specified in § 60.440(b) shall maintain a 12 month record of the amount of solvent applied in the coating at the facility.

(e) The owner or operator of an affected facility controlled by a thermal incineration solvent destruction device shall install, calibrate, maintain, and operate a monitoring device which continuously indicates and records the temperature of the solvent destruction device's exhaust gases. The monitoring device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5 °C.

(f) The owner or operator of an affected facility controlled by a catalytic incineration solvent destruction device shall install, calibrate, maintain, and operate a monitoring device which continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed.

(g) The owner or operator of an affected facility controlled by a solvent destruction device which uses a hood or enclosure to capture fugitive VOC emissions shall install, calibrate, maintain, and operate a monitoring device which continuously indicates that the hood or enclosure is operating. No continuous monitor shall be required if the owner or operator can demonstrate that the hood or enclosure system is interlocked with the affected facility's oven recirculation air system.

(h) Records of the measurements required in §§ 60.443 and 60.445 must be retained for at least two years following the date of the measurements.

§ 60.446 Test methods and procedures.

(a) The VOC content per unit of coating solids applied and compliance with § 60.422(a)(1) shall be determined by either Method 24 and the equations specified in § 60.443 or by manufacturers' formulation data. In the event of any inconsistency between a Method 24 test and manufacturers' formulation data, the Method 24 test will govern. The Administrator may require an owner or operator to perform Method 24 tests during such months as he deems appropriate. For Method 24, the coating sample must be a one liter sample taken into a one liter container at a point where the sample will be representative of the coating applied to the web substrate.

(b) Method 25 shall be used to determine the VOC concentration, in parts per million by volume, of each effluent gas stream entering and exiting the solvent destruction device or its equivalent, and each effluent gas stream emitted directly to the atmosphere. Methods 1, 2, 3, and 4 shall be used to determine the sampling location, volumetric flowrate, molecular weight, and moisture of all sampled gas streams. For Method 25, the sampling time for each of three runs must be at least 1 hour. The minimum sampling volume must be 0.003 dscm except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(c) If the owner or operator can demonstrate to the Administrator's satisfaction that testing of representative stacks yields results comparable to those that would be obtained by testing all stacks, the Administrator will approve testing of representative stacks on a case-by-case basis.

[48 FR 48375, Oct. 18, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.447 Reporting requirements.

(a) For all affected facilities subject to compliance with § 60.442, the performance test data and results from the performance test shall be submitted to the Administrator as specified in § 60.8(a) of the General Provisions (40 CFR part 60, subpart A).

(b) Following the initial performance test, the owner or operator of each affected facility shall submit quarterly reports to the Administrator of exceedances of the VOC emission limits specified in § 60.442. If no such exceedances occur during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(c) The owner or operator of each affected facility shall also submit reports at the frequency specified in § 60.7(c) when the incinerator temperature drops as defined under § 60.443(e). If no such periods occur, the owner or operator shall state this in the report.

(d) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

[48 FR 48375, Oct. 18, 1983, as amended at 55 FR 51383, Dec. 13, 1990]

Subpart SS—Standards of Performance for Industrial Surface Coating: Large Appliances

SOURCE: 47 FR 47785, Oct. 27, 1982, unless otherwise noted.

§ 60.450 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each surface coating operation in a large appliance surface coating line.

(b) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after December 24, 1980.

§ 60.451 Definitions.

(a) All terms used in this subpart not defined below are given the meaning in the Act or in subpart A of this part.

Applied coating solids means the coating solids that adhere to the surface of the large appliance part being coated.

Coating application station means that portion of the large appliance surface coating operation where a prime coat or a top coat is applied to large appliance parts or products (e.g., dip tank, spray booth, or flow coating unit).

Curing oven means a device that uses heat to dry or cure the coating(s) applied to large appliance parts or products.

Electrodeposition (EDP) means a method of coating application in which the large appliance part or product is submerged in a tank filled with coating material suspended in water and an electrical potential is used to enhance deposition of the material on the part or product.

Flashoff area means the portion of a surface coating line between the coating application station and the curing oven.

Large appliance part means any organic surface-coated metal lid, door, casing, panel, or other interior or exterior metal part or accessory that is assembled to form a large appliance product. Parts subject to in-use temperatures in excess of 250 °F are not included in this definition.

Large appliance product means any organic surface-coated metal range, oven, microwave oven, refrigerator, freezer, washer, dryer, dishwasher, water heater, or trash compactor manufactured for household, commercial, or recreational use.

Large appliance surface coating line means that portion of a large appliance assembly plant engaged in the application and curing of organic surface coatings on large appliance parts or products.

Organic coating means any coating used in a surface coating operation, including dilution solvents, from which VOC emissions occur during the application or the curing process. For the purpose of this regulation, powder coatings are not included in this definition.

Powder coating means any surface coating that is applied as a dry powder and is fused into a continuous coating film through the use of heat.

Spray booth means the structure housing automatic or manual spray application equipment where a coating is applied to large appliance parts or products.

Surface coating operation means the system on a large appliance surface coating line used to apply and dry or cure an organic coating on the surface of large appliance parts or products. The surface coating operation may be a prime coat or a topcoat operation and includes the coating application station(s), flashoff area, and curing oven.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of a large appliance part or product to the total amount of coating solids used.

VOC content means the proportion of a coating that is volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of coating solids.

VOC emissions means the mass of volatile organic compounds (VOC's), expressed as kilograms of VOC's per liter of applied coating solids, emitted from a surface coating operation.

(b) All symbols used in this subpart not defined below are given the meaning in the Act or subpart A of this part.

C_a=the concentration of VOC's in a gas stream leaving a control device and entering the atmosphere (parts per million by volume, as carbon).

$C_b$the concentration of VOC's in a gas stream entering a control device (parts per million by volume, as carbon).

$C_f$the concentration of VOC's in a gas stream emitted directly to the atmosphere (parts per million by volume, as carbon).

$D_c$density of coating (or input stream), as received (kilograms per liter).

$D_d$density of a VOC-solvent added to coatings (kilograms per liter).

$D_r$density of a VOC-solvent recovered by an emission control device (kilograms per liter).

Ethe VOC destruction efficiency of a control device (fraction).

Fthe proportion of total VOC's emitted by an affected facility that enters a control device (fraction).

Gthe volume-weighted average mass of VOC's in coatings consumed in a calendar month per unit volume of applied coating solids (kilograms per liter).

$L_c$the volume of coating consumed, as received (liters).

$L_d$the volume of VOC-solvent added to coatings (liters).

$L_r$the volume of VOC-solvent recovered by an emission control device (liters).

$L_s$the volume of coating solids consumed (liters).

$M_d$the mass of VOC-solvent added to coatings (kilograms).

$M_o$the mass of VOC's in coatings consumed, as received (kilograms).

$M_r$the mass of VOC's recovered by an emission control device (kilograms).

Nthe volume-weighted average mass of VOC's emitted to the atmosphere per unit volume of applied coating solids (kilograms per liter).

$Q_a$the volumetric flow rate of a gas stream leaving a control device and entering the atmosphere (dry standard cubic meters per hour).

$Q_b$the volumetric flow rate of a gas stream entering a control device (dry standard cubic meters per hour).

$Q_f$the volumetric flow rate of a gas stream emitted directly to the atmosphere (dry standard cubic meters per hour).

Rthe overall VOC emission reduction achieved for an affected facility (fraction).

Tthe transfer efficiency (fraction).

$V_s$the proportion of solids in a coating (or input stream), as received (fraction by volume).

$W_o$the proportion of VOC's in a coating (or input stream), as received (fraction by weight).

§ 60.452 Standard for volatile organic compounds.

On or after the date on which the performance test required by § 60.8 is completed, no owner or operator of an affected facility subject to the provisions of this supbart shall discharge or cause the discharge of VOC emissions that exceed 0.90 kilogram of VOC's per liter of applied coating solids from any surface coating operation on a large appliance surface coating line.

§ 60.453 Performance test and compliance provisions.

(a) Sections 60.8 (d) and (f) do not apply to the performance test procedures required by this subpart.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each calendar month for each affected facility according to the procedures in this paragraph.

(1) An owner or operator shall use the following procedures for any affected facility that does not use a capture system and control device to comply with the emissions limit specified under § 60.452. The owner or operator shall determine the composition of the coatings by formulation data supplied by the coating manufacturer or by analysis of each coating, as received, using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the coating manufacturer to determine the VOC content of coatings using Method 24. The owner or operator shall determine the volume of coating and the mass of VOC-solvent used for thinning purposes from company records on a monthly basis. If a common coating distribution system serves more than one affected facility or serves both affected and existing facilities, the owner or operator shall estimate the volume of coatings used at each facility, by using the average dry weight of coating and the surface area coated by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Except as provided in paragraph (b)(1)(iv) of this section, the weighted average of the total mass of VOC's consumed per unit volume of coating solids applied each calendar month will be determined as follows.

(A) Calculate the mass of VOC's consumed (M_o+M_d) during the calendar month for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}, \qquad (1)$$

($\Sigma L_{dj}D_{dj}$ will be 0 if no VOC-solvent is added to the coatings, as received)

where:

n is the number of different coatings used during the calendar month, and

m is the number of different VOC-solvents added to coatings during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in the calendar month for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}, \qquad (2)$$

where n is the number of different coatings used during the calendar month.

(C) Select the appropriate transfer efficiency from Table 1. If the owner or operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiencies for application methods not listed shall be determined by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the accuracy of the transfer efficiency claims.

TABLE 1—TRANSFER EFFICIENCIES

Application method	Transfer efficiency (T_k)
Air-atomized spray	0.40
Airless spray	0.45
Manual electrostatic spray	0.60
Flow coat	0.85
Dip coat	0.85
Nonrotational automatic electrostatic spray	0.85
Rotating head automatic electrostatic spray	0.90
Electrodeposition	0.95

Where more than one application method is used within a single surface coating operation, the owner or operator shall determine the composition and volume of each coating applied by each method through a means acceptable to the Administrator and compute the weighted average transfer efficiency by the following equation:

$$T = \frac{\sum_{i=1}^{n} \sum_{k=1}^{m} L_{cik} \; V_{sik} \; T_k}{L_s} \qquad (3)$$

where:
n is the number of coatings (or input streams) used, and
m is the number of application methods used.

(D) Calculate the volume-weighted average mass of VOC's consumed per unit volume of coating solids applied (G) during the calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s T} \qquad (4)$$

(ii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during the calendar month for each affected facility by the following equation:

$$N = G \qquad (5)$$

(iii) Where the volume-weighted average mass of VOC's discharged to the atmosphere per unit volume of coating solids applied (N) is equal to or less than 0.90 kilogram per liter, the affected facility is in compliance.

(iv) If each individual coating used by an affected facility has a VOC content, as received, which when divided by the lowest transfer efficiency at which the coating is applied, results in a value equal to or less than 0.90 kilogram per liter, the affected facility is in compliance, provided no VOC's are added to the coating during distribution or application.

(2) An owner or operator shall use the following procedures for any affected facility that uses a capture system and a control device that destroys VOC's (e.g., incinerator) to comply with the emission limit specified under § 60.452.

(i) Determine the overall reduction efficiency (R) for the capture system and control device. For the initial performance test the overall reduction efficiency (R) shall be determined as prescribed in A, B, and C below. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test, providing control device and capture system operating conditions have not changed. The procedure in A, B, and C, below, shall be repeated when directed by the Administrator or when the owner or operator elects to operate the control device or capture system at conditions different from the initial performance test.

(A) Determine the fraction (F) of total VOC's emitted by an affected facility that enters the control device using the following equation:

$$F = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi}}{\sum_{i=1}^{n} Q_{bi} C_{bi} + \sum_{k=1}^{p} Q_{fk} C_{fk}} \qquad (6)$$

where:
n is the number of gas streams entering the control device
p is the number of gas streams emitted directly to the atmosphere.

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi}}$$

where:
n is the number of gas streams entering the control device, and
m is the number of gas streams leaving the control device and entering the atmosphere.

(B) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation:

(C) Determine overall reduction efficiency (R) using the following equation:

$$R = EF \qquad (8)$$

(ii) Calculate the volume-weighted average of the total mass of VOC's per unit volume of applied coating solids (G) during each calendar month for each affected facility using equations (1), (2), (3) if applicable, and (4).

(iii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during each calendar month by the following equation:

$$N=G(1-R) \qquad (9)$$

(iv) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is equal to or less than 0.90 kilogram per liter of applied coating solids, the affected facility is in compliance.

(3) An owner or operator shall use the following procedure for any affected facility that uses a control device for VOC recovery (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.452.

(i) Calculate the total mass of VOC's consumed (M_o+M_d) and the volume-weighted average of the total mass of VOC's per unit volume of applied coating solids (G) during each calendar month for each affected facility using equations (1), (2), (3) if applicable, and (4).

(ii) Calculate the total mass of VOC's recovered (M_r) during each calendar month using the following equation:

$$M_r=L_r\,D_r \qquad (10)$$

(iii) Calculate overall reduction efficiency of the control device (R) for each calendar month for each affected facility using the following equation:

$$R=\frac{M_r}{M_o+M_d} \qquad (11)$$

(iv) Calculate the volume-weighted average mass of VOC's emitted to the atmosphere (N) for each calendar month for each affected facility using equation (9).

(v) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is equal to or less than 0.90 kilogram per liter of applied coating solids, the affected facility is in compliance. Each monthly calculation is considered a performance test.

[47 FR 47785, Oct. 27, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.454 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses a capture system and an incinerator to comply with the emission limits specified under § 60.452 shall install, calibrate, maintain, and operate temperature measurement devices as prescribed below:

(1) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, a temperature measurement device shall be installed in the gas stream immediately before and after the catalyst bed.

(2) Each temperature measurement device shall be installed, calibrated, and maintained according to the manufacturer's specifications. The device shall have an accuracy of 0.75 percent of the temperature being measured, expressed in degrees Celsius, or ±2.5 °C, whichever is greater.

(3) Each temperature measurement device shall be equipped with a recording device so that a permanent continuous record is produced.

[47 FR 47785, Oct. 27, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.455 Reporting and recordkeeping requirements.

(a) The reporting requirements of § 60.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under § 60.8(a):

(1) Except as provided in paragraph (a)(2) of this section, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for a period of 1 calendar month from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of § 60.453(b)(1)(iv), a list of the coatings used during a period of 1 calendar month, the VOC content of each coating calculated from data determined using Reference Method 24 or supplied by the coating manufacturer, and the minimum transfer efficiency of any coating application equipment used during the month.

(3) For each affected facility where compliance is achieved through use of an incineration system, the following additional information will be reported:

(i) The proportion of total VOC's emitted that enters the control device (F),

(ii) The VOC reduction efficiency of the control device (E),

(iii) The average combustion temperature (or the average temperature upstream and downstream of the catalyst bed), and

(iv) A description of the method used to establish the amount of VOC's captured and sent to the incinerator.

(4) For each affected facility where compliance is achieved through use of a solvent recovery system, the following additional information will be reported:

(i) The volume of VOC-solvent recovered (L_r), and

(ii) The overall VOC emission reduction achieved (R).

(b) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the total mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under §60.452. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit at the frequency specified in §60.7(c) the following:

(1) Where compliance with §60.452 is achieved through use of thermal incineration, each 3-hour period of coating operation during which the average temperature of the device was more than 28 °C (50 °F) below the average temperature of the device during the most recent performance test at which destruction efficiency was determined as specified under §60.453.

(2) Where compliance with §60.452 is achieved through the use of catalytic incineration, each 3-hour period of coating operation during which the average temperature recorded immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature at the same location during the most recent performance test at which destruction efficiency was determined as specified under §60.453. Additionally, all 3-hour periods of coating operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference across the catalyst bed during the most recent performance test at which destruction efficiency was determined as specified under §60.453 will be recorded.

(3) For thermal and catalytic incinerators, if no such periods as described in paragraphs (c)(1) and (c)(2) of this section occur, the owner or operator shall state this in the report.

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine VOC emissions from each affected facility. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain at the source daily records of the incinerator combustion chamber temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed. Where compliance is achieved through the use of a solvent recovery system, the owner or operator shall maintain at the source daily records of the amount of solvent recovered by the system for each affected facility.

[47 FR 47785, Oct. 27, 1982, as amended at 55 FR 51383, Dec. 13, 1990; 65 FR 61761, Oct. 17, 2000]

§60.456 Test methods and procedures.

(a) The reference methods in Appendix A to this part, except as provided under §60.8(b), shall be used to determine compliance with §60.452 as follows:

(1) Method 24 or formulation data supplied by the coating manufacturer to determine the VOC content of a coating. In the event of dispute, Method 24 shall be the reference method.

For determining compliance only, results of Method 24 analyses of waterborne coatings shall be adjusted as described in Section 12.6 of Method 24. Procedures to determine VOC emissions are provided in § 60.453.

(2) Method 25 for the measurement of the VOC concentration in the gas stream vent.

(3) Method 1 for sample and velocity traverses.

(4) Method 2 for velocity and volumetric flow rate.

(5) Method 3 for gas analysis.

(6) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be a 1-liter sample taken into a 1-liter container at a point where the sample will be representative of the coating material.

(c) For Method 25, the sample time for each of three runs is to be at least 60 minutes and the minimum sample volume is to be at least 0.003 dscm (0.1 dscf) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(d) The Administrator will approve sampling of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that the testing of representative stacks would yield results comparable to those that would be obtained by testing all stacks.

[47 FR 47785, Oct. 27, 1982, as amended at 65 FR 61761, Oct. 17, 2000]

Subpart TT—Standards of Performance for Metal Coil Surface Coating

SOURCE: 47 FR 49612, Nov. 1, 1982, unless otherwise noted.

§ 60.460 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to the following affected facilities in a metal coil surface coating operation: each prime coat operation, each finish coat operation, and each prime and finish coat operation combined when the finish coat is applied wet on wet over the prime coat and both coatings are cured simultaneously.

(b) This subpart applies to any facility identified in paragraph (a) of this section that commences construction, modification, or reconstruction after January 5, 1981.

§ 60.461 Definitions.

(a) All terms used in this subpart not defined below are given the same meaning as in the Act or in subpart A of this part.

Coating means any organic material that is applied to the surface of metal coil.

Coating application station means that portion of the metal coil surface coating operation where the coating is applied to the surface of the metal coil. Included as part of the coating application station is the flashoff area between the coating application station and the curing oven.

Curing oven means the device that uses heat or radiation to dry or cure the coating applied to the metal coil.

Finish coat operation means the coating application station, curing oven, and quench station used to apply and dry or cure the final coating(s) on the surface of the metal coil. Where only a single coating is applied to the metal coil, that coating is considered a finish coat.

Metal coil surface coating operation means the application system used to apply an organic coating to the surface of any continuous metal strip with thickness of 0.15 millimeter (mm) (0.006 in.) or more that is packaged in a roll or coil.

Prime coat operation means the coating application station, curing oven, and quench station used to apply and dry or cure the initial coating(s) on the surface of the metal coil.

Quench station means that portion of the metal coil surface coating operation where the coated metal coil is cooled, usually by a water spray, after baking or curing.

VOC content means the quantity, in kilograms per liter of coating solids, of volatile organic compounds (VOC's) in a coating.

(b) All symbols used in this subpart not defined below are given the same meaning as in the Act and in subpart A of this part.

C_a= the VOC concentration in each gas stream leaving the control device and entering the atmosphere (parts per million by volume, as carbon).
C_b= the VOC concentration in each gas stream entering the control device (parts per million by volume, as carbon).
C_f= the VOC concentration in each gas steam emitted directly to the atmosphere (parts per million by volume, as carbon).
D_c= density of each coating, as received (kilograms per liter).
D_d= density of each VOC-solvent added to coatings (kilograms per liter).
D_r= density of VOC-solvent recovered by an emission control device (kilograms per liter).
E= VOC destruction efficiency of the control device (fraction).
F= the proportion of total VOC's emitted by an affected facility that enters the control device (fraction).
G= volume-weighted average mass of VOC's in coatings consumed in a calendar month per unit volume of coating solids applied (kilograms per liter).
L_c= the volume of each coating consumed, as received (liters).
L_d= the volume of each VOC-solvent added to coatings (liters).
L_r= the volume of VOC-solvent recovered by an emission control device (liters).
L_s= the volume of coating solids consumed (liters).
M_d= the mass of VOC-solvent added to coatings (kilograms).
M_o= the mass of VOC's in coatings consumed, as received (kilograms).
M_r= the mass of VOC's recovered by an emission control device (kilograms).
N= the volume-weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter).
Q_a= the volumetric flow rate of each gas stream leaving the control device and entering the atmosphere (dry standard cubic meters per hour).
Q_b= the volumetric flow rate of each gas stream entering the control device (dry standard cubic meters per hour).
Q_f= the volumetric flow rate of each gas steam emitted directly to the atmosphere (dry standard cubic meters per hour).
R= the overall VOC emission reduction achieved for an affected facility (fraction).
S= the calculated monthly allowable emission limit (kilograms of VOC per liter of coating solids applied).
V_s= the proportion of solids in each coating, as received (fraction by volume).
W_o= the proportion of VOC's in each coating, as received (fraction by weight).

§60.462 Standards for volatile organic compounds.

(a) On and after the date on which §60.8 requires a performance test to be completed, each owner or operator subject to this subpart shall not cause to be discharged into the atmosphere more than:

(1) 0.28 kilogram VOC per liter (kg VOC/*l*) of coating solids applied for each calendar month for each affected facility that does not use an emission control device(s); or

(2) 0.14 kg VOC/*l* of coating solids applied for each calendar month for each affected facility that continuously uses an emission control device(s) operated at the most recently demonstrated overall efficiency; or

(3) 10 percent of the VOC's applied for each calendar month (90 percent emission reduction) for each affected facility that continuously uses an emission control device(s) operated at the most recently demonstrated overall efficiency; or

(4) A value between 0.14 (or a 90-percent emission reduction) and 0.28 kg VOC/*l* of coating solids applied for each calendar month for each affected facility that intermittently uses an emission control device operated at the most recently demonstrated overall efficiency.

§60.463 Performance test and compliance provisions.

(a) Section 60.8(d) and (f) do not apply to the performance test.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under §60.8(a) and thereafter a performance test for each calendar month for each affected facility according to the procedures in this section.

(c) The owner or operator shall use the following procedures for determining monthly volume-weighted average emissions of VOC's in kg/*l* of coating solids applied.

(1) An owner or operator shall use the following procedures for each affected facility that does not use a capture system and control device to comply with the emission limit specified under

§60.462(a)(1). The owner or operator shall determine the composition of the coatings by formulation data supplied by the manufacturer of the coating or by an analysisof each coating, as received, using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coatings to determine the VOC content of coatings using Method 24 or an equivalent or alternative method. The owner or operator shall determine the volume of coating and the mass of VOC-solvent added to coatings from company records on a monthly basis. If a common coating distribution system serves more than one affected facility or serves both affected and existing facilities, the owner or operator shall estimate the volume of coating used at each affected facility by using the average dry weight of coating and the surface area coated by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Calculate the volume-weighted average of the total mass of VOC's consumed per unit volume of coating solids applied during each calendar month for each affected facility, except as provided under paragraph (c)(1)(iv) of this section. The weighted average of the total mass of VOC's used per unit volume of coating solids applied each calendar month is determined by the following procedures.

(A) Calculate the mass of VOC's used (Mo+Md) during each calendar month for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj} \qquad \text{Equation 1}$$

($\Sigma L_{dj} D_{dj}$ will be 0 if no VOC solvent is added to the coatings, as received)

where

n is the number of different coatings used during the calendar month, and

m is the number of different VOC solvents added to coatings used during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in each calendar month for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} V_{si} L_{ci} \qquad \text{Equation 2}$$

Where:

n is the number of different coatings used during the calendar month.

(C) Calculate the volume-weighted average mass of VOC's used per unit volume of coating solids applied (G) during the calendar month for each affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s} \qquad \text{Equation 3}$$

(ii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during the calendar month for each affected facility by the following equation:

$$N = G \qquad \text{Equation 4}$$

(iii) Where the volume-weighted average mass of VOC's discharged to the atmosphere per unit volume of coating solids applied (N) is equal to or less than 0.28 kg/*l*, the affected facility is in compliance.

(iv) If each individual coating used by an affected facility has a VOC content, as received, that is equal to or less than 0.28 kg/*l* of coating solids, the affected facility is in compliance provided no VOC's are added to the coatings during distribution or application.

(2) An owner or operator shall use the following procedures for each affected facility that continuously uses a capture system and a control device that destroys VOC's (e.g., incinerator) to comply with the emission limit specified under §60.462(a) (2) or (3).

(i) Determine the overall reduction efficiency (R) for the capture system and control device.

For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed in paragraphs (c)(2)(i) (A), (B), and (C) of this section. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test, providing control device and capture system operating conditions have not changed. The procedure in paragraphs (c)(2)(i) (A), (B), and (C) of this section, shall be repeated when directed by the Administrator or when the owner or operator elects to operate the control device or capture system at conditions different from the initial performance test.

(A) Determine the fraction (F) of total VOC's emitted by an affected facility that enters the control device using the following equation:

$$F=\frac{\sum_{i=1}^{l} C_{bi}Q_{bi}}{\sum_{i=1}^{l} C_{bi}Q_{bi}+\sum_{i=1}^{p} C_{fi}Q_{fi}}$$

Equation 5

Where:

l is the number of gas streams entering the control device, and

p is the number of gas streams emitted directly to the atmosphere.

(B) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation:

$$E=\frac{\sum_{i=1}^{n} Q_{bi}C_{bi}-\sum_{j=1}^{m} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi}}$$

Equation 6

Where:

n is the number of gas streams entering the control device, and

m is the number of gas streams leaving the control device and entering the atmosphere.

The owner or operator of the affected facility shall construct the VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.466. The owner or operator of the affected facility shall construct a temporary enclosure around the coating applicator and flashoff area during the performance test for the purpose of evaluating the capture efficiency of the system. The enclosure must be maintained at a negative pressure to ensure that all VOC emissions are measurable. If a permanent enclosure exists in the affected facility prior to the performance test and the Administrator is satisfied that the enclosure is adequately containing VOC emissions, no additional enclosure is required for the performance test.

(C) Determine overall reduction efficiency (R) using the following equation:

$$R = EF \qquad \text{Equation 7}$$

If the overall reduction efficiency (R) is equal to or greater than 0.90, the affected facility is in compliance and no further computations are necessary. If the overall reduction efficiency (R) is less than 0.90, the average total VOC emissions to the atmosphere per unit volume of coating solids applied (N) shall be computed as follows.

(ii) Calculate the volume-weighted average of the total mass of VOC's per unit volume of coating solids applied (G) during each calendar month for each affected facility using equations in paragraphs (c)(1)(i) (A), (B), and (C) of this section.

(iii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during each calendar month by the following equation:

$$N = G(1-R) \qquad \text{Equation 8}$$

(iv) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to 0.14 kg/l of coating solids applied, the affected facility is in compliance. Each monthly calculation is a performance test.

(3) An owner or operator shall use the following procedure for each affected facility that uses a control device that recovers the VOC's (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.462(a) (2) or (3).

(i) Calculate the total mass of VOC's consumed (M_o+M_d) during each calendar month for each affected facility using equation (1).

(ii) Calculate the total mass of VOC's recovered (M_r) during each calendar month using the following equation:

$$M_r = L_r D_r \qquad \text{Equation 9}$$

(iii) Calculate the overall reduction efficiency of the control device (R) for each calendar month for each affected facility using the following equation:

$$R = \frac{M_r}{M_o + M_d} \qquad \text{Equation 10}$$

If the overall reduction efficiency (R) is equal to or greater than 0.90, the affected facility is in compliance and no further computations are necessary. If the overall reduction efficiency (R) is less than 0.90, the average total VOC emissions to the atmosphere per unit volume of coating solids applied (N) must be computed as follows.

(iv) Calculate the total volume of coating solids consumed (L_s) and the volume-weighted average of the total mass of VOC's per unit volume of coating solids applied (G) during each calendar month for each affected facility using equations in paragraphs (c)(1)(i)(B) and (C) of this section.

(v) Calculate the volume-weighted average mass of VOC's emitted to the atmosphere (N) for each calendar month for each affected facility using equation (8).

(vi) If the weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to 0.14 kg/*l* of coating solids applied, the affected facility is in compliance. Each monthly calculation is a performance test.

(4) An owner or operator shall use the following procedures for each affected facility that intermittently uses a capture system and a control device to comply with the emission limit specified in § 60.462(a)(4).

(i) Calculate the total volume of coating solids applied without the control device in operation (L_{sn}) during each calendar month for each affected facility using the following equation:

$$L_{sn} = \sum_{i-1}^{n} V_{si} L_{ci} \qquad \text{Equation 11}$$

Where:

n is the number of coatings used during the calendar month without the control device in operation.

(ii) Calculate the total volume of coating solids applied with the control device in operation (L_{sc}) during each calendar month for each affected facility using the following equation:

$$L_{sc} = \sum_{i-1}^{n} V_{si} L_{ci} \qquad \text{Equation 12}$$

Where:

n is the number of coatings used during the calendar month with the control device in operation.

(iii) Calculate the mass of VOC's used without the control device in operation (M_{on}+M_{dn}) during each calendar month for each affected facility using the following equation:

$$M_{on} + M_{dn} + \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj} \qquad \text{Equation 13}$$

Where:

n is the number of different coatings used without the control device in operation during the calendar month, and

m is the number of different VOC-solvents added to coatings used without the control device in operation during the calendar month.

(iv) Calculate the volume-weighted average of the total mass of VOC's consumed per unit volume of coating solids applied without the control device in operation (G_n) during each calendar month for each affected facility using the following equation:

$$G_n = \frac{M_{on} + M_{dn}}{L_{sn}} \qquad \text{Equation 14}$$

(v) Calculate the mass of VOC's used with the control device in operation (M_{oc}+M_{dc}) during each calendar month for each affected facility using the following equation:

$$M_{oc} + M_{dc} = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{i=1}^{m} L_{dj} D_{dj} \qquad \text{Equation 15}$$

Where:

n is the number of different coatings used with the control device in operation during the calendar month, and

m is the number of different VOC-solvents added to coatings used with the control device in operation during the calendar month.

(vi) Calculate the volume-weighted average of the total mass of VOC's used per unit volume of coating solids applied with the control device in operation (G_c) during each calendar month for each affected facility using the following equation:

$$G = \frac{M_{oc} + M_{dc}}{L_{sn}} \qquad \text{Equation 16}$$

(vii) Determine the overall reduction efficiency (R) for the capture system and control device using the procedures in paragraphs (c)(2)(i) (A), (B), and (C) or paragraphs (c)(3) (i), (ii), and (iii) of this section, whichever is applicable.

(viii) Calculate the volume-weighted average of VOC emissions to the atmosphere (N) during each calendar month for each affected facility using the following equation:

$$N = \frac{G_n L_{sn} + G_c L_{sc}(1 - R)}{L_{sn} + L_{sc}} \qquad \text{Equation 17}$$

Equation 17

(ix) Calculate the emission limit(s) for each calendar month for each affected facility using the following equation:

$$S = \frac{0.28\ L_{sn} + 0.1\ G_c L_{sc}}{L_{ns} + L_{sc}}$$

or

$$\frac{0.28\ L_{sn} + 0.14\ L_{sc}}{L_{sn} + L_{sc}} \qquad \text{Equation 18}$$

whichever is greater.

(x) If the volume-weighted average mass of VOC's emitted to the atmosphere for each calendar month (N) is less than or equal to the calculated emission limit (S) for the calendar month, the affected facility is in compliance. Each monthly calculation is a performance test.

[47 FR 49612, Nov. 1, 1982; 48 FR 1056, Jan. 10, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§60.464 Monitoring of emissions and operations.

(a) Where compliance with the numerical limit specified in §60.462(a) (1) or (2) is achieved through the use of low VOC-content coatings without the use of emission control devices or through the use of higher VOC-content coatings in conjunction with emission control devices, the owner or operator shall compute and record the average VOC content of coatings applied during each calendar month for each affected facility, according to the equations provided in §60.463.

(b) Where compliance with the limit specified in §60.462(a)(4) is achieved through the intermittent use of emission control devices, the owner or operator shall compute and record for each affected facility the average VOC content of coatings applied during each calendar month according to the equations provided in § 60.463.

(c) If thermal incineration is used, each owner or operator subject to the provisions of this subpart shall install, calibrate, operate, and maintain a device that continuously records the combustion temperature of any effluent gases incinerated to achieve compliance with § 60.462(a)(2), (3), or (4). This device shall have an accuracy of ±2.5 °C. or ±0.75 percent of the temperature being measured expressed in degrees Celsius, whichever is greater. Each owner or operator shall also record all periods (during actual coating operations) in excess of 3 hours during which the average temperature in any thermal incinerator used to control emissions from an affected facility remains more than 28 °C (50 °F) below the temperature at which compliance with § 60.462(a)(2), (3), or (4) was demonstrated during the most recent measurement of incinerator efficiency required by § 60.8. The records required by § 60.7 shall identify each such occurrence and its duration. If catalytic incineration is used, the owner or operator shall install, calibrate, operate, and maintain a device to monitor and record continuously the gas temperature both upstream and downstream of the incinerator catalyst bed. This device shall have an accuracy of ±2.5 °C. or ±0.75 percent of the temperature being measured expressed in degrees Celsius, whichever is greater. During coating operations, the owner or operator shall record all periods in excess of 3 hours where the average difference between the temperature upstream and downstream of the incinerator catalyst bed remains below 80 percent of the temperature difference at which compliance was demonstrated during the most recent measurement of incinerator efficiency or when the inlet temperature falls more than 28 °C (50 °F) below the temperature at which compliance with § 60.462(a)(2), (3), or (4) was demonstrated during the most recent measurement of incinerator efficiency required by § 60.8. The records required by § 60.7 shall identify each such occurrence and its duration.

[47 FR 49612, Nov. 1, 1982; 48 FR 1056, Jan. 10, 1983, as amended at 65 FR 61761, Oct. 17, 2000]

§ 60.465 Reporting and recordkeeping requirements.

(a) Where compliance with the numerical limit specified in § 60.462(a) (1), (2), or (4) is achieved through the use of low VOC-content coatings without emission control devices or through the use of higher VOC-content coatings in conjunction with emission control devices, each owner or operator subject to the provisions of this subpart shall include in the initial compliance report required by § 60.8 the weighted average of the VOC content of coatings used during a period of one calendar month for each affected facility. Where compliance with § 60.462(a)(4) is achieved through the intermittent use of a control device, reports shall include separate values of the weighted average VOC content of coatings used with and without the control device in operation.

(b) Where compliance with § 60.462(a)(2), (3), or (4) is achieved through the use of an emission control device that destroys VOC's, each owner or operator subject to the provisions of this subpart shall include the following data in the initial compliance report required by § 60.8:

(1) The overall VOC destruction rate used to attain compliance with § 60.462(a)(2), (3), or (4) and the calculated emission limit used to attain compliance with § 60.462(a)(4); and

(2) The combustion temperature of the thermal incinerator or the gas temperature, both upstream and downstream of the incinerator catalyst bed, used to attain compliance with § 60.462(a)(2), (3), or (4).

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit a written report to the Administrator every calendar quarter of each instance in which the volume-weighted average of the local mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) is greater than the limit specified under § 60.462. If no such instances have occurred during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(d) The owner or operator of each affected facility shall also submit reports at the frequency specified in § 60.7(c) when the incinerator temperature drops as defined under § 60.464(c). If no such periods occur, the owner or operator shall state this in the report.

(e) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine monthly VOC emissions from each affected facility and to determine the monthly emission limit, where applicable. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain, at the source, daily records of the incinerator combustion temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed.

[47 FR 49612, Nov. 1, 1982, as amended at 55 FR 51383, Dec. 13, 1990; 56 FR 20497, May 3, 1991; 65 FR 61761, Oct. 17, 2000]

§ 60.466 Test methods and procedures.

(a) The reference methods in appendix A to this part, except as provided under § 60.8(b), shall be used to determine compliance with § 60.462 as follows:

(1) Method 24, or data provided by the formulator of the coating, shall be used for determining the VOC content of each coating as applied to the surface of the metal coil. In the event of a dispute, Method 24 shall be the reference method. When VOC content of waterborne coatings, determined by Method 24, is used to determine compliance of affected facilities, the results of the Method 24 analysis shall be adjusted as described in Section 12.6 of Method 24;

(2) Method 25, both for measuring the VOC concentration in each gas stream entering and leaving the control device on each stack equipped with an emission control device and for measuring the VOC concentration in each gas stream emitted directly to the atmosphere;

(3) Method 1 for sample and velocity traverses;

(4) Method 2 for velocity and volumetric flow rate;

(5) Method 3 for gas analysis; and

(6) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be at least a 1-liter sample taken at a point where the sample will be representative of the coating as applied to the surface of the metal coil.

(c) For Method 25, the sampling time for each of three runs is to be at least 60 minutes, and the minimum sampling volume is to be at least 0.003 dscm (0.11 dscf); however, shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(d) The Administrator will approve testing of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that testing of representative stacks yields results comparable to those that would be obtained by testing all stacks.

[47 FR 49612, Nov. 1, 1982, as amended at 51 FR 22938, June 24, 1986; 65 FR 61761, Oct. 17, 2000]

Subpart UU—Standards of Performance for Asphalt Processing and Asphalt Roofing Manufacture

SOURCE: 47 FR 34143, Aug. 6, 1982, unless otherwise noted.

§ 60.470 Applicability and designation of affected facilities.

(a) The affected facilities to which this subpart applies are each saturator and each mineral handling and storage facility at asphalt roofing plants; and each asphalt storage tank and each blowing still at asphalt processing plants, petroleum refineries, and asphalt roofing plants.

(b) Any saturator or mineral handling and storage facility under paragraph (a) of this section that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart. Any asphalt storage tank or blowing still that processes and/or stores asphalt used for roofing only or for roofing and other purposes, and that commences construction or modification after November 18, 1980, is subject to the requirements of this subpart.

Any asphalt storage tank or blowing still that processes and/or stores only nonroofing asphalts and that commences construction or modification after May 26, 1981, is subject to the requirements of this subpart.

§ 60.471 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Afterburner (A/B) means an exhaust gas incinerator used to control emissions of particulate matter.

Asphalt processing means the storage and blowing of asphalt.

Asphalt processing plant means a plant which blows asphalt for use in the manufacture of asphalt products.

Asphalt roofing plant means a plant which produces asphalt roofing products (shingles, roll roofing, siding, or saturated felt).

Asphalt storage tank means any tank used to store asphalt at asphalt roofing plants, petroleum refineries, and asphalt processing plants. Storage tanks containing cutback asphalts (asphalts diluted with solvents to reduce viscosity for low temperature applications) and emulsified asphalts (asphalts dispersed in water with an emulsifying agent) are not subject to this regulation.

Blowing still means the equipment in which air is blown through asphalt flux to change the softening point and penetration rate.

Catalyst means a substance which, when added to asphalt flux in a blowing still, alters the penetrating-softening point relationship or increases the rate of oxidation of the flux.

Coating blow means the process in which air is blown through hot asphalt flux to produce coating asphalt. The coating blow starts when the air is turned on and stops when the air is turned off.

Electrostatic precipitator (ESP) means an air pollution control device in which solid or liquid particulates in a gas stream are charged as they pass through an electric field and precipitated on a collection suface.

High velocity air filter (HVAF) means an air pollution control filtration device for the removal of sticky, oily, or liquid aerosol particulate matter from exhaust gas streams.

Mineral handling and storage facility means the areas in asphalt roofing plants in which minerals are unloaded from a carrier, the conveyor transfer points between the carrier and the storage silos, and the storage silos.

Saturator means the equipment in which asphalt is applied to felt to make asphalt roofing products. The term saturator includes the saturator, wet looper, and coater.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.472 Standards for particulate matter.

(a) On and after the date on which § 60.8(b) requires a performance test to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any saturator:

(1) Particulate matter in excess of:

(i) 0.04 kg/Mg (0.08 lb/ton) of asphalt shingle or mineral-surfaced roll roofing produced, or

(ii) 0.04 kg/Mg (0.08 lb/ton) of saturated felt or smooth-surfaced roll roofing produced;

(2) Exhaust gases with opacity greater than 20 percent; and

(3) Any visible emissions from a saturator capture system for more than 20 percent of any period of consecutive valid observations totaling 60 minutes. Saturators that were constructed before November 18, 1980, and that have not been reconstructed since that date and that become subject to these standards through modification are exempt from the visible emissions standard. Saturators that have been newly constructed or reconstructed since November 18, 1980 are subject to the visible emissions standard.

(b) On and after the date on which § 60.8(b) requires a performance test to be completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any blowing still:

(1) Particulate matter in excess of 0.67 kg/Mg (1.3 lb/ton) of asphalt

charged to the still when a catalyst is added to the still; and

(2) Particulate matter in excess of 0.71 kg/Mg (1.4 lb/ton) of asphalt charged to the still when a catalyst is added to the still and when No. 6 fuel oil is fired in the afterburner; and

(3) Particulate matter in excess of 0.60 kg/Mg (1.2 lb/ton) of asphalt charged to the still during blowing without a catalyst; and

(4) Particulate matter in excess of 0.64 kg/Mg (1.3 lb/ton) of asphalt charged to the still during blowing without a catalyst and when No. 6 fuel oil is fired in the afterburner; and

(5) Exhaust gases with an opacity greater than 0 percent unless an opacity limit for the blowing still when fuel oil is used to fire the afterburner has been established by the Administrator in accordance with the procedures in § 60.474(g).

(c) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any asphalt storage tank exhaust gases with opacity greater than 0 percent, except for one consecutive 15-minute period in any 24-hour period when the transfer lines are being blown for clearing. The control device shall not be bypassed during this 15-minute period. If, however, the emissions from any asphalt storage tank(s) are ducted to a control device for a saturator, the combined emissions shall meet the emission limit contained in paragraph (a) of this section during the time the saturator control device is operating. At any other time the asphalt storage tank(s) must meet the opacity limit specified above for storage tanks.

(d) Within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any mineral handling and storage facility emissions with opacity greater than 1 percent.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.473 Monitoring of operations.

(a) The owner or operator subject to the provisions of this subpart, and using either an electrostatic precipitator or a high velocity air filter to meet the emission limit in § 60.472(a)(1) and/or (b)(1) shall continuously monitor and record the temperature of the gas at the inlet of the control device. The temperature monitoring instrument shall have an accuracy of ±15 °C (±25 °F) over its range.

(b) The owner or operator subject to the provisions of this subpart and using an afterburner to meet the emission limit in § 60.472(a)(1) and/or (b)(1) shall continuously monitor and record the temperature in the combustion zone of the afterburner. The monitoring instrument shall have an accuracy of ±10 °C (±18 °F) over its range.

(c) An owner or operator subject to the provisions of this subpart and using a control device not mentioned in paragraphs (a) or (b) of this section shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may require continuous monitoring and will determine the process parameters to be monitored.

(d) The industry is exempted from the quarterly reports required under § 60.7(c). The owner/operator is required to record and report the operating temperature of the control device during the performance test and, as required by § 60.7(d), maintain a file of the temperature monitoring results for at least two years.

[47 FR 34143, Aug. 6, 1982, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.474 Test methods and procedures.

(a) For saturators, the owner or operator shall conduct performance tests required in § 60.8 as follows:

(1) If the final product is shingle or mineral-surfaced roll roofing, the tests

shall be conducted while 106.6-kg (235-lb) shingle is being produced.

(2) If the final product is saturated felt or smooth-surfaced roll roofing, the tests shall be conducted while 6.8-kg (15-lb) felt is being produced.

(3) If the final product is fiberglass shingle, the test shall be conducted while a nominal 100-kg (220-lb) shingle is being produced.

(b) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(c) The owner or operator shall determine compliance with the particulate matter standards in § 60.472 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$E=(c_s Q_{sd})/(PK)$

where:

E=emission rate of particulate matter, kg/Mg (lb/ton).

c_s=concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd}=volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P=asphalt roofing production rate or asphalt charging rate, Mg/hr (ton/hr).

K=conversion factor, 1000 g/kg [7000 (gr/lb)].

(2) Method 5A shall be used to determine the particulate matter concentration (c_s) and volumetric flow rate (Q_{sd}) of the effluent gas. For a saturator, the sampling time and sample volume for each run shall be at least 120 minutes and 3.00 dscm (106 dscf), and for the blowing still, at least 90 minutes or the duration of the coating blow or noncoating blow, whichever is greater, and 2.25 dscm (79.4 dscf).

(3) For the saturator, the asphalt roofing production rate (P) for each run shall be determined as follows: The amount of asphalt roofing produced on the shingle or saturated felt process lines shall be obtained by direct measurement. The asphalt roofing production rate is the amount produced divided by the time taken for the run.

(4) For the blowing still, the asphalt charging rate (P) shall be computed for each run using the following equation:

$P=(Vd)/(K' \theta)$

where:

P=asphalt charging rate to blowing still, Mg/hr (ton/hr).

V=volume of asphalt charged, m^3 (ft^3).

d=density of asphalt, kg/m^3 (lb/ft^3).

K′=conversion factor, 1000 kg/Mg (2000 lb/ton).

θ=duration of test run, hr.

(i) The volume (V) of asphalt charged shall be measured by any means accurate to within 10 percent.

(ii) The density (d) of the asphalt shall be computed using the following equation:

$$d = K_1 - K_2 T_i$$

Where:

d = Density of the asphalt, kg/m^3 (lb/ft^3)

K_1 = 1056.1 kg/m^3 (metric units)

= 64.70 lb/ft^3 (English Units)

K_2 = 0.6176 kg/(m^3 °C) (metric units)

= 0.0694 lb/(ft^3 °F) (English Units)

T_i = temperature at the start of the blow, °C (°F)

(5) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(d) The Administrator will determine compliance with the standards in § 60.472(a)(3) by using Method 22, modified so that readings are recorded every 15 seconds for a period of consecutive observations during representative conditions (in accordance with § 60.8(c)) totaling 60 minutes. A performance test shall consist of one run.

(e) The owner or operator shall use the monitoring device in § 60.473 (a) or (b) to monitor and record continuously the temperature during the particulate matter run and shall report the results to the Administrator with the performance test results.

(f) If at a later date the owner or operator believes that the emission limits in § 60.472(a) and (b) are being met even though one of the conditions listed in this paragraph exist, he may submit a written request to the Administrator to repeat the performance test and procedure outlined in paragraph (c) of this section.

(1) The temperature measured in accordance with § 60.473(a) is exceeding that measured during the performance test.

(2) The temperature measured in accordance with § 60.473(b) is lower than that measured during the performance test.

(g) If fuel oil is to be used to fire an afterburner used to control emissions from a blowing still, the owner or operator may petition the Administrator in accordance with § 60.11(e) of the General Provisions to establish an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. To obtain this opacity standard, the owner or operator must request the Administrator to determine opacity during an initial, or subsequent, performance test when fuel oil is used to fire the afterburner. Upon receipt of the results of the performance test, the Administrator will make a finding concerning compliance with the mass standard for the blowing still. If the Administrator finds that the facility was in compliance with the mass standard during the performance test but failed to meet the zero opacity standard, the Administrator will establish and promulgate in the FEDERAL REGISTER an opacity standard for the blowing still that will be the opacity standard when fuel oil is used to fire the afterburner. When the afterburner is fired with natural gas, the zero percent opacity remains the applicable opacity standard.

[54 FR 6677, Feb. 14, 1989, as amended 54 FR 27016, June 27, 1989; 65 FR 61762, Oct. 17, 2000]

Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

SOURCE: 48 FR 48335, Oct. 18, 1983, unless otherwise noted.

§ 60.480 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in § 60.481) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 5, 1981, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in § 60.486(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) is exempt from § 60.482.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from § 60.482.

(4) Any affected facility that produces beverage alcohol is exempt from § 60.482.

(5) Any affected facility that has no equipment in VOC service is exempt from § 60.482.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§ 60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of § 60.485(d), (e), and (f), and § 60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.481 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$$A = Y \times (B \div 100);$$

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 1982 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

TABLE FOR DETERMINING APPLICABLE FOR B

Subpart applicable to facility	Value of B to be used in equation
VV	12.5
DDD	12.5
GGG	7.0
KKK	4.5

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgement and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007–2900).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.485(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa)(0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of § 60.485(d) specify how to determine that a piece of equipment is not in VOC service.)

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in § 60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as indicated by one of the following: an instrument reading of 10,000 ppm or greater, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

Sampling connection system means an assembly of equipment within a process unit used during periods of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in § 60.489.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in § 60.2 Definitions.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 49 FR 26738, June 29, 1984; 60 FR 43258, Aug. 18, 1995; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482–1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§ 60.482–1 through 60.482–10 or § 60.480(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§ 60.482–1 to 60.482–10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in § 60.485.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§ 60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, and 60.482–10 as provided in § 60.484.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§ 60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, or 60.482–10, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of §§ 60.482–2 to 60.482–10 if it is identified as required in § 60.486(e)(5).

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 78276, Dec. 14, 2000]

§ 60.482–2 Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485(b), except as provided in § 60.482–1(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a), *Provided* the following requirements are met:

(1) Each dual mechanical seal system is—

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of § 60.482–10; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm, and

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(6)(i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (d)(5)(ii), a leak is detected.

(ii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9.

(iii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Any pump that is designated, as described in § 60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing,

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in § 60.485(c), and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of § 60.482–10, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in § 60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482–3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in § 60.482–1(c) and paragraph (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of § 60.482–10; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) shall be checked daily or shall be equipped with an audible alarm.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of § 60.482–10, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in § 60.486(e) (1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a)–(h) if the compressor:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as

measured by the methods specified in § 60.485(c); and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from § 60.482(a), (b), (c), (d), (e), and (h), provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482–4 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in § 60.485(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in § 60.482–9.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in § 60.485(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in § 60.482–10 is exempted from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in § 60.482–9.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482–5 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in § 60.482–1(c). Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of § 60.482–10; or

(4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(i) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(c) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

[60 FR 43258, Aug. 18, 1995, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482–6 Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in § 60.482–1(c).

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 78277, Dec. 14, 2000]

§ 60.482–7 Standards: Valves in gas/vapor service and in light liquid service.

(a) Each valve shall be monitored monthly to detect leaks by the methods specified in § 60.485(b) and shall comply with paragraphs (b) through (e), except as provided in paragraphs (f), (g), and (h), § 60.483–1, 2, and § 60.482–1(c).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in § 60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in § 60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in § 60.485(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in § 60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe

to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in § 60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either becomes an affected facility through § 60.14 or § 60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61762, Oct. 17, 2000]

§ 60.482–8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in § 60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 60.482–9.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under § 60.482–7(e).

[48 CFR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

§ 60.482–9 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with § 60.482–10.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit shutdown occurs sooner than 6 months after the first process unit shutdown.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

§ 60.482–10 Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of §60.18.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:

(i) Conduct an initial inspection according to the procedures in § 60.485(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in § 60.485(b); and

(ii) Conduct annual inspections according to the procedures in § 60.485(b).

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through §§ 60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in § 60.486(c).

(4) For each inspection conducted in accordance with § 60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

[48 FR 48335, Oct. 18, 1983, as amended at 51 FR 2702, Jan. 21, 1986; 60 FR 43258, Aug. 18, 1995; 61 FR 29878, June 12, 1996; 65 FR 78277, Dec. 14, 2000]

§ 60.483–1 Alternative standards for valves—allowable percentage of valves leaking.

(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in § 60.487(d).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with § 60.482–7(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in § 60.485(b).

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§60.483–2 Alternative standards for valves—skip period leak detection and repair.

(a)(1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d).

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7.

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7 but can again elect to use this section.

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section.

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§60.484 Equivalence of means of emission limitation.

(a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalance for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.

(b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.

(2) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.

(3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.

(c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:

(1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.

(2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.

(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.

(5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4).

(6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.

(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.

(e)(1) After a request for determination of equivalence is received, the Administrator will publish a notice in the FEDERAL REGISTER and provide the opportunity for public hearing if the Administrator judges that the request may be approved.

(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the FEDERAL REGISTER.

(3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the Clean Air Act.

(f)(1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.

(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.485 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§ 60.482, 60.483, and 60.484 as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall determine compliance with the no detectable emission standards in §§ 60.482–2(e), 60.482–3(i), 60.482–4, 60.482–7(f), and 60.482–10(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see § 60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see § 60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{max} = K_1 + K_2 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec)

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units)
= 28.56 ft/sec (English units)

K_2 = 0.7084 m^4/(MJ-sec) (metric units)
= 0.087 ft^4/(Btu-sec) (English units)

(4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740×10^7 (g-mole)(MJ)/ (ppm-scm-kcal) (metric units)
= 4.674×10^8 [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

C_i = Concentration of sample component ''i,'' ppm

H_i = net heat of combustion of sample component ''i'' at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole

(5) Method 18 and ASTM D2504–67, 77, or 88 (Reapproved 1993) (incorporated by reference—see § 60.17) shall be used to determine the concentration of sample component ''i.''

(6) ASTM D2382–76 or 88 or D4809–95 (incorporated by reference—see § 60.17) shall be used to determine the net heat of combustion of component ''i'' if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

[54 FR 6678, Feb. 14, 1989, as amended at 54 FR 27016, June 27, 1989; 65 FR 61763, Oct. 17, 2000]

§ 60.486 Recordkeeping requirements.

(a)(1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(b) When each leak is detected as specified in §§ 60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in § 60.482–7(c) and no leak has been detected during those 2 months.

(3) The identification on equipment except on a valve, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§ 60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

(3) Repair methods applied in each attempt to repair the leak.

(4) ''Above 10,000'' if the maximum instrument reading measured by the methods specified in § 60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.

(5) ''Repair delayed'' and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(9) The date of successful repair of the leak.

(d) The following information pertaining to the design requirements for closed vent systems and control devices described in § 60.482–10 shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in § 60.482–10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed vent systems and control devices required in §§ 60.482–2, 60.482–3, 60.482–4, and 60.482–5 are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§ 60.482–2, 60.482–3, 60.482–4, and 60.482–5.

(e) The following information pertaining to all equipment subject to the requirements in §§ 60.482–1 to 60.482–10 shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§ 60.482–2(e), 60.482–3(i) and 60.482–7(f).

(ii) The designation of equipment as subject to the requirements of § 60.482–2(e), § 60.482–3(i), or § 60.482–7(f) shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with § 60.482–4.

(4)(i) The dates of each compliance test as required in §§ 60.482–2(e), 60.482–3(i), 60.482–4, and 60.482–7(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(f) The following information pertaining to all valves subject to the requirements of § 60.482–7(g) and (h) and to all pumps subject to the requirements of § 60.482–2(g) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with § 60.483–2:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§ 60.482–2(d)(5) and 60.482–3(e)(2) and explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in § 60.480(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of § 60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.487 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of § 60.482–7, excluding those valves designated for no detectable emissions under the provisions of § 60.482–7(f).

(3) Number of pumps subject to the requirements of § 60.482–2, excluding those pumps designated for no detectable emissions under the provisions of § 60.482–2(e) and those pumps complying with § 60.482–2(f).

(4) Number of compressors subject to the requirements of § 60.482–3, excluding those compressors designated for no detectable emissions under the provisions of § 60.482–3(i) and those compressors complying with § 60.482–3(h).

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in § 60.486:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in § 60.482(7)(b) or § 60.483–2,

(ii) Number of valves for which leaks were not repaired as required in § 60.482–7(d)(1),

(iii) Number of pumps for which leaks were detected as described in § 60.482–2(b) and (d)(6)(i),

(iv) Number of pumps for which leaks were not repaired as required in § 60.482–2(c)(1) and (d)(6)(ii),

(v) Number of compressors for which leaks were detected as described in § 60.482–3(f),

(vi) Number of compressors for which leaks were not repaired as required in § 60.482–3(g)(1), and

(vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of §§ 60.483–1 or 60.483–2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with § 60.8 of the General Provisions. The provisions of § 60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61763, Oct. 17, 2000]

§ 60.488 Reconstruction.

For the purposes of this subpart:

(a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the ''fixed capital cost of the new components'' or the ''fixed capital costs that would be required to construct a comparable new facility'' under § 60.15: pump seals, nuts and bolts, rupture disks, and packings.

(b) Under § 60.15, the ''fixed capital cost of new components'' includes the fixed capital cost of all depreciable components (except components specified in § 60.488 (a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the ''Applicability and designation of affected facility'' section of the appropriate subpart.) For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

[49 FR 22608, May 30, 1984]

§ 60.489 List of chemicals produced by affected facilities.

The following chemicals are produced, as intermediates or final products, by process units covered under this subpart. The applicability date for process units producing one or more of these chemicals is January 5, 1981.

CAS No. [a]	Chemical
105–57–7	Acetal.
75–07–0	Acetaldehyde.
107–89–1	Acetaldol.
60–35–5	Acetamide.
103–84–4	Acetanilide.
64–19–7	Acetic acid.
108–24–7	Acetic anhydride.
67–64–1	Acetone.
75–86–5	Acetone cyanohydrin.
75–05–8	Acetonitrile.
98–86–2	Acetophenone.
75–36–5	Acetyl chloride.
74–86–2	Acetylene.
107–02–8	Acrolein.
79–06–1	Acrylamide.
79–10–7	Acrylic acid.
107–13–1	Acrylonitrile.
124–04–9	Adipic acid.
111–69–3	Adiponitrile.
(b)	Alkyl naphthalenes.
107–18–6	Allyl alcohol.
107–05–1	Allyl chloride.
1321–11–5	Aminobenzoic acid.
111–41–1	Aminoethylethanolamine.
123–30–8	p-Aminophenol.
628–63–7, 123–92–2.	Amyl acetates.
71–41–0[c]	Amyl alcohols.
110–58–7	Amyl amine.
543–59–9	Amyl chloride.
110–66–7[c]	Amyl mercaptans.
1322–06–1	Amyl phenol.
62–53–3	Aniline.
142–04–1	Aniline hydrochloride.
29191–52–4	Anisidine.
100–66–3	Anisole.
118–92–3	Anthranilic acid.
84–65–1	Anthraquinone.
100–52–7	Benzaldehyde.
55–21–0	Benzamide.
71–43–2	Benzene.
98–48–6	Benzenedisulfonic acid.
98–11–3	Benzenesulfonic acid.
134–81–6	Benzil.
76–93–7	Benzilic acid.
65–85–0	Benzoic acid.
119–53–9	Benzoin.
100–47–0	Benzonitrile.
119–61–9	Benzophenone.
98–07–7	Benzotrichloride.
98–88–4	Benzoyl chloride.
100–51–6	Benzyl alcohol.
100–46–9	Benzylamine.
120–51–4	Benzyl benzoate.
100–44–7	Benzyl chloride.
98–87–3	Benzyl dichloride.
92–52–4	Biphenyl.
80–05–7	Bisphenol A.
10–86–1	Bromobenzene.
27497–51–4	Bromonaphthalene.
106–99–0	Butadiene.
106–98–9	1-butene.
123–86–4	n-butyl acetate.
141–32–2	n-butyl acrylate.
71–36–3	n-butyl alcohol.
78–92–2	s-butyl alcohol.
75–65–0	t-butyl alcohol.
109–73–9	n-butylamine.
13952–84–6	s-butylamine.
75–64–9	t-butylamine.
98–73–7	p-tert-butyl benzoic acid.
107–88–0	1,3-butylene glycol.
123–72–8	n-butyraldehyde.
107–92–6	Butyric acid.

CAS No. [a]	Chemical
106–31–0	Butyric anhydride.
109–74–0	Butyronitrile.
105–60–2	Caprolactam.
75–1–50	Carbon disulfide.
558–13–4	Carbon tetrabromide.
56–23–5	Carbon tetrachloride.
9004–35–7	Cellulose acetate.
79–11–8	Chloroacetic acid.
108–42–9	m-chloroaniline.
95–51–2	o-chloroaniline.
106–47–8	p-chloroaniline.
35913–09–8	Chlorobenzaldehyde.
108–90–7	Chlorobenzene.
118–91–2, 535–80–8, 74–11–3[c].	Chlorobenzoic acid.
2136–81–4, 2136–89–2, 5216–25–1[c].	Chlorobenzotrichloride.
1321–03–5	Chlorobenzoyl chloride.
25497–29–4	Chlorodifluoromethane.
75–45–6	Chlorodifluoroethane.
67–66–3	Chloroform.
25586–43–0	Chloronaphthalene.
88–73–3	o-chloronitrobenzene.
100–00–5	p-chloronitrobenzene.
25167–80–0	Chlorophenols.
126–99–8	Chloroprene.
7790–94–5	Chlorosulfonic acid.
108–41–8	m-chlorotoluene.
95–49–8	o-chlorotoluene.
106–43–4	p-chlorotoluene.
75–72–9	Chlorotrifluoromethane.
108–39–4	m-cresol.
95–48–7	o-cresol.
106–44–5	p-cresol.
1319–77–3	Mixed cresols.
1319–77–3	Cresylic acid.
4170–30–0	Crotonaldehyde.
3724–65–0	Crotonic acid.
98–82–8	Cumene.
80–15–9	Cumene hydroperoxide.
372–09–8	Cyanoacetic acid.
506–77–4	Cyanogen chloride.
108–80–5	Cyanuric acid.
108–77–0	Cyanuric chloride.
110–82–7	Cyclohexane.
108–93–0	Cyclohexanol.
108–94–1	Cyclohexanone.
110–83–8	Cyclohexene.
108–91–8	Cyclohexylamine.
111–78–4	Cyclooctadiene.
112–30–1	Decanol.
123–42–2	Diacetone alcohol.
27576–04–1	Diaminobenzoic acid.
95–76–1, 95–82–9, 554–00–7, 608–27–5, 608–31–1, 626–43–7, 27134–27–6, 57311–92–9[c].	Dichloroaniline.
541–73–1	m-dichlorobenzene.
95–50–1	o-dichlorobenzene.
106–46–7	p-dichlorobenzene.
75–71–8	Dichlorodifluoromethane.
111–44–4	Dichloroethyl ether.
107–06–2	1,2-dichloroethane (EDC).
96–23–1	Dichlorohydrin.
26952–23–8	Dichloropropene.
101–83–7	Dicyclohexylamine.
109–89–7	Diethylamine.
111–46–6	Diethylene glycol.
112–36–7	Diethylene glycol diethyl ether.
111–96–6	Diethylene glycol dimethyl ether.
112–34–5	Diethylene glycol monobutyl ether.
124–17–4	Diethylene glycol monobutyl ether acetate.
111–90–0	Diethylene glycol monoethyl ether.
112–15–2	Diethylene glycol monoethyl ether acetate.
111–77–3	Diethylene glycol monomethyl ether.
64–67–5	Diethyl sulfate.
75–37–6	Difluoroethane.
25167–70–8	Diisobutylene.
26761–40–0	Diisodecyl phthalate.
27554–26–3	Diisooctyl phthalate.
674–82–8	Diketene.
124–40–3	Dimethylamine.
121–69–7	N,N-dimethylaniline.
115–10–6	N,N-dimethyl ether.
68–12–2	N,N-dimethylformamide.
57–14–7	Dimethylhydrazine.
77–78–1	Dimethyl sulfate.
75–18–3	Dimethyl sulfide.
67–68–5	Dimethyl sulfoxide.
120–61–6	Dimethyl terephthalate.
99–34–3	3,5-dinitrobenzoic acid.
51–28–5	Dinitrophenol.
25321–14–6	Dinitrotoluene.
123–91–1	Dioxane.
646–06–0	Dioxilane.
122–39–4	Diphenylamine.
101–84–8	Diphenyl oxide.
102–08–9	Diphenyl thiourea.
25265–71–8	Dipropylene glycol.
25378–22–7	Dodecene.
28675–17–4	Dodecylaniline.
27193–86–8	Dodecylphenol.
106–89–8	Epichlorohydrin.
64–17–5	Ethanol.
141–43–5[c]	Ethanolamines.
141–78–6	Ethyl acetate.
141–97–9	Ethyl acetoacetate.
140–88–5	Ethyl acrylate.
75–04–7	Ethylamine.
100–41–4	Ethylbenzene.
74–96–4	Ethyl bromide.
9004–57–3	Ethylcellulose.
75–00–3	Ethyl chloride.
105–39–5	Ethyl chloroacetate.
105–56–6	Ethylcyanoacetate.
74–85–1	Ethylene.
96–49–1	Ethylene carbonate.
107–07–3	Ethylene chlorohydrin.
107–15–3	Ethylenediamine.
106–93–4	Ethylene dibromide.
107–21–1	Ethylene glycol.
111–55–7	Ethylene glycol diacetate.
110–71–4	Ethylene glycol dimethyl ether.
111–76–2	Ethylene glycol monobutyl ether.
112–07–2	Ethylene glycol monobutyl ether acetate.
110–80–5	Ethylene glycol monoethyl ether.
111–15–9	Ethylene glycol monethyl ether acetate.
109–86–4	Ethylene glycol monomethyl ether.
110–49–6	Ethylene glycol monomethyl ether acetate.
122–99–6	Ethylene glycol monophenyl ether.
2807–30–9	Ethylene glycol monopropyl ether.
75–21–8	Ethylene oxide.
60–29–7	Ethyl ether
104–76–7	2-ethylhexanol.
122–51–0	Ethyl orthoformate.
95–92–1	Ethyl oxalate.
41892–71–1	Ethyl sodium oxalacetate.
50–00–0	Formaldehyde.
75–12–7	Formamide.
64–18–6	Formic acid.

CAS No. [a]	Chemical
110–17–8	Fumaric acid.
98–01–1	Furfural.
56–81–5	Glycerol.
26545–73–7	Glycerol dichlorohydrin.
25791–96–2	Glycerol triether.
56–40–6	Glycine.
107–22–2	Glyoxal.
118–74–1	Hexachlorobenzene.
67–72–1	Hexachloroethane.
36653–82–4	Hexadecyl alcohol.
124–09–4	Hexamethylenediamine.
629–11–8	Hexamethylene glycol.
100–97–0	Hexamethylenetetramine.
74–90–8	Hydrogen cyanide.
123–31–9	Hydroquinone.
99–96–7	p-hydroxybenzoic acid.
26760–64–5	Isoamylene.
78–83–1	Isobutanol.
110–19–0	Isobutyl acetate.
115–11–7	Isobutylene.
78–84–2	Isobutyraldehyde.
79–31–2	Isobutyric acid.
25339–17–7	Isodecanol.
26952–21–6	Isooctyl alcohol.
78–78–4	Isopentane.
78–59–1	Isophorone..
121–91–5	Isophthalic acid..
78–79–5	Isoprene.
67–63–0	Isopropanol.
108–21–4	Isopropyl acetate.
75–31–0	Isopropylamine.
75–29–6	Isopropyl chloride.
25168–06–3	Isopropylphenol.
463–51–4	Ketene.
(b)	Linear alkyl sulfonate..
123–01–3	Linear alkylbenzene (linear dodecylbenzene)..
110–16–7	Maleic acid.
108–31–6	Maleic anhydride.
6915–15–7	Malic acid.
141–79–7	Mesityl oxide.
121–47–1	Metanilic acid.
79–41–4	Methacrylic acid.
563–47–3	Methallyl chloride.
67–56–1	Methanol.
79–20–9	Methyl acetate.
105–45–3	Methyl acetoacetate.
74–89–5	Methylamine.
100–61–8	n-methylaniline.
74–83–9	Methyl bromide.
37365–71–2	Methyl butynol.
74–87–3	Methyl chloride. .
108–87–2	Methylcyclohexane.
1331–22–2	Methylcyclohexanone.
75–09–2	Methylene chloride.
101–77–9	Methylene dianiline.
101–68–8	Methylene diphenyl diisocyanate.
78–93–3	Methyl ethyl ketone.
107–31–3	Methyl formate.
108–11–2	Methyl isobutyl carbinol.
108–10–1	Methyl isobutyl ketone.
80–62–6	Methyl methacrylate.
77–75–8	Methylpentynol.
98–83–9	a-methylstyrene.
110–91–8	Morpholine.
85–47–2	a-naphthalene sulfonic acid.
120–18–3	b-naphthalene sulfonic acid .
90–15–3	a-naphthol.
135–19–3	b-naphthol.
75–98–9	Neopentanoic acid.
88–74–4	o-nitroaniline.
100–01–6	p-nitroaniline.
91–23–6	o-nitroanisole.
100–17–4	p-nitroanisole.
98–95–3	Nitrobenzene.
27178–83–2[c]	Nitrobenzoic acid (o,m, and p).
79–24–3	Nitroethane.
75–52–5	Nitromethane.
88–75–5	2-Nitrophenol.
25322–01–4	Nitropropane.
1321–12–6	Nitrotoluene.
27215–95–8	Nonene.
25154–52–3	Nonylphenol.
27193–28–8	Octylphenol.
123–63–7	Paraldehyde.
115–77–5	Pentaerythritol.
109–66–0	n-pentane.
109–67–1	1-pentene
127–18–4	Perchloroethylene.
594–42–3	Perchloromethyl mercaptan.
94–70–2	o-phenetidine.
156–43–4	p-phenetidine.
108–95–2	Phenol.
98–67–9, 585–38–6, 609–46–1, 1333–39–7[c].	Phenolsulfonic acids.
91–40–7	Phenyl anthranilic acid.
(b)	Phenylenediamine.
75–44–5	Phosgene.
85–44–9	Phthalic anhydride.
85–41–6	Phthalimide.
108–99–6	b-picoline.
110–85–0	Piperazine.
9003–29–6, 25036–29–7[c].	Polybutenes.
25322–68–3	Polyethylene glycol.
25322–69–4	Polypropylene glycol.
123–38–6	Propionaldehyde.
79–09–4	Propionic acid.
71–23–8	n-propyl alcohol.
107–10–8	Propylamine.
540–54–5	Propyl chloride.
115–07–1	Propylene.
127–00–4	Propylene chlorohydrin.
78–87–5	Propylene dichloride.
57–55–6	Propylene glycol.
75–56–9	Propylene oxide.
110–86–1	Pyridine.
106–51–4	Quinone.
108–46–3	Resorcinol.
27138–57–4	Resorcylic acid.
69–72–7	Salicylic acid.
127–09–3	Sodium acetate.
532–32–1	Sodium benzoate.
9004–32–4	Sodium carboxymethyl cellulose.
3926–62–3	Sodium chloroacetate.
141–53–7	Sodium formate.
139–02–6	Sodium phenate.
110–44–1	Sorbic acid.
100–42–5	Styrene..
110–15–6	Succinic acid.
110–61–2	Succinonitrile.
121–57–3	Sulfanilic acid.
126–33–0	Sulfolane.
1401–55–4	Tannic acid.
100–21–0	Terephthalic acid.
79–34–5[c]	Tetrachloroethanes.
117–08–8	Tetrachlorophthalic anhydride.
78–00–2	Tetraethyl lead.
119–64–2	Tetrahydronaphthalene.
85–43–8	Tetrahydrophthalic anhydride.
75–74–1	Tetramethyl lead.
110–60–1	Tetramethylenediamine.
110–18–9	Tetramethylethylenediamine.
108–88–3	Toluene.
95–80–7	Toluene-2,4-diamine.
584–84–9	Toluene-2,4-diisocyanate.
26471–62–5	Toluene diisocyanates (mixture).

CAS No. [a]	Chemical
1333–07–9	Toluenesulfonamide.
104–15–4 [c]	Toluenesulfonic acids.
98–59–9	Toluenesulfonyl chloride.
26915–12–8	Toluidines.
87–61–6, 108–70–3, 120–82–1 [c].	Trichlorobenzenes.
71–55–6	1,1,1-trichloroethane.
79–00–5	1,1,2-trichloroethane.
79–01–6	Trichloroethylene.
75–69–4	Trichlorofluoromethane.
96–18–4	1,2,3-trichloropropane.
76–13–1	1,1,2-trichloro-1,2,2-trifluoroethane.
121–44–8	Triethylamine.
112–27–6	Triethylene glycol.
112–49–2	Triethylene glycol dimethyl ether.
7756–94–7	Triisobutylene.
75–50–3	Trimethylamine.
57–13–6	Urea.
108–05–4	Vinyl acetate.
75–01–4	Vinyl chloride.
75–35–4	Vinylidene chloride.
25013–15–4	Vinyl toluene.
1330–20–7	Xylenes (mixed).
95–47–6	o-xylene.
106–42–3	p-xylene.
1300–71–6	Xylenol.
1300–73–8	Xylidine.

[a] CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[b] No CAS number(s) have been assigned to this chemical, its isomers, or mixtures containing these chemicals.

[c] CAS numbers for some of the isomers are listed; the standards apply to all of the isomers and mixtures, even if CAS numbers have not been assigned.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

Subpart WW—Standards of Performance for the Beverage Can Surface Coating Industry

SOURCE: 48 FR 38737, Aug. 25, 1983, unless otherwise noted.

§ 60.490 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to the following affected facilities in beverage can surface coating lines: each exterior base coat operation, each overvarnish coating operation, and each inside spray coating operation.

(b) The provisions of this subpart apply to each affected facility which is identified in paragraph (a) of this section and commences construction, modification, or reconstruction after November 26, 1980.

§ 60.491 Definitions.

(a) All terms which are used in this subpart and are not defined below are given the same meaning as in the Act and subpart A of this part.

(1) *Beverage can* means any two-piece steel or aluminum container in which soft drinks or beer, including malt liquor, are packaged. The definition does not include containers in which fruit or vegetable juices are packaged.

(2) *Exterior base coating operation* means the system on each beverage can surface coating line used to apply a coating to the exterior of a two-piece beverage can body. The exterior base coat provides corrosion resistance and a background for lithography or printing operations. The exterior base coat operation consists of the coating application station, flashoff area, and curing oven. The exterior base coat may be pigmented or clear (unpigmented).

(3) *Inside spray coating operation* means the system on each beverage can surface coating line used to apply a coating to the interior of a two-piece beverage can body. This coating provides a protective film between the contents of the beverage can and the metal can body. The inside spray coating operation consists of the coating application station, flashoff area, and curing oven. Multiple applications of an inside spray coating are considered to be a single coating operation.

(4) *Overvarnish coating operation* means the system on each beverage can surface coating line used to apply a coating over ink which reduces friction for automated beverage can filling equipment, provides gloss, and protects the finished beverage can body from abrasion and corrosion. The overvarnish coating is applied to two-piece beverage can bodies. The overvarnish coating operation consists of the coating application station, flashoff area, and curing oven.

(5) *Two-piece can* means any beverage can that consists of a body manufactured from a single piece of steel or aluminum and a top. Coatings for a two-piece can are usually applied after fabrication of the can body.

(6) *VOC content* means all volatile organic compounds (VOC) that are in a coating. VOC content is expressed in

terms of kilograms of VOC per liter of coating solids.

(b) Notations used under § 60.493 of this subpart are defined below:

C_a=the VOC concentration in each gas stream leaving the control device and entering the atmosphere (parts per million as carbon)

C_b=the VOC concentration in each gas stream entering the control device (parts per million as carbon)

D_c=density of each coating, as received (kilograms per liter)

D_d=density of each VOC-solvent added to coatings (kilograms per liter)

D_r=density of VOC-solvent recovered by an emission control device (kilograms per liter)

E=VOC destruction efficiency of the control device (fraction)

F=the proportion of total VOC emitted by an affected facility which enters the control device to total emissions (fraction)

G=the volume-weighted average of VOC in coatings consumed in a calendar month per volume of coating solids applied (kilograms per liter of coating solids)

H_e=the fraction of VOC emitted at the coater and flashoff areas captured by a collection system

H_h=the fraction of VOC emitted at the cure oven captured by a collection system

L_c=the volume of each coating consumed, as received (liters)

L_d=the volume of each VOC-solvent added to coatings (liters)

L_r=the volume of VOC-solvent recovered by an emission control device (liters)

L_s=the volume of coating solids consumed (liters)

M_d=the mass of VOC-solvent added to coatings (kilograms)

M_o=the mass of VOC-solvent in coatings consumed, as received (kilograms)

M_r=the mass of VOC-solvent recovered by emission control device (kilograms)

N=the volume-weighted average mass of VOC emissions to atmosphere per unit volume of coating solids applied (kilograms per liter of coating solids)

Q_a=the volumetric flow rate of each gas stream leaving the control device and entering the atmosphere (dry standard cubic meters per hour)

Q_b=the volumetric flow of each gas stream entering the control device (dry standard cubic meters per hour)

R=the overall emission reduction efficiency for an affected facility (fraction)

S_e=the fraction of VOC in coating and diluent VOC-solvent emitted at the coater and flashoff area for a coating operation

S_h=the fraction of VOC in coating and diluent solvent emitted at the cure oven for a coating operation

V_s=the proportion of solids in each coating, as received (fraction by volume)

W_o=the proportion of VOC in each coating, as received (fraction by weight).

[48 FR 38737, Aug. 25, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

§ 60.492 Standards for volatile organic compounds.

On or after the date on which the initial performance test required by § 60.8(a) is completed, no owner or operator subject to the provisions of this subpart shall discharge or cause the discharge of VOC emissions to the atmoshpere that exceed the following volume-weighted calendar-month average emissions:

(a) 0.29 kilogram of VOC per litre of coating solids from each two-piece can exterior base coating operation, except clear base coat;

(b) 0.46 kilogram of VOC per litre of coating solids from each two-piece can clear base coating operation and from each overvarnish coating operation; and

(c) 0.89 kilogram of VOC per litre of coating solids from each two-piece can inside spray coating operation.

§ 60.493 Performance test and compliance provisions.

(a) Section 60.8(d) does not apply to monthly performance tests and § 60.8(f) does not apply to the performance test procedures required by this subpart.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each calendar month for each affected facility.

(1) The owner or operator shall use the following procedures for each affected facility that does not use a capture system and a control device to comply with the emission limit specified under § 60.492. The owner or operator shall determine the VOC-content of the coatings from formulation data supplied by the manufacturer of the coating or by an analysis of each coating, as received, using Method 24. The Administrator may require the owner or operator who uses formulation data supplied by the manufacturer of the coating to determine the VOC content of coatings using Method 24 or an

equivalent or alternative method. The owner or operator shall determine from company records the volume of coating and the mass of VOC-solvent added to coatings. If a common coating distribution system serves more than one affected facility or serves both affected and exiting facilities, the owner or operator shall estimate the volume of coating used at each facility by using the average dry weight of coating, number of cans, and size of cans being processed by each affected and existing facility or by other procedures acceptable to the Administrator.

(i) Calculate the volume-weighted average of the total mass of VOC per volume of coating solids used during the calendar month for each affected facility, except as provided under paragraph (b)(1)(iv) of this section. The volume-weighted average of the total mass of VOC per volume of coating solids used each calendar month will be determined by the following procedures.

(A) Calculate the mass of VOC used (M_o+M_d) during the calendar month for the affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}, \qquad (1)$$

[$\Sigma L_{dj}D_{dj}$ will be 0 if no VOC solvent is added to the coatings, as received.] where n is the number of different coatings used during the calendar month and m is the number of different diluent VOC-solvents used during the calendar month.

(B) Calculate the total volume of coating solids used (L_s) in the calendar month for the affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}, \qquad (2)$$

where n is the number of different coatings used during the calendar month.

(C) Calculate the volume-weighted average mass of VOC per volume of solids used (G) during the calendar month for the affected facility by the following equation:

$$G = \frac{M_o + M_d}{L_s} \qquad (3)$$

(ii) Calculate the volume-weighted average of VOC emissions discharged to the atmosphere (N) during the calendar month for the affected facility by the following equation:

$$N = G. \qquad (4)$$

(iii) Where the value of the volume-weighted average mass of VOC per volume of solids discharged to the atmosphere (N) is equal to or less than the applicable emission limit specified under § 60.492, the affected facility is in compliance.

(iv) If each individual coating used by an affected facility has a VOC content equal to or less than the limit specified under § 60.492, the affected facility is in compliance provided no VOC-solvents are added to the coating during distribution or application.

(2) An owner or operator shall use the following procedures for each affected facility that uses a capture system and a control device that destroys VOC (e.g., incinerator) to comply with the emission limit specified under § 60.492.

(i) Determine the overall reduction efficiency (R) for the capture system and control device.

For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed in paragraphs (b)(2)(i) (A), (B), and (C) of this section. In subsequent months, the owner or operator may use the most recently determined overall reduction efficiency for the performance test providing control device and capture system operating conditions have not changed. The procedure in paragraphs (b)(2)(i), (A), (B), and (C) of this section, shall be repeated when directed by the Administrator or when the owner or operator elects to operate the control device or capture system at conditions different from the initial performance test.

(A) Determine the fraction (F) of total VOC used by the affected facility that enters the control device using the following equation:

$$F = S_e H_e + S_h H_h, \qquad (5)$$

where H_e an H_h shall be determined by a method that has been previously approved by the Administrator. The owner or operator may use the values of S_e and S_h specified in Table 1 or other values determined by a method that has been previously approved by the Administrator.

TABLE 1—DISTRIBUTION OF VOC EMISSIONS

Coating operation	Emission distribution	
	Coater/ flashoff (S_e)	Curing oven (S_h)
Two-piece aluminum or steel can:		
Exterior base coat operation	0.75	0.25
Overvarnish coating operation	0.75	0.25
Inside spray coating operation	0.80	0.20

(B) Determine the destruction efficiency of the control device (E) using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the device by the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi} C_{bi} - \sum_{j=1}^{m} Q_{aj} C_{aj}}{\sum_{i=1}^{n} Q_{bi} C_{bi}}, \qquad (6)$$

where n is the number of vents before the control device, and m is the number of vents after the control device.

(C) Determine overall reduction efficiency (R) using the following equation:

$$R = EF \qquad (7)$$

(ii) Calculate the volume-weighted average of the total mass of VOC per volume of coating solids (G) used during the calendar month for the affected facility using equations (1), (2), and (3).

(iii) Calculate the volume-weighted average of VOC emissions discharged to the atmosphere (N) during the calendar month by the following equation:

$$N = G \times [1 - R] \qquad (8)$$

(iv) If the volume-weighted average of mass of VOC emitted to the atmosphere for the calendar month (N) is equal to or less than the applicable emission limit specified under § 60.492, the affected facility is in compliance.

(3) An owner or operator shall use the following procedure for each affected facility that uses a capture system and a control device that recovers the VOC (e.g., carbon adsorber) to comply with the applicable emission limit specified under § 60.492.

(i) Calculate the volume-weighted average of the total mass of VOC per unit volume of coating solids applied (G) used during the calendar month for the affected facility using equations (1), (2), and (3).

(ii) Calculate the total mass of VOC recovered (M_r) during each calendar month using the following equation:

$$M_r = L_r D_r \qquad (9)$$

(iii) Calculate overall reduction efficiency of the control device (R) for the calendar month for the affected facility using the following equation:

$$R = \frac{M_r}{M_o + M_d} \qquad (10)$$

(iv) Calculate the volume-weighted average mass of VOC discharged to the atmosphere (N) for the calendar month for the afffected facility using equation (8).

(v) If the weighted average of VOC emitted to the atmosphere for the calendar month (N) is equal to or less than the applicable emission limit specified under § 60.492, the affected facility is in compliance.

[48 FR 38737, Aug. 25, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

§ 60.494 Monitoring of emissions and operations

The owner or operator of an affected facility that uses a capture system and an incinerator to comply with the emission limits specified under § 60.492 shall install, calibrate, maintain, and operate temperature measurement devices as prescribed below.

(a) Where thermal incineration is used, a temperature measurement device shall be installed in the firebox. Where catalytic incineration is used, temperature measurement devices shall be installed in the gas stream immediately before and after the catalyst bed.

(b) Each temperature measurement device shall be installed, calibrated, and maintained according to the manufacturer's specifications. The device shall have an accuracy of 0.75 percent of the temperature being measured, expressed in degrees Celsius, or ±2.5 °C, whichever is greater.

(c) Each temperature measurement device shall be equipped with a recording device so that a permanent continuous record is produced.

[48 FR 38737, Aug. 25, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

§60.495 Reporting and recordkeeping requirements.

(a) The owner or operator of an affected facility shall include the following data in the initial compliance report required under §60.8(a).

(1) Where only coatings which individually have a VOC content equal to or less than the limits specified under §60.492 are used, and no VOC is added to the coating during the application or distribution process, the owner or operator shall provide a list of the coatings used for each affected facility and the VOC content of each coating calculated from data determined using Method 24 or supplied by the manufacturers of the coatings.

(2) Where one or more coatings which individually have a VOC content greater than the limits specified under §60.492 are used or where VOC are added or used in the coating process, the owner or operator shall report for each affected facility the volume-weighted average of the total mass of VOC per volume of coating solids.

(3) Where compliance is achieved through the use of incineration, the owner or operator shall include in the initial performance test required under §60.8(a) the combustion temperature (or the gas temperature upstream and downstream of the catalyst bed), the total mass of VOC per volume of coating solids before and after the incinerator, capture efficiency, and the destruction efficiency of the incinerator used to attain compliance with the applicable emission limit specified under §60.492. The owner or operator shall also include a description of the method used to establish the amount of VOC captured by the capture system and sent to the control device.

(b) Following the initial performance test, each owner or operator shall identify, record, and submit quarterly reports to the Administrator of each instance in which the volume-weighted average of the total mass of VOC per volume of coating solids, after the control device, if capture devices and control systems are used, is greater than the limit specified under §60.492. If no such instances occur during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(c) Following the initial performance test, the owner or operator of an affected facility shall identify, record, and submit at the frequency specified in §60.7(c) the following:

(1) Where compliance with §60.492 is achieved through the use of thermal incineration, each 3-hour period when cans are processed, during which the average temperature of the device was more than 28 °C below the average temperature of the device during the most recent performance test at which destruction efficiency was determined as specified under §60.493.

(2) Where compliance with §60.492 is achieved through the use of catalytic incineration, each 3-hour period when cans are being processed, during which the average temperature of the device immediately before the catalyst bed is more than 28 °C below the average temperature of the device immediately before the catalyst bed during the most recent performance test at which destruction efficiency was determined as specified under §60.493 and all 3-hour periods, when cans are being processed, during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference across the catalyst

bed during the most recent performance test at which destruction efficiency was determined as specified under § 60.494.

(3) For thermal and catalytic incinerators, if no such periods as described in paragraphs (c)(1) and (c)(2) of this section occur, the owner or operator shall state this in the report.

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine VOC emissions from each affected facility in the initial and monthly performance tests. Where compliance is achieved through the use of thermal incineration, each owner or operator shall maintain, at the source, daily records of the incinerator combustion chamber temperature. If catalytic incineration is used, the owner or operator shall maintain at the source daily records of the gas temperature, both upstream and downstream of the incinerator catalyst bed. Where compliance is achieved through the use of a solvent recovery system, the owner or operator shall maintain at the source daily records of the amount of solvent recovered by the system for each affected facility.

(e) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

[47 FR 49612, Nov. 1, 1982, as amended at 55 FR 51384, Dec. 13, 1990; 65 FR 61763, Oct. 17, 2000]

§ 60.496 Test methods and procedures.

(a) The reference methods in appendix A to this part, except as provided in § 60.8, shall be used to conduct performance tests.

(1) Method 24, an equivalent or alternative method approved by the Administrator, or manufacturers' formulation data from which the VOC content of the coatings used for each affected facility can be calculated. In the event of a dispute, Method 24 data shall govern. When VOC content of water-borne coatings, determined from data generated by Method 24, is used to determine compliance of affected facilities, the results of the Method 24 analysis shall be adjusted as described in Section 12.6 of Method 24.

(2) Method 25 or an equivalent or alternative method for the determination of the VOC concentration in the effluent gas entering and leaving the control device for each stack equipped with an emission control device. The owner or operator shall notify the Administrator at least 30 days in advance of any State test using Method 25. The following reference methods are to be used in conjunction with Method 25:

(i) Method 1 for sample and velocity traverses,

(ii) Method 2 for velocity and volumetric flow rate,

(iii) Method 3 for gas analysis, and

(iv) Method 4 for stack gas moisture.

(b) For Method 24, the coating sample must be a 1-litre sample collected in a 1-litre container at a point where the sample will be representative of the coating material.

(c) For Method 25, the sampling time for each of three runs must be at least 1 hour. The minimum sample volume must be 0.003 dscm except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator. The Administrator will approve the sampling of representative stacks on a case-by-case basis if the owner or operator can demonstrate to the satisfaction of the Administrator that the testing of representative stacks would yield results comparable to those that would be obtained by testing all stacks.

[48 FR 38737, Aug. 25, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

Subpart XX—Standards of Performance for Bulk Gasoline Terminals

SOURCE: 48 FR 37590, Aug. 18, 1983, unless otherwise noted.

§60.500 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is the total of all the loading racks at a bulk gasoline terminal which deliver liquid product into gasoline tank trucks.

(b) Each facility under paragraph (a) of this section, the construction or modification of which is commenced after December 17, 1980, is subject to the provisions of this subpart.

(c) For purposes of this subpart, any replacement of components of an existing facility, described in paragraph (a) of this section, commenced before August 18, 1983 in order to comply with any emission standard adopted by a State or political subdivision thereof will not be considered a reconstruction under the provisions of 40 CFR 60.15.

NOTE: The intent of these standards is to minimize the emissions of VOC through the application of best demonstrated technologies (BDT). The numerical emission limits in this standard are expressed in terms of total organic compounds. This emission limit reflects the performance of BDT.

§60.501 Definitions.

The terms used in this subpart are defined in the Clean Air Act, in §60.2 of this part, or in this section as follows:

Bulk gasoline terminal means any gasoline facility which receives gasoline by pipeline, ship or barge, and has a gasoline throughput greater than 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal, State or local law and discoverable by the Administrator and any other person.

Continuous vapor processing system means a vapor processing system that treats total organic compounds vapors collected from gasoline tank trucks on a demand basis without intermediate accumulation in a vapor holder.

Existing vapor processing system means a vapor processing system [capable of achieving emissions to the atmosphere no greater than 80 milligrams of total organic compounds per liter of gasoline loaded], the construction or refurbishment of which was commenced before December 17, 1980, and which was not constructed or refurbished after that date.

Gasoline means any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 27.6 kilopascals or greater which is used as a fuel for internal combustion engines.

Gasoline tank truck means a delivery tank truck used at bulk gasoline terminals which is loading gasoline or which has loaded gasoline on the immediately previous load.

Intermittent vapor processing system means a vapor processing system that employs an intermediate vapor holder to accumulate total organic compounds vapors collected from gasoline tank trucks, and treats the accumulated vapors only during automatically controlled cycles.

Loading rack means the loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves necessary to fill delivery tank trucks.

Refurbishment means, with reference to a vapor processing system, replacement of components of, or addition of components to, the system within any 2-year period such that the fixed capital cost of the new components required for such component replacement or addition exceeds 50 percent of the cost of a comparable entirely new system.

Total organic compounds means those compounds measured according to the procedures in §60.503.

Vapor collection system means any equipment used for containing total organic compounds vapors displaced during the loading of gasoline tank trucks.

Vapor processing system means all equipment used for recovering or oxidizing total organic compounds vapors displaced from the affected facility.

Vapor-tight gasoline tank truck means a gasoline tank truck which has demonstrated within the 12 preceding months that its product delivery tank will sustain a pressure change of not more than 750 pascals (75 mm of water) within 5 minutes after it is pressurized to 4,500 pascals (450 mm of water). This capability is to be demonstrated using the pressure test procedure specified in Method 27.

[48 FR 37590, Aug. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

§ 60.502 Standard for Volatile Organic Compound (VOC) emissions from bulk gasoline terminals.

On and after the date on which § 60.8(a) requires a performance test to be completed, the owner or operator of each bulk gasoline terminal containing an affected facility shall comply with the requirements of this section.

(a) Each affected facility shall be equipped with a vapor collection system designed to collect the total organic compounds vapors displaced from tank trucks during product loading.

(b) The emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 35 milligrams of total organic compounds per liter of gasoline loaded, except as noted in paragraph (c) of this section.

(c) For each affected facility equipped with an existing vapor processing system, the emissions to the atmosphere from the vapor collection system due to the loading of liquid product into gasoline tank trucks are not to exceed 80 milligrams of total organic compounds per liter of gasoline loaded.

(d) Each vapor collection system shall be designed to prevent any total organic compounds vapors collected at one loading rack from passing to another loading rack.

(e) Loadings of liquid product into gasoline tank trucks shall be limited to vapor-tight gasoline tank trucks using the following procedures:

(1) The owner or operator shall obtain the vapor tightness documentation described in § 60.505(b) for each gasoline tank truck which is to be loaded at the affected facility.

(2) The owner or operator shall require the tank identification number to be recorded as each gasoline tank truck is loaded at the affected facility.

(3)(i) The owner or operator shall cross-check each tank identification number obtained in paragraph (e)(2) of this section with the file of tank vapor tightness documentation within 2 weeks after the corresponding tank is loaded, unless either of the following conditions is maintained:

(A) If less than an average of one gasoline tank truck per month over the last 26 weeks is loaded without vapor tightness documentation then the documentation cross-check shall be performed each quarter; or

(B) If less than an average of one gasoline tank truck per month over the last 52 weeks is loaded without vapor tightness documentation then the documentation cross-check shall be performed semiannually.

(ii) If either the quarterly or semiannual cross-check provided in paragraphs (e)(3)(i) (A) through (B) of this section reveals that these conditions were not maintained, the source must return to biweekly monitoring until such time as these conditions are again met.

(4) The terminal owner or operator shall notify the owner or operator of each non-vapor-tight gasoline tank truck loaded at the affected facility within 1 week of the documentation cross-check in paragraph (e)(3) of this section.

(5) The terminal owner or operator shall take steps assuring that the non-vapor-tight gasoline tank truck will not be reloaded at the affected facility until vapor tightness documentation for that tank is obtained.

(6) Alternate procedures to those described in paragraphs (e)(1) through (5) of this section for limiting gasoline tank truck loadings may be used upon application to, and approval by, the Administrator.

(f) The owner or operator shall act to assure that loadings of gasoline tank trucks at the affected facility are made only into tanks equipped with vapor collection equipment that is compatible with the terminal's vapor collection system.

(g) The owner or operator shall act to assure that the terminal's and the tank truck's vapor collection systems are connected during each loading of a gasoline tank truck at the affected facility. Examples of actions to accomplish this include training drivers in the hookup procedures and posting visible reminder signs at the affected loading racks.

(h) The vapor collection and liquid loading equipment shall be designed and operated to prevent gauge pressure in the delivery tank from exceeding 4,500 pascals (450 mm of water) during product loading. This level is not to be exceeded when measured by the procedures specified in §60.503(d).

(i) No pressure-vacuum vent in the bulk gasoline terminal's vapor collection system shall begin to open at a system pressure less than 4,500 pascals (450 mm of water).

(j) Each calendar month, the vapor collection system, the vapor processing system, and each loading rack handling gasoline shall be inspected during the loading of gasoline tank trucks for total organic compounds liquid or vapor leaks. For purposes of this paragraph, detection methods incorporating sight, sound, or smell are acceptable. Each detection of a leak shall be recorded and the source of the leak repaired within 15 calendar days after it is detected.

[48 FR 37590, Aug. 18, 1983; 48 FR 56580, Dec. 22, 1983, as amended at 54 FR 6678, Feb. 14, 1989; 64 FR 7466, Feb. 12, 1999]

§60.503 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b). The three-run requirement of §60.8(f) does not apply to this subpart.

(b) Immediately before the performance test required to determine compliance with §60.502 (b), (c), and (h), the owner or operator shall use Method 21 to monitor for leakage of vapor all potential sources in the terminal's vapor collection system equipment while a gasoline tank truck is being loaded. The owner or operator shall repair all leaks with readings of 10,000 ppm (as methane) or greater before conducting the performance test.

(c) The owner or operator shall determine compliance with the standards in §60.502 (b) and (c) as follows:

(1) The performance test shall be 6 hours long during which at least 300,000 liters of gasoline is loaded. If this is not possible, the test may be continued the same day until 300,000 liters of gasoline is loaded or the test may be resumed the next day with another complete 6-hour period. In the latter case, the 300,000-liter criterion need not be met. However, as much as possible, testing should be conducted during the 6-hour period in which the highest throughput normally occurs.

(2) If the vapor processing system is intermittent in operation, the performance test shall begin at a reference vapor holder level and shall end at the same reference point. The test shall include at least two startups and shutdowns of the vapor processor. If this does not occur under automatically controlled operations, the system shall be manually controlled.

(3) The emission rate (E) of total organic compounds shall be computed using the following equation:

$$E = K\sum_{i=1}^{n}\left(V_{esi}C_{ei}\right) / \left(L10^{6}\right)$$

where:

E=emission rate of total organic compounds, mg/liter of gasoline loaded.

V_{esi}=volume of air-vapor mixture exhausted at each interval “i”, scm.

C_{ei}=concentration of total organic compounds at each interval “i”, ppm.

L=total volume of gasoline loaded, liters.

n=number of testing intervals.

i=emission testing interval of 5 minutes.

K=density of calibration gas, 1.83×10^{6} for propane and 2.41×10^{6} for butane, mg/scm.

(4) The performance test shall be conducted in intervals of 5 minutes. For each interval “i”, readings from each measurement shall be recorded, and the volume exhausted (V_{esi}) and the corresponding average total organic compounds concentration (C_{ei}) shall be determined. The sampling system response time shall be considered in determining the average total organic compounds concentration corresponding to the volume exhausted.

(5) The following methods shall be used to determine the volume (V_{esi}) air-vapor mixture exhausted at each interval:

(i) Method 2B shall be used for combustion vapor processing systems.

(ii) Method 2A shall be used for all other vapor processing systems.

(6) Method 25A or 25B shall be used for determining the total organic compounds concentration (C_{ei}) at each interval. The calibration gas shall be either propane or butane. The owner or operator may exclude the methane and ethane content in the exhaust vent by

any method (e.g., Method 18) approved by the Administrator.

(7) To determine the volume (L) of gasoline dispensed during the performance test period at all loading racks whose vapor emissions are controlled by the processing system being tested, terminal records or readings from gasoline dispensing meters at each loading rack shall be used.

(d) The owner or operator shall determine compliance with the standard in § 60.502(h) as follows:

(1) A pressure measurement device (liquid manometer, magnehelic gauge, or equivalent instrument), capable of measuring up to 500 mm of water gauge pressure with ±2.5 mm of water precision, shall be calibrated and installed on the terminal's vapor collection system at a pressure tap located as close as possible to the connection with the gasoline tank truck.

(2) During the performance test, the pressure shall be recorded every 5 minutes while a gasoline truck is being loaded; the highest instantaneous pressure that occurs during each loading shall also be recorded. Every loading position must be tested at least once during the performance test.

[54 FR 6678, Feb. 14, 1989; 54 FR 21344, Feb. 14, 1989]

§ 60.504 [Reserved]

§ 60.505 Reporting and recordkeeping.

(a) The tank truck vapor tightness documentation required under § 60.502(e)(1) shall be kept on file at the terminal in a permanent form available for inspection.

(b) The documentation file for each gasoline tank truck shall be updated at least once per year to reflect current test results as determined by Method 27. This documentation shall include, as a minimum, the following information:

(1) Test title: Gasoline Delivery Tank Pressure Test—EPA Reference Method 27.

(2) Tank owner and address.

(3) Tank identification number.

(4) Testing location.

(5) Date of test.

(6) Tester name and signature.

(7) Witnessing inspector, if any: Name, signature, and affiliation.

(8) Test results: Actual pressure change in 5 minutes, mm of water (average for 2 runs).

(c) A record of each monthly leak inspection required under § 60.502(j) shall be kept on file at the terminal for at least 2 years. Inspection records shall include, as a minimum, the following information:

(1) Date of inspection.

(2) Findings (may indicate no leaks discovered; or location, nature, and severity of each leak).

(3) Leak determination method.

(4) Corrective action (date each leak repaired; reasons for any repair interval in excess of 15 days).

(5) Inspector name and signature.

(d) The terminal owner or operator shall keep documentation of all notifications required under § 60.502(e)(4) on file at the terminal for at least 2 years.

(e) [Reserved]

(f) The owner or operator of an affected facility shall keep records of all replacements or additions of components performed on an existing vapor processing system for at least 3 years.

[48 FR 37590, Aug. 18, 1983; 48 FR 56580, Dec. 22, 1983]

§ 60.506 Reconstruction.

For purposes of this subpart:

(a) The cost of the following frequently replaced components of the affected facility shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital costs that would be required to construct a comparable entirely new facility" under § 60.15: pump seals, loading arm gaskets and swivels, coupler gaskets, overfill sensor couplers and cables, flexible vapor hoses, and grounding cables and connectors.

(b) Under § 60.15, the "fixed capital cost of the new components" includes the fixed capital cost of all depreciable components (except components specified in § 60.506(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following December 17, 1980. For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

Subpart AAA—Standards of Performance for New Residential Wood Heaters

SOURCE: 53 FR 5873, Feb. 26, 1988, unless otherwise noted.

§ 60.530 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each wood heater manufactured on or after July 1, 1988, or sold at retail on or after July 1, 1990. The provisions of this subpart do not apply to wood heaters constructed prior to July 1, 1988, that are or have been owned by a noncommercial owner for his personal use.

(b) Each affected facility shall comply with the applicable emission limits in § 60.532 unless exempted under paragraph (c), (d), (e), (f), (g) or (h) of this section.

(c)–(d) [Reserved]

(e) Affected facilities manufactured in the U.S. for export are exempt from the applicable emission limits of § 60.532 and the requirements of § 60.533.

(f) A wood heater used for research and development purposes that is never offered for sale or sold is exempt from the applicable emission limits of § 60.532 and the requirements of § 60.533. No more than 50 wood heaters manufactured per model line may be exempted for this purpose.

(g) A coal-only heater is exempt from the applicable emission limits of § 60.532 and the requirements of § 60.533.

(h) The following are not affected facilities and are not subject to this subpart:

(1) Open masonry fireplaces constructed on site,

(2) Boilers,

(3) Furnaces, and

(4) Cookstoves.

(i) Modification or reconstruction, as defined in §§ 60.14 and 60.15 of subpart A, shall not, by itself, make a wood heater an affected facility under this subpart.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995]

§ 60.531 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and subpart A of this part.

At retail means the sale by a commercial owner of a wood heater to the ultimate purchaser.

Boiler means a solid fuel burning appliance used primarily for heating spaces, other than the space where the appliance is located, by the distribution through pipes of a gas or fluid heated in the appliance. The appliance must be tested and listed as a boiler under accepted American or Canadian safety testing codes. A manufacturer may request an exemption in writing from the Administrator by stating why the testing and listing requirement is not practicable and by demonstrating that his appliance is otherwise a boiler.

Coal-only heater means an enclosed, coal-burning appliance capable of space heating, or domestic water heating, which has all of the following characteristics:

(1) An opening for emptying ash that is located near the bottom or the side of the appliance,

(2) A system that admits air primarily up and through the fuel bed,

(3) A grate or other similar device for shaking or disturbing the fuel bed or power-driven mechanical stoker,

(4) Installation instructions that state that the use of wood in the stove, except for coal ignition purposes, is prohibited by law, and

(5) The model is listed by a nationally recognized safety-testing laboratory for use of coal only, except for coal ignition purposes.

Commercial owner means any person who owns or controls a wood heater in the course of the manufacture, importation, distribution, or sale of the wood heater.

Cookstove means a wood-fired appliance that is designed primarily for cooking food and that has the following characteristics:

(1) An oven, with a volume of 0.028 cubic meters (1 cubic foot) or greater, and an oven rack,

(2) A device for measuring oven temperatures,

(3) A flame path that is routed around the oven,

(4) A shaker grate,

(5) An ash pan,

(6) An ash clean-out door below the oven, and

(7) The absence of a fan or heat channels to dissipate heat from the appliance.

Furnace means a solid fuel burning appliance that is designed to be located outside of ordinary living areas and that warms spaces other than the space where the appliance is located, by the distribution of air heated in the appliance through ducts. The appliance must be tested and listed as a furnace under accepted American or Canadian safety testing codes unless exempted from this provision by the Administrator. A manufacturer may request an exemption in writing from the Administrator by stating why the testing and listing requirement is not practicable and by demonstrating that his appliance is otherwise a furnace.

Manufactured means completed and ready for shipment (whether or not packaged).

Manufacturer means any person who constructs or imports a wood heater.

Model line means all wood heaters offered for sale by a single manufacturer that are similar in all material respects.

Representative affected facility means an individual wood heater that is similar in all material respects to other wood heaters within the model line it represents.

Sale means the transfer of ownership or control, except that transfer of control shall not constitute a sale for purposes of § 60.530(f).

Similar in all material respects means that the construction materials, exhaust and inlet air system, and other design features are within the allowed tolerances for components identified in § 60.533(k).

Wood heater means an enclosed, wood burning appliance capable of and intended for space heating or domestic water heating that meets all of the following criteria:

(1) An air-to-fuel ratio in the combustion chamber averaging less than 35-to-1 as determined by the test procedure prescribed in § 60.534 performed at an accredited laboratory;

(2) A usable firebox volume of less than 0.57 cubic meters (20 cubic feet);

(3) A minimum burn rate of less than 5 kg/hr (11 lb/hr) as determined by the test procedure prescribed in § 60.534 performed at an accredited laboratory; and

(4) A maximum weight of 800 kg (1,760 lb). In determining the weight of an appliance for these purposes, fixtures and devices that are normally sold separately, such as flue pipe, chimney, and masonry components that are not an integral part of the appliance or heat distribution ducting, shall not be included.

[53 FR 5873, Feb. 26, 1988, as amended at 64 FR 7466, Feb. 12, 1999; 65 FR 61763, Oct. 17, 2000]

§ 60.532 Standards for particulate matter.

Unless exempted under § 60.530, each affected facility:

(a) [Reserved]

(b) Manufactured on or after July 1, 1990, or sold at retail on or after July 1, 1992, shall comply with the following particulate matter emission limits as determined by the test methods and procedures in § 60.534:

(1) An affected facility equipped with a catalytic combustor shall not discharge into the atmosphere any gases which contain particulate matter in excess of a weighted average of 4.1 g/hr (0.009 lb/hr). Particulate emissions during any test run at any burn rate that is required to be used in the weighted average shall not exceed the value calculated for ‘‘C’’ (rounded to 2 significant figures) calculated using the following equation:

(i) At burn rates less than or equal to 2.82 kg/hr (6.2 lb/hr),

$$C = K_1 BR + K_2$$

Where:

BR = Burn rate in kg/hr (lb/hr)

K_1 = 3.55 g/kg (0.00355 lb/lb)

K_2 = 4.98 g/hr (0.0.011 lb/hr)

(ii) At burn rates greater than 2.82 kg/hr (6.2 lb/hr), C = 15 g/hr (0.033 lb/hr).

(2) An affected facility not equipped with a catalytic combustor shall not discharge into the atmosphere any gases which contain particulate matter in excess of a weighted average of 7.5 g/

hr (0.017 lb/hr). Particulate emissions shall not exceed 15 g/hr (0.033 lb/hr) during any test run at a burn rate less than or equal to 1.5 kg/hr (3.3 lb/hr) that is required to be used in the weighted average and particulate emissions shall not exceed 18 g/hr (0.040 lb/hr) during any test run at a burn rate greater than 1.5 kg/hr (3.3 lb/hr) that is required to be used in the weighted average.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995; 65 FR 61764, Oct. 17, 2000]

§60.533 Compliance and certification.

(a) For each model line, compliance with applicable emission limits may be determined based on testing of representative affected facilities within the model line.

(b) Any manufacturer of an affected facility may apply to the Administrator for a certificate of compliance for a model line. The application shall be in writing to: Stationary Source Compliance Division (EN–341), U.S. EPA, 1200 Pennsylvania Ave., NW., Washington, DC 20460, Attention: Wood Heater Program. The manufacturer must submit two complete copies of the application and attachments. The application must be signed by the manufacturer, or an authorized representative, and shall contain the following:

(1) The model name and/or design number,

(2) Two color photographs of the tested unit (or, for models being certified under §60.530(c), photographs of a representative unit), one showing a front view and the other, a side view,

(3)(i) Engineering drawings and specifications of components that may affect emissions (including specifications for each component listed in paragraph (k) of this section). Manufacturers may use complete assembly or design drawings that have been prepared for other purposes, but should designate on the drawings the dimensions of each component listed in paragraph (k) of this section. Manufacturers shall identify tolerances of components of the tested unit listed in paragraph (k)(2) of this section that are different from those specified in that paragraph, and show that such tolerances may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits.

(ii) A statement whether the firebox or any firebox component (other than one listed in paragraph (k)(3) of this section) will be composed of different material from the material used for the firebox or firebox component in the wood heater on which certification testing was performed and a description of any such differences.

(iii) For applications to certify a model line of catalytic wood heaters to meet the emission limits in §60.532(b), a statement describing the manufacturer's program to ensure consistency in the size of any gap in the catalyst bypass mechanism. The statement shall describe, in narrative form, the components of the system that affect the size of the gap, any specifications for critical dimensions of any such components, and the procedure the manufacturer will use to ensure consistency in the size of the catalyst bypass gap.

(4) All documentation pertaining to a valid certification test, including the complete test report and, for all test runs: Raw data sheets, laboratory technician notes, calculations, and test results. Documentation shall include the items specified in the applicable test methods. Recommended formats and guidance materials are available from the Administrator.

(5) For catalytic wood heaters, a copy of the catalytic combustor warranty,

(6) A statement that the manufacturer will conduct a quality assurance program for the model line which satisfies the requirements of paragraph (o) of this section,

(7) A statement describing how the tested unit was sealed by the laboratory after the completion of certification testing, and

(8) A statement that the manufacturer will notify the accredited laboratory if the application for certification is granted, within thirty days of receipt of notification from EPA.

(9) Statements that the wood heaters manufactured under this certificate will be—

(i) Similar in all material respects to the wood heater submitted for certification testing, and

(ii) Will be labeled as prescribed in § 60.536,

(10) For catalytic wood heaters, a statement that the warranty, access and inspection, and temperature monitoring provisions in paragraphs (c), (d), and (m) of this section will be met,

(11) A statement that the manufacturer will comply with the recordkeeping and reporting requirements in § 60.537,

(12) A written estimate of the number of wood heaters that the manufacturer anticipates that he will produce annually for the first two production years. Compliance with this provision may be obtained by designating one of the following ranges:

(i) Less than 2,500,

(ii) 2,500 to 4,999,

(iii) 5,000 to 9,999,

(iv) 10,000 to 49,999, and

(v) 50,000 or greater; and

(13) At the beginning of each test run in a certification test series, two photographs of the fuel load: One before and one after it is placed in the wood heater. One of the photographs shall show the front view of the wood load and the other shall show the side view.

(14) For manufacturers seeking certification of model lines under § 60.533(e) to meet the emission limits in § 60.532(b), a statement that the manufacturer has entered into a contract with an accredited laboratory which satisfies the requirements of paragraph (g) of this section.

(c) If the affected facility is a catalytic wood heater, the warranty for the catalytic combustor shall include the replacement of the combustor and any prior replacement combustor without charge to the consumer for:

(1) 2 years from the date the consumer purchased the heater for any defects in workmanship or materials that prevent the combustor from functioning when installed and operated properly in the wood heater, and

(2) 3 years from the date the consumer purchased the heater for thermal crumbling or disintegration of the substrate material for heaters manufactured after July 1, 1990.

(d) The manufacturer of an affected facility equipped with a catalytic combustor shall provide for a means to allow the owner to gain access readily to the catalyst for inspection or replacement purposes and shall document in his application for certification how the catalyst is replaced.

(e)(1) The Administrator shall issue a certificate of compliance for a model line if he determines, based on all information submitted by the applicant and any other relevant information available to him, that:

(i) A valid certification test has demonstrated that the wood heater representative of the model line complies with the applicable particulate emission limits in § 60.532,

(ii) Any tolerances or materials for components listed in paragraph (k) (2) or (3) of this section that are different from those specified in those paragraphs may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits, and

(iii) The requirements of paragraphs (b), (c), (d), and (m) of this section have been met. The program described under paragraph (b)(3)(iii) of this section shall be deemed a tolerance specified in the certified design.

(2) [Reserved]

(3) Upon denying certification under this paragraph, the Administrator shall give written notice to the manufacturer setting forth the basis for his determination.

(f) To be valid, a certification test must be:

(1) Announced to the Administrator in accordance with § 60.534(e),

(2) Conducted by a testing laboratory accredited by the Administrator pursuant to § 60.535,

(3) Conducted on a wood heater similar in all material respects to other wood heaters of the model line that is to be certified, and

(4) Conducted in accordance with the test methods and procedures specified in § 60.534.

(g) To have a wood heater model certified under § 60.533(e) to meet the emission limits in § 60.532(b), a manufacturer must enter into a contract with the accredited laboratory that performed the certification test, under which the laboratory will:

(1) Conduct the random compliance audit test at no cost to the manufacturer if EPA selects that laboratory to conduct the test, or

(2) Pay the manufacturer the reasonable cost of a random compliance audit test (as determined by EPA) if EPA selects any other laboratory to conduct the test.

(h) [Reserved]

(i) An applicant for certification may apply for a waiver of the requirement to submit the results of a certification test pursuant to paragraph (b)(4) of this section, if the wood heaters of the model line are similar in all material respects to another model line that has already been issued a certificate of compliance. A manufacturer that seeks a waiver of certification testing must identify the model line that has been certified, and must submit a copy of an agreement with the owner of the design permitting the applicant to produce wood heaters of that design.

(j)(1) Unless revoked sooner by the Administrator, a certificate of compliance shall be valid:

(i) [Reserved]

(ii) For five years from the date of issuance, for a model line certified as meeting emission limits in § 60.532(b).

(2) Upon application for renewal of certification by the manufacturer, the Administrator may waive the requirement for certification testing upon determining that the model line continues to meet the requirements for certification in paragraph (e) of this section, or that a waiver of certification is otherwise appropriate.

(3) Upon waiving certification testing under paragraph (j)(2) of this section, the Administrator shall give written notice to the manufacturer setting forth the basis for his determination.

(k)(1) A model line must be recertified whenever any change is made in the design submitted pursuant to § 60.533(b)(3) that is presumed to affect the particulate emission rate for that model line. The Administrator may waive this requirement upon written request by the manufacturer, if he determines that the change may not reasonably be anticipated to cause wood heaters in the model line to exceed the applicable emission limits. The granting of such a waiver does not relieve the manufacturer of any compliance obligations under this subpart.

(2) Any change in the indicated tolerances of any of the following components (where such components are applicable) is presumed to affect particulate emissions if that change exceeds ±0.64 cm (±¼ inch) for any linear dimension and ±5 percent for any cross-sectional area relating to air introduction systems and catalyst bypass gaps unless other dimensions and cross-sectional areas are previously approved by the Administrator under paragraph (e)(1)(ii) of this section:

(i) Firebox: Dimensions,

(ii) Air introduction systems: Cross-sectional area of restrictive air inlets, outlets, and location, and method of control,

(iii) Baffles: Dimensions and locations,

(iv) Refractory/insulation: Dimensions and location,

(v) Catalyst: Dimensions and location,

(vi) Catalyst bypass mechanism and, for model lines certified to meet the emissions limits in § 60.532(b), catalyst bypass gap tolerances (when bypass mechanism is in closed position): Dimensions, cross-sectional area, and location,

(vii) Flue gas exit: Dimensions and location,

(viii) Door and catalyst bypass gaskets: Dimensions and fit,

(ix) Outer shielding and coverings: Dimensions and location,

(x) Fuel feed system: For wood heaters that are designed primarily to burn wood pellets and other wood heaters equipped with a fuel feed system, the fuel feed rate, auger motor design and power rating, and the angle of the auger to the firebox, and

(xi) Forced air combustion system: For wood heaters so equipped, the location and horsepower of blower motors and the fan blade size.

(3) Any change in the materials used for the following components is presumed to affect emissions:

(i) Refractory/insulation or

(ii) Door and catalyst bypass gaskets.

(4) A change in the make, model, or composition of a catalyst is presumed to affect emissions, unless the change has been approved in advance by the

Administrator, based on test data that demonstrate that the replacement catalyst is equivalent to or better than the original catalyst in terms of particulate emission reduction.

(l)(1) The Administrator may revoke certification if he determines that the wood heaters being produced in that model line do not comply with the requirements of this section or § 60.532. Such a determination shall be based on all available evidence, including:

(i) Test data from a retesting of the original unit on which the certification test was conducted,

(ii) A finding that the certification test was not valid. The finding must be based on problems or irregularities with the certification test or its documentation, but may be supplemented by other information.

(iii) A finding that the labeling of the wood heater does not comply with the requirements of § 60.536,

(iv) Failure by the manufacturer to comply with reporting and recordkeeping requirements under § 60.537,

(v) Physical examination showing that a significant percentage of production units inspected are not similar in all material respects to the representative affected facility submitted for testing, or

(vi) Failure of the manufacturer to conduct a quality assurance program in conformity with paragraph (o) of this section.

(2) Revocation of certification under this paragraph shall not take effect until the manufacturer concerned has been given written notice by the Administrator setting forth the basis for the proposed determination and an opportunity to request a hearing under § 60.539.

(3) Determination to revoke certification based upon audit testing shall be made only in accordance with paragraph (p) of this section.

(m) A catalytic wood heater shall be equipped with a permanent provision to accommodate a commercially available temperature sensor which can monitor combustor gas stream temperatures within or immediately downstream [within 2.54 centimeters (1 inch)] of the combustor surface.

(n) Any manufacturer of an affected facility subject under § 60.530(b) to the applicable emission limits of this subpart that does not belong to a model line certified under this section shall cause that facility to be tested in an accredited laboratory in accordance with paragraphs (f) (1), (2), and (4) of this section before it leaves the manufacturer's possession and shall report the results to the Administrator.

(o)(1) For each certified model line, the manufacturer shall conduct a quality assurance program which satisfies the following requirements:

(2) Except as provided in paragraph (o)(5) of this section, the manufacturer or his authorized representative shall inspect at least one from every 150 units produced within a model line to determine that the wood heater is within applicable tolerances for all components that affect emissions as listed in paragraph (k)(2) of this section.

(3)(i) Except as provided in paragraph (o)(3)(iii) or (o)(5) of this section, the manufacturer or his authorized representative shall conduct an emission test on a randomly selected affected facility produced within a model line certified under § 60.533 (e) or (h), on the following schedule:

If weighted average certification test results were—	If yearly production per model is—	
	<2500	>2500
70% or less of std	When directed by EPA, not to exceed once every 10,000 stoves.	Every 10,000 stoves or triennially (whichever is more frequent).
Within 30% of std	Every 5,000 stoves	Every 5,000 stoves or annually (whichever is more frequent).

(ii) Emission tests shall be conducted in conformity with § 60.534(a), using either approved method for measuring particulate matter (as provided in § 60.534). The manufacturer shall notify EPA by U.S. mail that an emissions test required pursuant to this paragraph will be conducted within one week of the mailing of the notification.

(iii) If the manufacturer stated pursuant to paragraph (b)(3) of this section that the firebox or any firebox component would be composed of a different material than the material used in the wood heater on which certification testing was performed, the first test shall be performed before 1,000 wood heaters are produced. The manufacturer shall submit a report of the results of this emission test to the Administrator within 45 days of the completion of testing.

(4) The manufacturer shall take remedial measures, as appropriate, when inspection or testing pursuant to paragraph (o) of this section indicates that affected facilities within the model line are not within applicable tolerances or do not comply with the applicable emission limit. Manufacturers shall record the problem identified, the extent of the problem, the remedial measures taken, and the effect of such remedial measures as projected by the manufacturer or determined by any additional testing.

(5)(i) If two consecutive passing tests are conducted under either paragraph (o) (2) or (3) of this section, the required frequency of testing under the applicable paragraph shall be modified as follows: Skip every other required test.

(ii) If five consecutive passing tests are conducted under the modified schedule provided for in Paragraph (o)(5)(i) of this section, the required frequency of testing under the applicable paragraph shall be further modified as follows: Skip three consecutive required tests after each required test that is conducted.

(iii) Testing shall resume on the frequency specified in the paragraph (o) (2) or (3), as applicable, if a test failure results during any test conducted under a modified schedule.

(6) If emissions tests under paragraph (o) of this section are conducted at an altitude different from the altitude at which certification tests were conducted, and are not conducted under pressurized conditions, the results shall be adjusted for altitude in accordance with paragraph (h)(3)(iii) of this section.

(p)(1)(i) The Administrator shall after July 1, 1990, select for random compliance audit testing certified wood heater model lines that have not already been subject to a random compliance audit under this paragraph. The Administrator shall not select more than one model line under this program for every five model lines for which certification is granted under §60.533(e) to meet the emission limits in §60.532(b). No accredited laboratory shall test or bear the expense of testing, as provided in the contract described in paragraph (g) of this section, more than one model line from every five model lines tested by the laboratory for which certification was granted. The Administrator shall use a procedure that ensures that the selection process is random.

(ii) The Administrator may, by means of a neutral selection scheme, select model lines certified under §60.533(e) or §60.533(h) for selective enforcement audit testing under this paragraph. Prior to July 1, 1990, the Administrator shall only select a model line for a selective enforcement audit on the basis of information indicating that affected facilities within the model line may exceed the applicable emission limit in §60.532.

(2) The Administrator shall randomly select for audit testing five production wood heaters from each model line selected under paragraph (p)(1) of this section. These wood heaters shall be selected from completed units ready for shipment from the manufacturer's facility (whether or not the units are in a package or container). The wood heaters shall be sealed upon selection and remain sealed until they are tested or until the audit is completed. The wood heaters shall be numbered in the order that they were selected.

(3)(i) The Administrator shall test, or direct the manufacturer to test, the first of the five wood heaters selected under paragraph (p)(2) of this section in a laboratory accredited under §60.535 that is selected pursuant to paragraph (p)(4) of this section.

(ii) The expense of the random compliance audit test shall be the responsibility of the wood heater manufacturer. A manufacturer may require the laboratory that performed the certification test to bear the expense of a random compliance audit test by means of the contract required under paragraph (g) of this section. If the laboratory with which the manufacturer had a contract has ceased business due to bankruptcy or is otherwise legally unable to honor the contract, the Administrator will not select any of that manufacturer's model lines for which certification testing has been conducted by that laboratory for a random compliance audit test.

(iii) The test shall be conducted using the same test method and procedure used to obtain certification. If the certification test consisted of more than one particulate sampling test method, the Adminstrator may use either one of these methods for the purpose of audit testing. If the test is performed in a pressure vessel, air pressure in the pressure vessel shall be maintained within 1 percent of the average of the barometric pressures recorded for each individual test run used to calculate the weighted average emission rate for the certification test. The Administrator shall notify the manufacturer at least one week prior to any test under this paragraph, and allow the manufacturer and/or his authorized representatives to observe the test.

(4)(i) Except as provided in this paragraph, the Administrator may select any accredited laboratory for audit testing.

(ii)(A) The Administrator shall select the accredited laboratory that performed the test used to obtain certification for audit testing, until the Administrator has amended this subpart, based upon a determination pursuant to paragraph (p)(4)(ii)(B) of this section, to allow testing at another laboratory. If another laboratory is selected pursuant to this paragraph, and the overall precision of the test method and procedure is greater than ±1 gram per hour (±0.0022 lb per hour) of the weighted average at laboratories below 304 meters (1,000 feet) elevation (or equivalent), the interlaboratory component of the precision shall be added to the applicable emissions standard for the purposes of this paragraph.

(B) [Reserved]

(iii) The Administrator shall not select an accredited laboratory that is located at an elevation more than 152 meters (500 feet) higher than the elevation of the laboratory which performed the test used to obtain certification, unless the audit test is performed in a pressure vessel.

(5)(i) If emissions from a wood heater tested under paragraph (p)(3) of this section exceed the applicable weighted average emission limit by more than 50 percent, the Administrator shall so notify the manufacturer that certification for that model line is suspended effective 72 hours from the receipt of the notice, unless the suspension notice is withdrawn by the Administrator. The suspension shall remain in effect until withdrawn by the Administrator, or 30 days from its effective date (if a revocation notice under paragraph (p)(5)(ii) of this section is not issued within that period), or the date of final agency action on revocation, whichever occurs earlier.

(ii)(A) If emissions from a wood heater tested under paragraph (p)(3) of this section exceed the applicable weighted average emission limit, the Administrator shall notify the manufacturer that certification is revoked for that model line.

(B) A revocation notice under paragraph (p)(5)(ii)(A) shall become final and effective 60 days after receipt by the manufacturer, unless it is withdrawn, a hearing is requested under §60.539, or the deadline for requesting a hearing is extended.

(C) The Administrator may extend the deadline for requesting a hearing for up to 60 days for good cause.

(D) A manufacturer may extend the deadline for requesting a hearing for up to six months, by agreeing to a voluntary suspension of certification.

(iii) Any notification under paragraph (p)(5)(i) or (p)(5)(ii) of this section shall include a copy of a preliminary test report from the accredited laboratory. The accredited laboratory shall provide a preliminary test report to the Administrator within 10 days of the completion of testing, if a wood heater exceeds the applicable emission limit in §60.532. The laboratory shall provide the Administrator and the manufacturer, within 30 days of the completion of testing, all documentation pertaining to the test, including the complete test report and raw data sheets, laboratory technician notes, and test results for all test runs.

(iv) Upon receiving notification of a test failure under paragraph (p)(5)(ii) of this section, the manufacturer may submit some or all of the remaining four wood heaters selected under paragraph (p)(2) of this section for testing at his own expense, in the order they were selected by the Administrator, at the laboratory that performed the emissions test for the Administrator.

(v) Whether or not the manufacturer proceeds under paragraph (p)(5)(iv) of this section, the manufacturer may submit any relevant information to the Administrator, including any other test data generated pursuant to this subpart. The manufacturer shall pay the expense of any testing performed for him.

(vi) The Administrator shall withdraw any notice issued under paragraph (p)(5)(ii) of this section if tests under paragraph (p)(5)(iv) of this section show either—

(A) That all four wood heaters tested for the manufacturer met the applicable weighted average emission limits, or

(B) That the second and third wood heaters selected met the applicable weighted average emission limits and the average of all three weighted averages (including the original audit test) was below the applicable weighted average emission limits.

(vii) The Administrator may withdraw any proposed revocation, if the Administrator finds that an audit test failure has been rebutted by information submitted by the manufacturer under paragraph (p)(5)(iv) of this section and/or (p)(5)(v) of this section or by any other relevant information available to him.

(viii) Any withdrawal of a proposed revocation shall be accompanied by a document setting forth its basis.

[53 FR 5874, Feb. 26, 1988; 53 FR 14889, Apr. 26, 1988, as amended at 60 FR 33925, June 29, 1995; 63 FR 64874, Nov. 24, 1998; 65 FR 61764, Oct. 17, 2000]

§ 60.534 Test methods and procedures.

Test methods and procedures in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance with the standards and requirements for certification under §§ 60.532 and 60.533 as follows:

(a) Method 28 shall be used to establish the certification test conditions and the particulate matter weighted emission values.

(b) Emission concentrations may be measured with either:

(1) Method 5G, if a dilution tunnel sampling location is used, or

(2) Method 5H, if a stack location is used.

(c) Method 28A shall be used to determine that a wood combustion unit qualifies under the definition of wood heater in § 60.531(a). If such a determination is necessary, this test shall be conducted by an accredited laboratory.

(d) Appendix J is used as an optional procedure in establishing the overall thermal efficiency of wood heaters. (To be proposed separately.)

(e)(1) The manufacturer of an affected facility shall notify the Administrator of the date that certification testing is scheduled to begin. (A notice from the testing lab containing the information required in § 60.533(f)(1) may be used to satisfy this requirement.) This notice shall be at least 30 days before the start of testing. The notification of testing shall be in writing, and include the manufacturer's name and address, the testing laboratory's name, the model name and number (or, if unavailable, some other way to distinguish between models), and the dates of testing.

(2) Any emission testing conducted on the wood heater for which notice was delivered shall be presumed to be certification testing if such testing occurs on or after the scheduled date of testing and before a test report is submitted to the Administrator. If certification testing is interrupted for more than 24 hours, the laboratory shall notify the Administrator by telephone, as soon as practicable, and also by letter, stating why the testing was interrupted and when it is expected to be resumed.

(3) A manufacturer or laboratory may change the date that testing is scheduled to begin by notifying the Administrator at least 14 days before the start of testing. Notification of schedule change shall be made at least two working days prior to the originally scheduled test date. This notice of rescheduling shall be made by telephone or other expeditious means and shall be documented in writing and sent concurrently.

(4) A model line may be withdrawn from testing before the certification

test is complete, provided the wood heater is sealed in accordance with § 60.535(g). The manufacturer shall notify the Administrator 30 days before the resumption of testing.

(5) The manufacturer or laboratory shall notify the Administrator if a test is not completed within the time allotted as set forth in the notice of testing. The notification shall be made by the end of the allotted testing period by telephone or other expeditious means, and documented in writing sent concurrently, and shall contain the dates when the test will be resumed. Unless otherwise approved by the Administrator, failure to conduct a certification test as scheduled without notifying the Administrator of any schedule change 14 days prior to the schedule or revised test dates will result in voiding the notification. In the case of a voided notification, the manufacturer shall provide the Administrator with a second notification at least 30 days prior to the new test dates. The Administrator may waive the requirement for advance notice for test resumptions.

(f) The testing laboratory shall allow the manufacturer to observe certification testing. However, manufacturers shall not involve themselves in the conduct of the test after the pretest burn (as defined by EPA Method 28) has begun. Communications between the manufacturer and laboratory personnel regarding operation of the wood heater shall be limited to written communications transmitted prior to the first pretest burn of the certification series. Written communications between the manufacturer and laboratory personnel may be exchanged during the certification test only if deviations from the test procedures are observed that constitute improper conduct of the test. All communications shall be included in the test documentation required to be submitted under § 60.533(b)(4) and shall be consistent with instructions provided in the owner's manual required under § 60.536(k), except to the extent that they address details of the certification tests that would not be relevant to owners.

§ 60.535 Laboratory accreditation.

(a)(1) A laboratory may apply for accreditation by the Administrator to conduct wood heater certification tests pursuant to § 60.533. The application shall be in writing to: Emission Measurement Branch (MD–13), U.S. EPA, Research Triangle Park, NC 27711, Attn: Wood Heater Laboratory Accreditation.

(2) [Reserved]

(3) If accreditation is denied under this section, the Administrator shall give written notice to the laboratory setting forth the basis for his determination.

(b) In order for a test laboratory to qualify for accreditation the laboratory must:

(1) Submit its written application providing the information related to laboratory equipment and management and technical experience of laboratory personnel. Applications from laboratories shall establish that:

(i) Laboratory personnel have a total of one year of relevant experience in particulate measurement, including at least three months experience in measuring particulate emissions from wood heaters,

(ii) The laboratory has the equipment necessary to perform testing in accordance with either § 60.534(b) (1) or (2), and

(iii) Laboratory personnel have experience in test management or laboratory management.

(2) Have no conflict of interest and receive no financial benefit from the outcome of certification testing conducted pursuant to § 60.533,

(3) Agree to enter into a contract as described in § 60.533(g) with each wood heater manufacturer for whom a certification test has been performed.

(4) [Reserved]

(5) Demonstrate proficiency to achieve reproducible results with at least one test method and procedure in § 60.534(b), by:

(i) Performing a test consisting of at least eight test runs (two in each of the four burn rate categories) on a wood heater identified by the Administrator,

(ii) Providing the Administrator at least 30 days prior notice of the test to afford the Administrator the opportunity to have an observer present, and

(iii) Submitting to the Administrator all documentation pertaining to the test, including a complete test report and raw data sheets, laboratory technical notes, and test results for all test runs,

(6) Be located in the continental United States,

(7) Agree to participate annually in a proficiency testing program conducted by the Administrator,

(8) Agree to allow the Administrator access to observe certification testing,

(9) Agree to comply with reporting and recordkeeping requirements that affect testing laboratories, and

(10) Agree to accept the reasonable cost of an RCA test (as determined by the Administrator) if it is selected to conduct the RCA test of a model line originally tested for certification at another laboratory.

(c)–(d) [Reserved]

(e)(1) The Administrator may revoke EPA laboratory accreditation if he determines that the laboratory:

(i) No longer satisfies the requirements for accreditation in paragraph (b) or (c),

(ii) Does not follow required procedures or practices,

(iii) Had falsified data or otherwise misrepresented emission data,

(iv) [Reserved]

(v) Failed to participate in a proficiency testing program, in accordance with its commitment under paragraph (b)(5) of this section, or

(vi) Failed to seal the wood heater in accordance with paragraph (g) of this section.

(2) Revocation of accreditation under this paragraph shall not take effect until the laboratory concerned has been given written notice by the Administrator setting forth the basis for the proposed determination and an opportunity for a hearing under §60.539. However, if revocation is ultimately upheld, all tests conducted by the laboratory after written notice was given may, at the discretion of the Administrator, be declared invalid.

(f) Unless revoked sooner, a certificate of accreditation granted by the Administrator shall be valid:

(1) For five years from the date of issuance, for certificates issued under paragraph (b) of this section, or

(2) Until July 1, 1990, for certificates issued under paragraph (c) of this section.

(g) A laboratory accredited by the Administrator shall seal any wood heater on which it performed certification tests, immediately upon completion or suspension of certification testing, by using a laboratory-specific seal.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995; 65 FR 61764, Oct. 17, 2000]

§60.536 Permanent label, temporary label, and owner's manual.

(a)(1) Each affected facility manufactured on or after July 1, 1988, or offered for sale at retail on or after July 1, 1990, shall have a permanent label affixed to it that meets the requirements of this section.

(2) Except for wood heaters subject to §60.530 (e), (f), or (g), the permanent label shall contain the following information:

(i) Month and year of manufacture,

(ii) Model name or number, and

(iii) Serial number.

(3) The permanent label shall:

(i) Be affixed in a readily visible or accessible location,

(ii) Be at least 8.9 cm long and 5.1 cm wide (3½ inches long and 2 inches wide).

(iii) Be made of a material expected to last the lifetime of the wood heater,

(iv) Present required information in a manner so that it is likely to remain legible for the lifetime of the wood heater, and

(v) Be affixed in such a manner that it cannot be removed from the appliance without damage to the label.

(4) The permanent label may be combined with any other label, as long as the required information is displayed, and the integrity of the permanent label is not compromised.

(b) If the wood heater belongs to a model line certified under §60.533, and has not been found to exceed the applicable emission limits or tolerances through quality assurance testing, one of the following statements, as appropriate, shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified to comply with July, 1988, particulate emission standards.

Not approved for sale after June 30, 1992.

or

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified to comply with July, 1990, particulate emission standards.

(c)(1) If compliance is demonstrated under § 60.530(c), the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified under 40 CFR 60.530(c). Not approved for sale after June 30, 1992.

(2) If compliance is demonstrated under § 60.533(h), one of the following statements, as appropriate, shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified under 40 CFR 60.533(h) to comply with July, 1988 particulate emissions standards. Not approved for sale after June 30, 1992.

or

U.S. ENVIRONMENTAL PROTECTION AGENCY

Certified under 40 CFR 60.533(h), to comply with July, 1990 particulate emissions standards.

(d) Any label statement under paragraph (b) or (c) of this section constitutes a representation by the manufacturer as to any wood heater that bears it:

(1) That certification was in effect at the time the wood heater left the possession of the manufacturer,

(2) That the manufacturer was, at the time the label was affixed, conducting a quality assurance program in conformity with § 60.533(o),

(3) That as to any wood heater individually tested for emissions by the manufacturer under § 60.533(o)(3), that it met the applicable emissions limits, and

(4) That as to any wood heater individually inspected for tolerances under § 60.533(o)(2), that the wood heater is within applicable tolerances.

(e) If an affected facility is exempt from the emission limits in § 60.532 under the provisions of § 60.530(d), the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Approved for sale until June 30, 1991.

(f)(1) If an affected facility is manufactured in the U.S. for export, the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Export stove. May not be operated within the United States.

(2) If an affected facility is manufactured for use for research and development purposes as provided in § 60.530(f), the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Research Stove. Not approved for sale.

(3) If an appliance is a coal-only heater as defined in § 60.530, the following statement shall appear on the permanent label:

U.S. ENVIRONMENTAL PROTECTION AGENCY

This heater is only for burning coal. Use of any other solid fuel except for coal ignition purposes is a violation of Federal law.

(g) Any affected facility that does not qualify for labeling under any of paragraphs (b) through (f) of this section shall bear one of the following labels:

(1) If the test conducted under § 60.533(n) indicates that the facility does not meet applicable emissions limits:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Does not meet EPA particulate emission standards. IT IS AGAINST THE LAW TO OPERATE THIS WOOD HEATER.

(2) If the test conducted under § 60.533(n) indicates that the facility does meet applicable emissions limits:

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Meets EPA particulate emission standards.

(3) If the facility has not been tested as required by § 60.533(e):

U.S. ENVIRONMENTAL PROTECTION AGENCY

Not certified. Not tested. Not approved for sale. IT IS AGAINST THE LAW TO OPERATE THIS WOOD HEATER.

(h) For affected facilities equipped with catalytic combustors, the following statement shall appear on the permanent label:

This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. Consult owner's manual for further information. It is against the law to operate this wood heater in a manner inconsistent with operating instructions in the owner's manual, or if the catalytic element is deactivated or removed.

(i) An affected facility permanently labeled under paragraph (b) or (c) of this section shall have attached to it a temporary label that shall contain only the following:

(1) A statement indicating the compliance status of the model. The statement shall be one of the statements provided in appendix I, section 2.2.1. Instructions on the statement to select are provided in appendix I.

(2) A graphic presentation of the composite particulate matter emission rate as determined in the certification test, or as determined by the Administrator if the wood heater is certified under § 60.530(c). The method for presenting this information is provided in appendix I, section 2.2.2.

(3) A graphic presentation of the overall thermal efficiency of the model. The method for presenting this information is provided in appendix I, section 2.2.3. At the discretion of the manufacturer, either the actual measured efficiency of the model or its estimated efficiency may be used for purposes of this paragraph. The actual efficiency is the efficiency measured in tests conducted pursuant to § 60.534(d). The estimated efficiency shall be 72 percent if the model is catalyst-equipped and 63 percent if the model is not catalyst equipped, and 78 percent if the model is designed to burn wood pellets for fuel. Wood heaters certified under § 60.530(c) shall use these estimated efficiencies.

(4) A numerical expression of the heat output range of the unit, in British thermal units per hour (Btu/hr) rounded to the nearest 100 Btu/hr.

(i) If the manufacturer elects to report the overall efficiency of the model based on test results pursuant to paragraph (i)(3) of this section, he shall report the heat output range measured during the efficiency test. If an accessory device is used in the certification test to achieve any low burn rate criterion specified in this subpart, and if this accessory device is not sold as a part of the wood heater, the heat output range shall be determined using the formula in paragraph (i)(4)(ii) of this section based upon the lowest sustainable burn rate achieved without the accessory device.

(ii) If the manufacturer elects to use the estimated efficiency as provided in paragraph (i)(3) of this section, he shall estimate the heat output of the model as follows:

$$HO_E = H_v \times (\text{Estimated overall efficiency}/100) \times BR$$

Where:

HO_E = Estimated heat output in Btu/hr

H_v = Heating value of fuel, 19,140 Btu/kg (8,700 Btu/lb)

BR = Burn rate of dry test fuel per hour, kg (lb)

(5) Statements regarding the importance of operation and maintenance. (Instructions regarding which statements must be used are provided in appendix I, section 2.), and

(6) The manufacturer and the identification of the model.

(j)(1) An affected facility permanently labeled under paragraph (e), (f)(3), or (g) of this section have attached to it a temporary label that shall contain only the information provided for in appendix I, section 2.3, 2.4, or 2.5, as applicable.

(2) The temporary label of an affected facility permently labeled under paragraph (b), (c), (e), (f)(3), or (g) of this section shall:

(i) Be affixed to a location on the wood heater that is readily seen and accessible when the wood heater is offered for sale to consumers by any commercial owner;

(ii) Not be combined with any other label or information;

(iii) Be attached to the wood heater in such a way that it can be easily removed by the consumer upon purchase, except that the label on wood heaters displayed by a commercial owner may have an adhesive backing or other means to preserve the label to prevent its removal or destruction;

(iv) Be printed on 90 pound bond paper in black ink with a white background except that those for models that are not otherwise exempted which do not meet the applicable emission limits, or have not been tested pursuant to this subpart, shall be on a red background as described in appendix I, section 2.5;

(v) Have dimensions of 12.7 centimeters by 17.8 centimeters (5 inches by 7 inches) as described in appendix I, section 2.1;

(vi) Have wording, presentation of the graphic data, and typography as presented in appendix I.

(k)(1) Each affected facility offered for sale by a commercial owner must be accompanied by an owner's manual that shall contain the information listed in paragraph (k)(2) of this section (pertaining to installation), and paragraph (k)(3) of this section (pertaining to operation and maintenance) of this section. Such information shall be adequate to enable consumers to achieve optimal emissions performance. Such information shall be consistent with the operating instructions provided by the manufacturer to the laboratory for operating the wood heater during certification testing, except for details of the certification test that would not be relevant to the ultimate purchaser.

(2) Installation information: Requirements for achieving proper draft.

(3) Operation and maintenance information:

(i) Wood loading procedures, recommendations on wood selection, and warnings on what fuels not to use, such as treated wood, colored paper, cardboard, solvents, trash and garbage,

(ii) Fire starting procedures,

(iii) Proper use of air controls,

(iv) Ash removal procedures,

(v) Instructions on gasket replacement,

(vi) For catalytic models, information on the following pertaining to the catalytic combustor: Procedures for achieving and maintaining catalyst activity, maintenance procedures, procedures for determining deterioration or failure, procedures for replacement, and information on how to exercise warranty rights, and

(vii) For catalytic models, the following statement—

> This wood heater contains a catalytic combustor, which needs periodic inspection and replacement for proper operation. It is against the law to operate this wood heater in a manner inconsistent with operating instructions in this manual, or if the catalytic element is deactivated or removed.

(4) Any manufacturer using EPA model language contained in appendix I to satisfy any requirement of this paragraph shall be in compliance with that requirement, provided that the particular model language is printed in full, with only such changes as are necessary to ensure accuracy for the particular model line.

(l) Wood heaters that are affected by this subpart, but that have been owned and operated by a noncommercial owner, are not subject to paragraphs (j) and (k) of this section when offered for resale.

[53 FR 5873, Feb. 26, 1988, as amended at 53 FR 12009, Apr. 12, 1988; 64 FR 7466, Feb. 12, 1999; 65 FR 61764, Oct. 17, 2000]

§ 60.537 Reporting and recordkeeping.

(a)(1) Each manufacturer who holds a certificate of compliance under § 60.533(e) or (h) for a model line shall maintain records containing the information required by this paragraph with respect to that model line. Each manufacturer of a model line certified under § 60.530(c) shall maintain the information required by paragraphs (a)(3) and (a)(5) of this section for that model line.

(2)(i) All documentation pertaining to the certification test used to obtain certification, including the full test report and raw data sheets, laboratory technician notes, calculations, and the test results for all test runs.

(ii) Where a model line is certified under § 60.533(h) and later certified under § 60.533(e), all documentation pertaining to the certification test used to obtain certification in each instance shall be retained.

(3) For parameter inspections conducted pursuant to §60.533(o)(2), information indicating the extent to which tolerances for components that affect emissions as listed in §60.533(k)(2) were inspected, and at what frequency, the results of such inspections, remedial actions taken, if any, and any follow-up actions such as additional inspections,

(4) For emissions tests conducted pursuant to §60.533(o)(3), all test reports, data sheets, laboratory technician notes, calculations, and test results for all test runs, the remedial actions taken, if any, and any follow-up actions such as additional testing,

(5) The number of affected facilities that are sold each year, by certified model line,

(b)(1) Each accredited laboratory shall maintain records consisting of all documentation pertaining to each certification test, including the full test report and raw data sheets, technician notes, calculations, and the test results for all test runs.

(2) [Reserved]

(3) Each accredited laboratory shall report to the Administrator within 24 hours whenever a manufacturer which has notified the laboratory that it intends to apply for alternative certification for a model line fails to submit on schedule a representative unit of that model line for certification testing.

(c) Any wood heater upon which certification tests were performed based upon which certification was granted under §60.533(e) shall be retained (sealed and unaltered) at the manufacturer's facility for as long as the model line in question is manufactured. Any such wood heater shall be made available upon request to the Administrator for inspection and testing.

(d)–(e) [Reserved]

(f) Each manufacturer of an affected facility certified under §60.533 shall submit a report to the Administrator every 2 years following issuance of a certificate of compliance for each model line. This report shall certify that no changes in the design or manufacture of this model line have been made that require recertification under §60.533(k).

(g) Each manufacturer shall maintain records of the model and number of wood heaters exempted under §60.530(f).

(h) Each commercial owner of a wood heater previously owned by a non-commercial owner for his personal use shall maintain records of the name and address of the previous owner.

(i)(1) Unless otherwise specified, all records required under this section shall be maintained by the manufacturer or commercial owner of the affected facility for a period of no less than 5 years.

(2) Unless otherwise specified, all reports to the Administrator required under this subpart shall be made to: Stationary Source Compliance Division (EN–341), U.S. EPA, 1200 Pennsylvania Ave., NW., Washington, DC 20460 Attention: Wood Heater Program.

(3) A report to the Administrator required under this subpart shall be deemed to have been made when it is properly addressed and mailed, or placed in the possession of a commercial courier service.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995]

§60.538 Prohibitions.

(a) No person shall operate an affected facility that does not have affixed to it a permanent label pursuant to §60.536 (b), (c), (e), (f)(2), (f)(3), or (g)(2).

(b) No manufacturer shall advertise for sale, offer for sale, or sell an affected facility that—

(1) Does not have affixed to it a permanent label pursuant to §60.536, and

(2) Has not been tested when required by §60.533(n).

(c) On or after July 1, 1990, no commercial owner shall advertise for sale, offer for sale, or sell an affected facility that does not have affixed to it a permanent label pursuant to §60.536 (b), (c), (e), (f)(1), (f)(3), (g)(1) or (g)(2). No person shall advertise for sale, offer for sale, or sell an affected facility labeled under §60.536(f)(1) except for export.

(d)(1) No commercial owner shall advertise for sale, offer for sale or sell an affected facility permanently labeled under §60.536 (b) or (c) unless:

(i) The affected facility has affixed to it a removable label pursuant to § 60.536 of this subpart,

(ii) He provides any purchaser or transferee with an owner's manual pursuant to § 60.536(k) of this subpart, and

(iii) He provides any purchaser or transferee with a copy of the catalytic combustor warranty (for affected facilities with catalytic combustors).

(2) No commercial owner shall advertise for sale, offer for sale, or sell an affected facility permanently labeled under § 60.536 (e), (f)(3), or (g), unless the affected facility has affixed to it a removable label pursuant to § 60.536 of this subpart. This prohibition does not apply to wood heaters affected by this subpart that have been previously owned and operated by a noncommercial owner.

(3) A commercial owner other than a manufacturer complies with the requirements of paragraph (d) of this section if he—

(i) Receives the required documentation from the manufacturer or a previous commercial owner and

(ii) Provides that documentation unaltered to any person to whom the wood heater that it covers is sold or transferred.

(e)(1) In any case in which the Administrator revokes a certificate of compliance either for the knowing submission of false or inaccurate information or other fraudulent acts, or based on a finding under § 60.533(l)(1)(ii) that the certification test was not valid, he may give notice of that revocation and the grounds for it to all commercial owners.

(2) From and after the date of receipt of the notice given under paragraph (e)(1) of this section, no commercial owner may sell any wood heater covered by the revoked certificate (other than to the manufacturer) unless

(i) The wood heater has been tested as required by § 60.533(n) and labeled as required by § 60.536(g) or

(ii) The model line has been recertified in accordance with this subpart.

(f) No person shall install or operate an affected facility except in a manner consistent with the instructions on its permanent label and in the owner's manual pursuant to § 60.536(l) of this subpart.

(g) No person shall operate an affected facility which was originally equipped with a catalytic combustor if the catalytic element is deactivated or removed.

(h) No person shall operate an affected facility that has been physically altered to exceed the tolerance limits of its certificate of compliance.

(i) No person shall alter, deface, or remove any permanent label required to be affixed pursuant to § 60.536 of this subpart.

[53 FR 5873, Feb. 26, 1988; 53 FR 14889, Apr. 26, 1988, as amended at 63 FR 64874, Nov. 24, 1998]

§ 60.539 Hearing and appeal procedures.

(a)(1) In any case where the Administrator—

(i) Denies an application under § 60.530(c) or § 60.533(e),

(ii) Issues a notice of revocation of certification under § 60.533(l),

(iii) Denies an application for laboratory accreditation under § 60.535, or

(iv) Issues a notice of revocation of laboratory accreditation under § 60.535(e), the manufacturer or laboratory affected may request a hearing under this section within 30 days following receipt of the required notification of the action in question.

(2) In any case where the Administrator issues a notice of revocation under § 60.533(p), the manufacturer may request a hearing under this section with the time limits set out in § 60.533(p)(5).

(b) Any hearing request shall be in writing, shall be signed by an authorized representative of the petitioning manufacturer or laboratory, and shall include a statement setting forth with particularity the petitioner's objection to the Administrator's determination or proposed determination.

(c)(1) Upon receipt of a request for a hearing under paragraph (a) of this section, the Administrator shall request the Chief Administrative Law Judge to designate an Administrative Law Judge as Presiding Officer for the hearing. If the Chief Administrative Law Judge replies that no Administrative Law Judge is available to perform this function, the Administrator shall designate a Presiding Officer who has not had any prior responsibility for the matter under review, and who is not subject to the direct control or supervision of someone who has had such responsibility.

(2) The hearing shall commence as soon as practicable at a time and place fixed by the Presiding Officer.

(3)(i) A motion for leave to intervene in any proceeding conducted under this section must set forth the grounds for the proposed intervention, the position and interest of the movant and the likely impact that intervention will have on the expeditious progress of the proceeding. Any person already a party to the proceeding may file an answer to a motion to intervene, making specific reference to the factors set forth in the foregoing sentence and paragraph (c)(3)(iii) of this section within ten (10) days after service of the motion for leave to intervene.

(ii) A motion for leave to intervene in a proceeding must ordinarily be filed before the first prehearing conference or, in the absence of a prehearing conference, prior to the setting of a time and place for a hearing. Any motion filed after that time must include, in addition to the information set forth in paragraph (c)(3)(i) of this section, a statement of good cause for the failure to file in a timely manner. The intervenor shall be bound by any agreements, arrangements and other matters previously made in the proceeding.

(iii) A motion for leave to intervene may be granted only if the movant demonstrates that his presence in the proceeding would not unduly prolong or otherwise prejudice the adjudication of the rights of the original parties, and that movant may be adversely affected by a final order. The intervenor shall become a full party to the proceeding upon the granting of leave to intervene.

(iv) Persons not parties to the proceeding may move for leave to file amicus curiae briefs. The movant shall state his interest and the reasons why the proposed amicus brief is desirable. If the motion is granted, the Presiding Officer or Administrator shall issue an order setting the time for filing such brief. An amicus curia may participate in any briefing after his motion is granted, and shall be served with all briefs, reply briefs, motions, and orders relating to issues to be briefed.

(4) In computing any period of time prescribed or allowed in this subpart, the day of the event from which the designated period begins to run shall not be included. Saturdays, Sundays, and Federal legal holidays shall be included. When a stated time expires on a Saturday, Sunday or legal holiday, the stated time period shall be extended to include the next business day.

(d)(1) Upon his appointment the Presiding Officer shall establish a hearing file. The file shall consist of the notice issued by the Administrator under §60.530(c), §60.533(e), §60.533(1), §60.533(p), §60.535(a), or §60.535(e), together with any accompanying material, the request for a hearing and the supporting data submitted therewith, and all documents relating to the request for certification or accreditation, or the proposed revocation of either.

(2) The hearing file shall be available for inspection by any party, to the extent authorized by law, at the office of the Presiding Officer, or other place designated by him.

(e) Any party may appear in person, or may be represented by counsel or by any other duly authorized representative.

(f)(1) The Presiding Officer upon the request of any party, or at his discretion, may order a prehearing conference at a time and place specified by him to consider the following:

(i) Simplification of the issues,

(ii) Stipulations, admissions of fact, and the introduction of documents,

(iii) Limitation of the number of expert witnesses,

(iv) Possibility of agreement disposing of all or any of the issues in dispute,

(v) Such other matters as may aid in the disposition of the hearing, including such additional tests as may be agreed upon by the parties.

(2) The results of the conference shall be reduced to writing by the Presiding Officer and made part of the record.

(g)(1) Hearings shall be conducted by the Presiding Officer in an informal but orderly and expeditious manner. The parties may offer oral or written evidence, subject to the exclusion by the Presiding Officer of irrelevant, immaterial and repetitious evidence.

(2) Witnesses will not be required to testify under oath. However, the Presiding Officer shall call to the attention of witnesses that their statements may be subject to penalties under title 18, U.S.C. 1001 for knowingly making false statements or representations or using false documents in any matter within the jurisdiction of any department or agency of the United States.

(3) Any witness may be examined or cross-examined by the Presiding Officer, the parties, or their representatives.

(4) Hearings shall be recorded verbatim. Copies of transcripts of proceedings may be purchased by the applicant from the reporter.

(5) All written statements, charts, tabulations, and similar data offered in evidence at the hearings shall, upon a showing satisfactory to the Presiding Officer of their authenticity, relevancy, and materiality, be received in evidence and shall constitute a part of the record.

(h)(1) The Presiding Officer shall make an initial decision which shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the record. The findings, conclusions, and written decision shall be provided to the parties and made a part of the record. The initial decision shall become the decision of the Environmental Appeals Board without further proceedings unless there is an appeal to the Environmental Appeals Board or motion for review by the Environmental Appeals Board. Except as provided in paragraph (h)(3) of this section, any such appeal shall be taken within 20 days of the date the initial decision was filed.

(2) The Administrator delegates authority to the Environmental Appeals Board to issue final decisions in appeals filed under this section. An appeal directed to the Administrator, rather than to the Environmental Appeals Board, will not be considered. This delegation of authority to the Environmental Appeals Board does not preclude the Environmental Appeals Board from referring an appeal or a motion filed under this part to the Administrator for decision when the Environmental Appeals Board, in its discretion, deems it appropriate to do so. When an appeal or motion is referred to the Administrator, all parties shall be so notified and the rules in this section referring to the Environmental Appeals Board shall be interpreted as referring to the Administrator. On appeal from or review of the initial decision, the Environmental Appeals Board shall have all the powers that it would have in making the initial decision including the discretion to require or allow briefs, oral argument, the taking of additional evidence or the remanding to the Presiding Officer for additional proceedings. The decision by the Environmental Appeals Board shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the appeal or considered in the review.

(3) In any hearing requested under paragraph (a)(2) of this section the Presiding Officer shall render his initial decision within 60 days of that request. Any appeal to the Environmental Appeals Board shall be taken within 10 days of the initial decision, and the Environmental Appeals Board shall render its decision in the appeal within 30 days of the filing of the appeal.

[53 FR 5873, Feb. 26, 1988, as amended at 57 FR 5328, Feb. 13, 1992]

§ 60.539a Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities that shall not be delegated to states:

(1) [Reserved]

(2) Section 60.531, Definitions,

(3) Section 60.533, Compliance and certification,

(4) Section 60.534, Test methods and procedures,

(5) Section 60.535, Laboratory accreditation,

(6) Section 60.536(i)(2), determination of emission rates for purposes of labeling wood heaters certified under § 60.530(c),

(7) Section 60.537, Reporting and recordkeeping,

(8) Section 60.538(e), revocation of certification, and

(9) Section 60.539, Hearings and appeals procedures.

[53 FR 5873, Feb. 26, 1988, as amended at 60 FR 33925, June 29, 1995]

§60.539b General provisions exclusions.

The following provisions of subpart A of part 60 do not apply to this subpart:

(a) Section 60.7,

(b) Section 60.8(a), (c), (d), (e), and (f), and

(c) Section 60.15(d).

Subpart BBB—Standards of Performance for the Rubber Tire Manufacturing Industry

SOURCE: 52 FR 34874, Sept. 15, 1987, unless otherwise noted.

§60.540 Applicability and designation of affected facilities.

(a) The provisions of this subpart, except as provided in paragraph (b) of this section, apply to each of the following affected facilities in rubber tire manufacturing plants that commence construction, modification, or reconstruction after January 20, 1983: each undertread cementing operation, each sidewall cementing operation, each tread end cementing operation, each bead cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C automatic operation.

(b) The owner or operator of each undertread cementing operation and each sidewall cementing operation in rubber tire manufacturing plants that commenced construction, modification, or reconstruction after January 20, 1983, and before September 15, 1987, shall have the option of complying with the alternate provisions in §60.542a. This election shall be irreversible. The alternate provisions in §60.542a do not apply to any undertread cementing operation or sidewall cementing operation that is modified or reconstructed after September 15, 1987. The affected facilities in this paragraph are subject to all applicable provisions of this subpart.

(c) Although the affected facilities listed under §60.540(a) are defined in reference to the production of components of a ''tire,'' as defined under §60.541(a), the percent emission reduction requirements and VOC use cutoffs specified under §60.542(a)(1), (2), (6), (7)(iii), (7)(iv), (8), (9), and (10) refer to the total amount of VOC used (the amount allocated to the affected facility), including the VOC used in cements and organic solvent-based green tire spray materials for tire types not listed in the §60.541(a) definition of ''tire.''

[52 FR 34874, Sept. 15, 1987, as amended at 54 FR 38635, Sept. 19, 1989]

§60.541 Definitions.

(a) All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in subpart A of this part.

Bead means rubber-covered strands of wire, wound into a circular form, which ensure a seal between a tire and the rim of the wheel onto which the tire is mounted.

Bead cementing operation means the system that is used to apply cement to the bead rubber before or after it is wound into its final circular form. A bead cementing operation consists of a cement application station, such as a dip tank, spray booth and nozzles, cement trough and roller or swab applicator, and all other equipment necessary to apply cement to wound beads or bead rubber and to allow evaporation of solvent from cemented beads.

Component means a piece of tread, combined tread/sidewall, or separate sidewall rubber, or other rubber strip that is combined into the sidewall of a finished tire.

Drying area means the area where VOC from applied cement or green tire sprays is allowed to evaporate.

Enclosure means a structure that surrounds a VOC (cement, solvent, or spray) application area and drying area, and that captures and contains evaporated VOC and vents it to a control device. Enclosures may have permanent and temporary openings.

Green tire means an assembled, uncured tire.

Green tire spraying operation means the system used to apply a mold release agent and lubricant to the inside and/or outside of green tires to facilitate the curing process and to prevent rubber from sticking to the curing press. A green tire spraying operation consists of a booth where spraying is performed, the spray application station, and related equipment, such as the lubricant supply system.

Michelin-A operation means the operation identified as Michelin-A in the Emission Standards and Engineering Division confidential file as referenced in Docket A–80–9, Entry II–B–12.

Michelin-B operation means the operation identified as Michelin-B in the Emission Standards and Engineering Division confidential file as referenced in Docket A–80–9, Entry II–B–12.

Michelin-C-automatic operation means the operation identifed as Michelin-C-automatic in the Emission Standards and Engineering Division confidential file as referenced in Docket A–80–9, Entry II–B–12.

Month means a calendar month or a prespecified period of 28 days or 35 days (utilizing a 4–4–5-week recordkeeping and reporting schedule).

Organic solvent-based green tire spray means any mold release agent and lubricant applied to the inside or outside of green tires that contains more than 12 percent, by weight, of VOC as sprayed.

Permanent opening means an opening designed into an enclosure to allow tire components to pass through the enclosure by conveyor or other mechanical means, to provide access for permanent mechanical or electrical equipment, or to direct air flow into the enclosure. A permanent opening is not equipped with a door or other means of obstruction of air flow.

Sidewall cementing operation means the system used to apply cement to a continuous strip of sidewall component or any other continuous strip component (except combined tread/sidewall component) that is incorporated into the sidewall of a finished tire. A sidewall cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to sidewall strips or other continuous strip component (except combined tread/sidewall component) and to allow evaporation of solvent from the cemented rubber.

Temporary opening means an opening into an enclosure that is equipped with a means of obstruction, such as a door, window, or port, that is normally closed.

Tire means any agricultural, airplane, industrial, mobile home, light-duty truck and/or passenger vehicle tire that has a bead diameter less than or equal to 0.5 meter (m) (19.7 inches) and a cross section dimension less than or equal to 0.325 m (12.8 in.), and that is mass produced in an assembly-line fashion.

Tread end cementing operation means the system used to apply cement to one or both ends of the tread or combined tread/sidewall component. A tread end cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to tread ends and to allow evaporation of solvent from the cemented tread ends.

Undertread cementing operation means the system used to apply cement to a continuous strip of tread or combined tread/sidewall component. An undertread cementing operation consists of a cement application station and all other equipment, such as the cement supply system and feed and takeaway conveyors, necessary to apply cement to tread or combined tread/sidewall strips and to allow evaporation of solvent from the cemented tread or combined tread/sidewall.

VOC emission control device means equipment that destroys or recovers VOC.

VOC emission reduction system means a system composed of an enclosure, hood, or other device for containment and capture of VOC emissions and a VOC emission control device.

Water-based green tire spray means any mold release agent and lubricant applied to the inside or outside of green tires that contains 12 percent or less, by weight, of VOC as sprayed.

(b) Notations used under this subpart are defined below:

B_o=total number of beads cemented at a particular bead cementing affected facility for a month

C_a=concentration of VOC in gas stream in vents after a control device (parts per million by volume)

C_b=concentration of VOC in gas stream in vents before a control device (parts per million by volume)

C_f=concentration of VOC in each gas stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (parts per million by volume)

D_c=density of cement or spray material (grams per liter (lb per gallon))

D_r=density of VOC recovered by an emission control device (grams per liter (lb per gallon))

E=emission control device efficiency, inlet versus outlet (fraction)

F_c=capture efficiency, VOC captured and routed to one control device versus total VOC used for an affected facility (fraction)

F_o=fraction of total mass of VOC used in a month by all facilities served by a common cement or spray material distribution system that is used by a particular affected facility served by the common distribution system

G=monthly average mass of VOC used per tire cemented or sprayed with a water-based green tire spray for a particular affected facility (grams (lb) per tire)

G_b=monthly average mass of VOC used per bead cemented for a particular bead cementing affected facility (grams (lb) per bead)

L_c=volume of cement or spray material used for a month (liters (gallons))

L_r=volume of VOC recovered by an emission control device for a month (liters (gallons))

M=total mass of VOC used for a month by all facilities served by a common cement or spray material distribution system (grams (lb))

M_o=total mass of VOC used at an affected facility for a month (grams (lb))

M_r=mass of VOC recovered by an emission control device for a month (grams (lb))

N=mass of VOC emitted to the atmosphere per tire cemented or sprayed with a water-based green tire spray for an affected facility for a month (grams (lb) per tire)

N_b=mass of VOC emitted per bead cemented for an affected facility for a month (grams (lb) per bead)

Q_a=volumetric flow rate in vents after a control device (dry standard cubic meters (dry standard cubic feet) per hour)

Q_b=volumetric flow rate in vents before a control device (dry standard cubic meters (dry standard cubic feet) per hour)

Q_f=volumetric flow rate of each stream vented directly to the atmosphere from an affected facility or from a temporary enclosure around an affected facility (dry standard cubic meters (dry standard cubic feet) per hour)

R=overall efficiency of an emission reduction system (fraction)

T_d=total number of days in monthly compliance period (days)

T_o=total number of tires cemented or sprayed with water-based green tire sprays at a particular affected facility for a month

W_o=weight fraction of VOC in a cement or spray material.

[52 FR 34874, Sept. 15, 1987, as amended at 65 FR 61764, Oct. 17, 2000]

§ 60.542 Standards for volatile organic compounds.

(a) On and after the date on which the initial performance test, required by § 60.8, is completed, but no later than 180 days after initial startup, each owner or operator subject to the provisions of this subpart shall comply with the following conditions:

(1) For each undertread cementing operation:

(i) Discharge into the atmosphere no more than 25 percent of the VOC used (75 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 3,870 kg (8,531 lb) of VOC per 28 days,

(B) 4,010 kg (8,846 lb) of VOC per 29 days,

(C) 4,150 kg (9,149 lb) of VOC per 30 days,

(D) 4,280 kg (9,436 lb) of VOC per 31 days, or

(E) 4,840 kg (10,670 lb) of VOC per 35 days.

(2) For each sidewall cementing operation:

(i) Discharge into the atmosphere no more than 25 percent of the VOC used (75 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 3,220 kg (7,099 lb) of VOC per 28 days,

(B) 3,340 kg (7,363 lb) of VOC per 29 days,

(C) 3,450 kg (7,606 lb) of VOC per 30 days,

(D) 3,570 kg (7,870 lb) of VOC per 31 days, or

(E) 4,030 kg (8,885 lb) of VOC per 35 days.

(3) For each tread end cementing operation: Discharge into the atmosphere no more than 10 grams (0.022 lb) of VOC per tire cemented for each month.

(4) For each bead cementing operation: Discharge into the atmosphere no more than 5 grams (0.011 lb) of VOC per bead cemented for each month.

(5) For each green tire spraying operation where only water-based sprays are used:

(i) Discharge into the atmosphere no more than 1.2 grams (0.0026 lb) of VOC per tire sprayed with an inside green tire spray for each month; and

(ii) Discharge into the atmosphere no more than 9.3 grams (0.021 lb) of VOC per tire sprayed with an outside green tire spray for each month.

(6) For each green tire spraying operation where only ogranic solvent-based sprays are used:

(i) Discharge into the atmosphere no more than 25 percent of the VOC used (75 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 3,220 kg (7,099 lb) of VOC per 28 days,

(B) 3,340 kg (7,363 lb) of VOC per 29 days,

(C) 3,450 kg (7,606 lb) of VOC per 30 days,

(D) 3,570 kg (7,870 lb) of VOC per 31 days, or

(E) 4,030 kg (8,885 lb) of VOC per 35 days.

(7) For each green tire spraying operation where both water-based and organic solvent-based sprays are used:

(i) Discharge into the atmosphere no more than 1.2 grams (0.0026 lb) of VOC per tire sprayed with a water-based inside green tire spray for each month; and

(ii) Discharge into the atmosphere no more than 9.3 grams (0.021 lb) of VOC per tire sprayed with a water-based outside green tire spray for each month; and either

(iii) Discharge into the atmosphere no more than 25 percent of the VOC used in the organic solvent-based green tire sprays (75 percent emission reduction) for each month; or

(iv) Maintain total (uncontrolled) VOC use for all organic solvent-based green tire sprays less than or equal to the levels specified under paragraph (a)(6)(ii) of this section.

(8) For each Michelin-A operation:

(i) Discharge into the atmosphere no more than 35 percent of the VOC used (65 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 1,570 kg (3,461 lb) of VOC per 28 days,

(B) 1,630 kg (3,593 lb) of VOC per 29 days,

(C) 1,690 kg (3,726 lb) of VOC per 30 days,

(D) 1,740 kg (3,836 lb) of VOC per 31 days, or

(E) 1,970 kg (4,343 lb) of VOC per 35 days.

(9) For each Michelin-B operation:

(i) Discharge into the atmosphere no more than 25 percent of the VOC used (75 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified below, depending upon the duration of the compliance period:

(A) 1,310 kg (2,888 lb) of VOC per 28 days,

(B) 1,360 kg (2,998 lb) of VOC per 29 days,

(C) 1,400 kg (3,086 lb) of VOC per 30 days,

(D) 1,450 kg (3,197 lb) of VOC per 31 days, or

(E) 1,640 kg (3,616 lb) of VOC per 35 days.

(10) For each Michelin-C-automatic operation:

(i) Discharge into the atmosphere no more than 35 percent of the VOC used (65 percent emission reduction) for each month; or

(ii) Maintain total (uncontrolled) VOC use less than or equal to the levels specified under paragraph (a)(8)(ii) of this section.

[52 FR 34874, Sept. 15, 1987, as amended at 65 FR 61764, Oct. 17, 2000]

§60.542a Alternate standard for volatile organic compounds.

(a) On and after the date on which the initial performance test, required by §60.8, is completed, but no later than 180 days after September 19, 1989, each owner or operator subject to the provisions in §60.540(b) shall not cause to be discharged into the atmosphere more than: 25 grams (0.055 lb) of VOC per tire processed for each month if the operation uses 25 grams (0.055 lb) or less of VOC per tire processed and does not employ a VOC emission reduction system.

(b) [Reserved]

[54 FR 38635, Sept. 19, 1989, as amended at 65 FR 61765, Oct. 17, 2000]

§60.543 Performance test and compliance provisions.

(a) Section 60.8(d) does not apply to the monthly performance test procedures required by this subpart. Section 60.8(d) does apply to initial performance tests and to the performance tests specified under paragraphs (b)(2) and (b)(3) of this section. Section 60.8(f) does not apply when Method 24 is used.

(b) Performance tests shall be conducted as follows:

(1) The owner or operator of an affected facility shall conduct an initial performance test, as required under §60.8(a), except as described under paragraph (j) of this section. The owner or operator of an affected facility shall thereafter conduct a performance test each month, except as described under paragraphs (b)(4), (g)(1), and (j) of this section. Initial and monthly performance tests shall be conducted according to the procedures in this section.

(2) The owner or operator of an affected facility who elects to use a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), as described under paragraphs (f) and (g) of this section, shall repeat the performance test when directed by the Administrator or when the owner or operator elects to operate the capture system or control device at conditions different from the most recent determination of overall reduction efficiency. The performance test shall be conducted in accordance with the procedures described under paragraphs (f)(2) (i) through (iv) of this section.

(3) The owner or operator of an affected facility who seeks to comply with the equipment design and performance specifications, as described under paragraph (j) of this section, shall repeat the performance test when directed by the Administrator or when the owner or operator elects to operate the capture system or control device at conditions different from the most recent determination of control device efficiency or measurement of capture system retention time or face velocity. The performance test shall be conducted in accordance with the procedures described under paragraph (f)(2)(ii) of this section.

(4) The owner or operator of each tread end cementing operation and each green tire spraying operation using only water-based sprays (inside and/or outside) containing less than 1.0 percent, by weight, of VOC is not required to conduct a monthly performance test as described in paragraph (d) of this section. In lieu of conducting a monthly performance test, the owner or operator of each tread end cementing operation and each green tire spraying operation shall submit formulation data or the results of Method 24 analysis annually to verify the VOC content of each tread end cement and each green tire spray material, provided the spraying formulation has not changed during the previous 12 months. If the spray material formulation changes, formulation data or Method 24 analysis of the new spray shall be conducted to determine the VOC content of the spray and reported within 30 days as required under §60.546(j).

(c) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation where the owner or operator seeks to comply with the uncontrolled monthly VOC use limits, the owner or operator shall use the following procedure to determine compliance with the applicable (depending upon duration of compliance period) uncontrolled monthly VOC use limit specified under § 60.542(a) (1)(ii), (2)(ii), (6)(ii), (7)(iv), (8)(ii), (9)(ii), and (10)(ii). If both undertread cementing and sidewall cementing are performed at the same affected facility during a month, then the kg/mo limit specified under § 60.542(a)(1)(ii) shall apply for that month.

(1) Determine the density and weight fraction VOC (including dilution VOC) of each cement or green tire spray from its formulation or by analysis of the cement or green tire spray using Method 24. If a dispute arises, the Administrator may require an owner or operator who used formulation data to analyze the cement or green tire spray using Method 24.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) by the following procedure:

(i) For each affected facility for which cement or green tire spray is delivered in batch or via a distribution system that serves only the affected facility:

$$M_o = \sum_{i=1}^{a} L_{c_i} D_{c_i} W_{o_i}$$

Where:

"a" equals the number of different cements or green tire sprays used during the month that are delivered in batch or via a distribution system that serves only a single affected facility.

(ii) For each affected facility for which cement or green tire spray is delivered via a common distribution system that also serves other affected or existing facilities:

(A) Calculate the total mass of VOC used for all of the facilities served by the common distribution system for the month (M):

$$M = \sum_{i=1}^{b} L_{c_i} D_{c_i} W_{o_i}$$

Where:

"b" equals the number of different cements or green tire sprays used during the month that are delivered via a common distribution system that also serves other affected or existing facilities.

(B) Determine the fraction (F_o) of M used at the affected facility by comparing the production records and process specifications for the material cemented or sprayed at the affected facility for the month to the production records and process specifications for the material cemented or sprayed at all other facilities served by the common distribution system for the month or by another procedure acceptable to the Administrator.

(C) Calculate the total monthly mass of VOC used at the affected facility for the month (M_o):

$$M_o = MF_o$$

(3) Determine the time duration of the monthly compliance period (T_d).

(d) For each tread end cementing operation and each green tire spraying operation where water-based cements or sprays containing 1.0 percent, by weight, of VOC or more are used (inside and/or outside) that do not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the VOC emission per tire limit specified under § 60.542 (a)(3), (a)(5)(i), (a)(5)(ii), (a)(7)(i), and (a)(7)(ii).

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as specified under paragraph (c)(2) of this section.

(3) Determine the total number of tires cemented or sprayed at the affected facility for the month (T_o) by the following procedure:

(i) For a trend end cementing operation, T_o equals the number of tread or combined tread/sidewall components that receive an application of tread end cement for the month.

(ii) For a green tire spraying operation that uses water-based inside green tire sprays, T_o equals the number of green tires that receive an application of water-based inside green tire spray for the month.

(iii) For a green tire spraying operation that uses water-based outside green tire sprays, T_o equals the number of green tires that receive an application of water-based outside green tire spray for the month.

(4) Calculate the mass of VOC used per tire cemented or sprayed at the affected facility for the month (G):

$$G = \frac{M_o}{T_o}$$

(5) Calculate the mass of VOC emitted per tire cemented or sprayed at the affected facility for the month (N):

$$N = G$$

(e) For each bead cementing operation that does not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the VOC emission per bead limit specified under § 60.542(a)(4).

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as specified under paragraph (c)(2) of this section.

(3) Determine the number of beads cemented at the affected facility during the month (B_o) using production records; B_o equals the number of beads that receive an application of cement for the month.

(4) Calculate the mass of VOC used per bead cemented at the affected facility for the month (G_b):

$$G_b = \frac{M_o}{B_o}$$

(5) Calculate the mass of VOC emitted per bead cemented at the affected facility for the month (N_b):

$$N_b = G_b$$

(f) For each tread end cementing operation and each bead cementing operation that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), the owner or operator shall use the following procedure to determine compliance with the emission limit specified under § 60.542(a) (3) and (4).

(1) Calculate the mass of VOC used per tire cemented at the affected facility for the month (G), as specified under paragraphs (d) (1) through (4) of this section, or mass of VOC used per bead cemented at the affected facility for the month (G_b), as specified under paragraphs (e) (1) through (4) of this section.

(2) Calculate the mass of VOC emitted per tire cemented at the affected facility for the month (N) or mass of VOC emitted per bead cemented for the affected facility for the month (N_b):

$$N = G\ (1\text{-}R)$$

$$N_b = G_b\ (1\text{-}R)$$

For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed under paragraphs (f)(2) (i) through (iv) of this section. After the initial performance test, the owner or operator may use the most recently determined overall reduction efficiency (R) for the performance test. No monthly performance tests are required. The performance test shall be repeated during conditions described under paragraph (b)(2) of this section.

(i) The owner or operator of an affected facility shall construct a temporary enclosure around the application and drying areas during the performance test for the purpose of capturing fugitive VOC emissions. The enclosure must be maintained at a negative pressure to ensure that all evaporated VOC are measurable. Determine the fraction (F_c) of total VOC used at the affected facility that enters the control device:

$$F_c = \frac{\sum_{i=1}^{m} C_{b_i} Q_{b_i}}{\sum_{i=1}^{m} C_{b_i} Q_{b_i} + \sum_{i=1}^{n} C_{f_i} Q_{f_i}}$$

Where:

"m" is the number of vents from the affected facility to the control device, and "n" is the number of vents from the affected facility to the atmosphere and from the temporary enclosure.

(ii) Determine the destruction efficiency of the control device (E) by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the control device:

$$E = \frac{\sum_{i=1}^{m} C_{b_i} Q_{b_i} - \sum_{i=1}^{p} C_{a_i} Q_{a_i}}{\sum_{i=1}^{m} C_{b_i} Q_{b_i}}$$

Where:

''m'' is the number of vents from the affected facility to the control device, and ''p'' is the number of vents after the control device.

(iii) Determine the overall reduction efficiency (R):

$$R = EF_c$$

(iv) The owner or operator of an affected facility shall have the option of substituting the following procedure as an acceptable alternative to the requirements prescribed under paragraph (f)(2)(i) of this section. This alternative procedure is acceptable only in cases where a single VOC is used and is present in the capture system. The average capture efficiency value derived from a minimum of three runs shall constitute a test.

(A) For each run, ''i,'' measure the mass of the material containing a single VOC used. This measurement shall be made using a scale that has both a calibration and a readability to within 1 percent of the mass used during the run. This measurement may be made by filling the direct supply reservoir (e.g., trough, tray, or drum that is integral to the operation) and related application equipment (e.g., rollers, pumps, hoses) to a marked level at the start of the run and then refilling to the same mark from a more easily weighed container (e.g., separate supply drum) at the end of the run. The change in mass of the supply drum would equal the mass of material used from the direct supply reservoir. Alternatively, this measurement may be made by weighing the direct supply reservoir at the start and end of the run or by weighing the direct supply reservoir and related application equipment at the start and end of the run. The change in mass would equal the mass of the material used in the run. If only the direct supply reservoir is weighed, the amount of material in or on the related application equipment must be the same at the start and end of the run. All additions of VOC containing material made to the direct supply reservoir during a run must be properly accounted for in determining the mass of material used during that run.

(B) For each run, ''i,'' measure the mass of the material containing a single VOC which is present in the direct supply reservoir and related application equipment at the start of the run, unless the ending weight fraction VOC in the material is greater than or equal to 98.5 percent of the starting weight fraction VOC in the material, in which case, this measurement is not required. This measurement may be made directly by emptying the direct supply reservoir and related application equipment and then filling them to a marked level from an easily weighed container (e.g. separate supply drum). The change in mass of the supply drum would equal the mass of material in the filled direct supply reservoir and related application equipment. Alternatively, this measurement may be made by weighing the direct supply reservoir and related application equipment at the start of the run and subtracting the mass of the empty direct supply reservoir and related application equipment (tare weight).

(C) For each run, ''i,'' the starting weight fraction VOC in the material shall be determined by Method 24 analysis of a sample taken from the direct supply reservoir at the beginning of the run.

(D) For each run, ''i,'' the ending weight fraction VOC in the material shall be determined by Method 24 analysis of a sample taken from the direct supply reservoir at the end of the run.

(E) For each run, ''i,'' in which the ending weight fraction VOC in the material is greater than or equal to 98.5 percent of the starting weight fraction VOC in the material, calculate the mass of the single VOC used (Mi) by multiplying the mass of the material used in the run by the starting weight fraction VOC of the material used in the run.

(F) For each run, ''i,'' in which the ending weight fraction VOC in the material is less than 98.5 percent of the starting weight fraction VOC in the material, calculate the mass of the single VOC used (M_i) as follows:

(*1*) Calculate the mass of VOC present in the direct supply reservoir and related application equipment at the start of the run by multiplying the mass of material in the direct supply reservoir and related application equipment at the start of the run by the starting weight fraction VOC in the material for that run.

(*2*) Calculate the mass of VOC present in the direct supply reservoir and related application equipment at the end of the run by multiplying the mass of material in the direct supply reservoir and related application equipment at the end of the run by the ending weight fraction VOC in the material for that run. The mass of material in the direct supply reservoir and related application equipment at the end of the run shall be calculated by subtracting the mass of material used in the run from the mass of material in the direct supply reservoir and related application equipment at the start of the run.

(*3*) The mass of the single VOC used (M_i) equals the mass of VOC present in the direct supply reservoir and related application equipment at the start of the run minus the mass of VOC present in the direct supply reservoir and related application eqiupment at the end of the run.

(G) If Method 25A is used to determine the concentration of the single VOC in the capture system, then calculate the capture efficiency (FC_i) for each run, "i," as follows:

$$FC_i = \frac{C_i \ \frac{W}{V} \ Q_i}{(M_i)\ (10^6)}$$

Where:

C_i = Average concentration of the single VOC in the capture system during run "i" (parts per million by volume) corrected for background VOC (see §60.547(a)(5)).

W = Molecular weight of the single VOC, mg/mg-mole (lb/lb-mole).

V = The volume occupied by one mole of ideal gas at standard conditions [20 °C, 760 mm Hg] on a wet basis, 2.405×10^{-5} m^3/mg-mole (385.3 ft^3/lb-mole).

Q_i = Volumetric flow in the capture system during run i, on a wet basis, adjusted to standard conditions, m^3 (ft^3) (see §60.547(a)(5)).

10^6 = ppm per unity.

M_i = Mass of the single VOC used during run i, mg (lb).

(H) If Method 25 is used to determine the concentration of the single VOC in the capture system, then calculate the capture efficiency (FC_i) for each run, "i," as follows:

$$FC_i = \frac{\frac{C_i}{(NC)(10^6)} \ \frac{(W)}{(V)} (Q_i)}{M_i}$$

Where: C_i = Average concentration of the single VOC in the capture system during run "i" (parts per million, as carbon, by volume) corrected for background VOC (see §60.547(a)(5)).

W = Molecular weight of the single VOC, mg/mg-mole (lb/lb-mole).

V = The volume occupied by one mole of ideal gas at standard conditions [20 °C, 760 mm Hg] on a wet basis, 2.405×10^{-5} m^3/mg-mole (385.3 ft^3/lb-mole).

Q_i = Volumetric flow in the capture system during run i, on a wet basis, adjusted to standard conditions, m^3 (ft^3) (see §60.547(a)(5)).

10^6 = ppm per unity.

M_i = Mass of the single VOC used during run i, mg (lb).

NC = Number of carbon atoms in one molecule of the single VOC.

(I) Calculate the average capture efficiency value, F_c as follows:

$$F_c = \frac{\sum_{i=1}^{n} FC_i}{n}$$

Where:

"n" equals the number of runs made in the test ($n \geq 3$). In cases where an alternative procedure in this paragraph is used, the requirements in paragraphs (f)(2) (ii) and (iii) of this section remain unchanged.

(g) For each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator), the owner or operator shall use the following procedure to determine compliance with the percent emission reduction requirement specified under § 60.542 (a) (1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), and (10)(i).

(1) For the initial performance test, the overall reduction efficiency (R) shall be determined as prescribed under paragraphs (f)(2) (i) through (iii) of this section. The performance test shall be repeated during conditions described under paragraph (b)(2) of this section. No monthly performance tests are required.

(h) For each tread end cementing operation and each bead cementing operation that uses a VOC emission reduction system with a control device that recovers VOC (e.g., carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the emission limit specified under § 60.542(a) (3) and (4).

(1) Calculate the mass of VOC used per tire cemented at the affected facility for the month (G), as specified under paragraphs (d) (1) through (4) of this section, or mass of VOC used per bead cemented at the affected facility for the month (G_b), as specified under paragraphs (e) (1) through (4) of this section.

(2) Calculate the total mass of VOC recovered from the affected facility for the month (M_r):

$$M_r = L_r \, D_r$$

(3) Calculate the overall reduction efficiency for the VOC emission reduction system (R) for the month:

$$R = \frac{M_r}{M_o}$$

(4) Calculate the mass of VOC emitted per tire cemented at the affected facility for the month (N) or mass of VOC emitted per bead cemeted at the affected facility for the month (N_b):

$$N = G\ (1\text{-}R)$$

$$N_b = G_b\ (1\text{-}R)$$

(i) For each undertread cementing operation, each sidewall cemeting operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation that uses a VOC emission reduction system with a control device that recovers (VOC) (e.g., carbon adsorber), the owner or operator shall use the following procedure to determine compliance with the percent reduction requirement specified under § 60.542(a) (1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), and (10)(i).

(1) Determine the density and weight fraction VOC as specified under paragraph (c)(1) of this section.

(2) Calculate the total mass of VOC used at the affected facility for the month (M_o) as described under paragraph (c)(2) of this section.

(3) Calculate the total mass of VOC recovered from the affected facility for the month (M_r) as described under paragraph (h)(2) of this section.

(4) Calculate the overall reduction efficiency for the VOC emission reduction system (R) for the month as described under paragraph (h)(3) of this section.

(j) Rather than seeking to demonstrate compliance with the provisions of § 60.542(a) (1)(i), (2)(i), (6)(i), (7)(iii), or (9)(i) using the performance test procedures described under paragraphs (g) and (i) of this section, an owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation that use a VOC emission reduction system may seek to demonstrate compliance by meeting the equipment design and performance specifications listed under paragraphs (j)(1), (2), and (4) through (6) or under paragraphs (j)(1) and (3) through (6) of this section, and by conducting a control device efficiency performance test to determine compliance as described under paragraph (j)(7) of this section. The owner or operator shall conduct this performance test of the control device efficiency no later than 180 days after initial startup of the affected facility, as specified under § 60.8(a). Meeting the capture system design and performance specifications, in conjunction with operating a 95 percent efficient control device, is an acceptable means of demonstrating compliance with the standard. Therefore, the requirement for the initial performance test on the enclosure, as specified under § 60.8(a), is waived. No monthly performance tests are required.

(1) For each undertread cementing operation, each sidewall cementing operation, and each Michelin-B operation, the cement application and drying area shall be contained in an enclosure that meets the criteria specified under paragraphs (j) (2), (4), and (5) of this section; for each green tire spraying operation where organic solvent-based sprays are used, the spray application and drying area shall be contained in an enclosure that meets the criteria specified under paragraphs (j) (3), (4), and (5) of this section.

(2) The drying area shall be enclosed between the application area and the water bath or to the extent necessary to contain all tire components for at least 30 seconds after cement application, whichever distance is less.

(3) Sprayed green tires shall remain in the enclosure for a minimum of 30 seconds after spray application.

(4) A minimum face velocity of 30.5 meters (100 feet) per minute shall be maintained continuously through each permanent opening into the enclosure when all temporary enclosure openings are closed. The cross-sectional area of each permanent opening shall be divided into at least 12 equal areas, and a velocity measurement shall be performed at the centroid of each equal area with an anemometer or similar velocity monitoring device; the face velocity of each permanent opening is the average value of the velocity measurements taken. The monitoring device shall be calibrated and operated according to the manufacturer's instructions.

Temporary enclosure openings shall remain closed at all times except when worker access is necessary.

(5) The total area of all permanent openings into the enclosure shall not exceed the area that would be necessary to maintain the VOC concentration of the exhaust gas stream at 25 percent of the lower explosive limit (LEL) under the following conditions:

(i) The facility is operating at the maximum solvent use rate;

(ii) The face velocity through each permanent opening is 30.5 meters (100 feet) per minute; and

(iii) All temporary openings are closed.

(6) All captured VOC are ducted to a VOC emission control device that is operated on a continuous basis and that achieves at least a 95 percent destruction or recovery efficiency.

(7) The efficiency of the control device (E) for the initial performance test is determined by using values of the volumetric flow rate of each of the gas streams and the VOC content (as carbon) of each of the gas streams in and out of the control device as described under paragraph (f)(2)(ii) of this section. The control device efficiency shall be redetermined during conditions specified under paragraph (b)(3) of this section.

(k) Each owner or operator of an affected facility who initially elected to be subject to the applicable percent emission reduction requirement specified under § 60.542(a)(1)(i), (2)(i), (6)(i), (7)(iii), (8)(i), (9)(i), or (10)(i) and who later seeks to comply with the applicable total (uncontrolled) monthly VOC use limit specified under § 60.542(a)(1)(ii), (2)(ii), (6)(ii), (7)(iv), (8)(ii), (9)(ii), or (10)(ii) shall demonstrate, using the procedures described under paragraph (c) of this section, that the total VOC use at the affected facility has not exceeded the applicable total (uncontrolled) monthly

VOC use limit during each of the last 6 months of operation. The owner or operator shall be subject to the applicable percent emission reduction requirement until the conditions of this paragraph and § 60.546(h) are satisfied.

(l) In determining compliance for each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation, each Michelin-A operation, each Michelin-B operation, and each Michelin-C-automatic operation, the owner or operator shall include all the VOC used, recovered, or destroyed from cements and organic solvent-based green tire sprays including those cements or sprays used for tires other than those defined under § 60.541(a).

(m) In determining compliance for each tread end cementing operation, each bead cementing operation, and each green tire spraying operation, the owner or operator shall include only those tires defined under § 60.541(a) when determining T_o and B_o.

(n) For each undertread cementing operation and each sidewall cementing operation that does not use a VOC emission reduction system, the owner or operator shall use the following procedure to determine compliance with the VOC emission per tire limit specified in § 60.542a:

(1) Calculate the total mass of VOC (M_o) used at the affected facility for the month by the following procedure.

(i) For each affected facility for which cement is delivered in batch or via a distribution system which serves only that affected facility:

$$M_o = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi}$$

Where: "n" equals the number of different cements or sprays used during the month.

(ii) For each affected facility for which cement is delivered via a common distribution system which also serves other affected or existing facilities.

(A) Calculate the total mass (M) of VOC used for all of the facilities served by the common distribution system for the month:

$$M = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi}$$

Where: "n" equals the number of different cements or sprays used during the month.

(B) Determine the fraction (F_o) of "M" used by the affected facility by comparing the production records and process specifications for the material cemented at the affected facility for the month to the production records and process specifications for the material cemented at all other facilities served by the common distribution system for the month or by another procedure acceptable to the Administrator.

(C) Calculate the total monthly mass of VOC(M_o) used at the affected facility:

$$M_o = MF_o$$

(2) Determine the total number of tires (T_o) processed at the affected facility for the month by the following procedure.

(i) For undertread cementing, T_o equals the number of tread or combined tread/sidewall components which receive an application of undertread cement.

(ii) For sidewall cementing, T_o equals the number of sidewall components which receive an application of sidewall cement, divided by 2.

(3) Calculate the mass of VOC used per tire processed (G) by the affected facility for the month:

$$G = \frac{M_o}{T_o}$$

(4) Calculate the mass of VOC emitted per tire processed (N) for the affected facility for the month:

$$N = G$$

(5) Where the value of the mass of VOC emitted per tire processed (N) is less than or equal to the VOC emission per tire limit specified under § 60.542a, the affected facility is in compliance.

[52 FR 34874, Sept. 15, 1987; 52 FR 37874, Oct. 9, 1987, as amended at 54 FR 38635, Sept. 19, 1989; 65 FR 61765, Oct. 17, 2000]

§ 60.544 Monitoring of operations.

(a) Each owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder for the temperature of the gas stream in the combustion zone of the incinerator. The temperature monitoring device shall have an accuracy of 1 percent of the temperature being measured in °C or ±0.5 °C, whichever is greater.

(2) Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder, for the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The temperature monitoring devices shall have an accuracy of 1 percent of the temperature being measured in °C or ±0.5 °C, whichever is greater.

(3) For an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation where a carbon adsorber is used to meet the performance requirements specified under § 60.543(j)(6), an organics monitoring device used to indicate the concentration level of organic compounds based on a detection principle such as infrared, photoionization, or thermal conductivity, equipped with a continous recorder, for the outlet of the carbon bed.

(b) An owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation where a VOC recovery device other than a carbon adsorber is used to meet the performance requirements specified under § 60.543(j)(6), shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[52 FR 34874, Sept. 15, 1987, as amended at 65 FR 61765, Oct. 17, 2000]

§ 60.545 Recordkeeping requirements.

(a) Each owner or operator of an affected facility that uses a thermal incinerator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3–hour periods of operation for which the average temperature of the gas stream in the combustion zone was more than 28 °C (50 °F) below the combustion zone temperature measured during the most recent determination of the destruction efficiency of the thermal incinerator that demonstrated that the affected facility was in compliance.

(b) Each owner or operator of an affected facility that uses a catalytic incinerator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator, records of all 3-hour periods of operation for which the average temperature measured before the catalyst bed is more than 28 °C (50 °F) below the gas stream temperature measured before the catalyst bed during the most recent determination of destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance, and records of all 3-hour periods for which the average temperature difference across the catalyst bed is less than 80 percent of the temperature difference measured during the most recent determination of the destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance.

(c) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation that uses a carbon adsorber to meet the requirements specified under § 60.543(j)(6) shall maintain continuous records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases is more than 20 percent greater than the exhaust gas concentration level or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the affected facility was in compliance.

(d) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tires spraying operation where organic solvent-based sprays are used, Michelin-A operation, Michelin-B operation, or Michelin-C-automatic operation who seeks to comply with a specified VOC monthly usage limit shall maintain records of monthly VOC use and the number of days in each compliance period.

(e) Each owner or operator that is required to conduct monthly performance tests, as specified under § 60.543(b)(1), shall maintain records of the results of all monthly tests.

(f) Each owner or operator of a tread end cementing operation and green tire spraying operation using water-based cements or sprays containing less than 1.0 percent by weight of VOC, as specified under § 60.543(b)(4), shall maintain records of formulation data or the results of Method 24 analysis conducted to verify the VOC content of the spray.

[52 FR 34874, Sept. 15, 1987, as amended at 54 FR 38637, Sept. 19, 1989; 65 FR 61765, Oct. 17, 2000]

§ 60.546 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart, at the time of notification of the anticipated initial startup of an affected facility pursuant to § 60.7(a)(2), shall provide a written report to the Administrator declaring for each undertread cementing operation, each sidewall cementing operation, each green tire spraying operation where organic solvent-based sprays are used, each Michelin-A operation, each Michelin-B operation, and each Michelin-C automatic operation the emission limit he intends to comply with and the compliance method (where § 60.543(j) is applicable) to be employed.

(b) Each owner or operator subject to the provisions of this subpart, at the time of notification of the anticipated initial startup of an affected facility pursuant to § 60.7(a)(2), shall specify the monthly schedule (each calendar month or a 4-4-5-week schedule) to be used in making compliance determinations.

(c) Each owner or operator subject to the provisions of this subpart shall report the results of all initial performance tests, as required under § 60.8(a), and the results of the performance tests required under § 60.543 (b)(2) and (b)(3). The following data shall be included in the report for each of the above performance tests:

(1) For each affected facility for which the owner or operator seeks to comply with a VOC monthly usage limit specified under § 60.542(a): The monthly mass of VOC used (M_o) and the number of days in the compliance period (T_d).

(2) For each affected facility that seeks to comply with a VOC emission limit per tire or per bead specified under § 60.542(a) without the use of a VOC emission reduction system: the mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC emitted per tire cemented or sprayed (N), the number of beads cemeted (B_o), and the mass of VOC emitted per bead cemented (N_b).

(3) For each affected facility that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator) to comply with a VOC emission limit per tire or per bead specified under § 60.542(a): The mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC emitted per tire cemented or sprayed (N), the number of beads cemented (B_o), the mass of VOC emitted per bead cemented (N_b), the mass of VOC used per tire cemented or sprayed (G), the mass of VOC per bead cemented (G_b), the emission control device efficiency (E), the capture system efficiency (F_c), the face velocity through each permanent opening for the capture system with the temporary openings closed, and the overall system emission reduction (R).

(4) For each affected facility that uses a VOC emission reduction system with a control device that destroys VOC (e.g., incinerator) to comply with

a percent emission reduction requirement specified under § 60.542(a): The emission control device efficiency (E), the capture system efficiency (F_c), the face velocity through each permanent opening in the capture system with the temporary openings closed, and the overall system emission reduction (R).

(5) For each affected facility that uses a carbon adsorber to comply with a VOC emission limit per tire or per bead specified under § 60.542(a): The mass of VOC used (M_o), the number of tires cemented or sprayed (T_o), the mass of VOC used per tire cemented or sprayed (G), the number of beads cemented (B_o), the mass of VOC used per bead (G_b), the mass of VOC recovered (M_r), the overall system emission reduction (R), the mass of VOC emitted per tire cemented or sprayed (N), and the mass of VOC emitted per bead cemented (N_b).

(6) For each affected facility that uses a VOC emission reduction system with a control device that recovers VOC (e.g., carbon adsorber) to comply with a percent emission reduction requirement specified under § 60.542(a): The mass of VOC used (M_o), the mass of VOC recovered (M_r), and the overall system emission reduction (R).

(7) For each affected facility that elects to comply with the alternate limit specified under § 60.542a: The mass of VOC used (M_o), the number of tires processed (T_o), and the mass of VOC emitted per tire processed (N).

(d) Each owner or operator of an undertread cementing operation, sidewall cementing operation, green tire spraying operation where organic solvent-based sprays are used, or Michelin-B operation who seeks to comply with the requirements described under § 60.543(j) shall include in the initial compliance report a statement specifying, in detail, how each of the equipment design and performance specifications has been met. The initial compliance report also shall include the following data: The emission control device efficiency (E), the face velocity through each permanent enclosure opening with all temporary enclosure openings closed, the total area of all permanent enclosure openings, the total area of all temporary enclosure openings, the maximum solvent use rate (kg/hr or lb/hr), the type(s) of VOC used, the lower explosive limit (LEL) for each VOC used, and the length of time each component is enclosed after application of cement or spray material.

(e) Each owner or operator of an affected facility shall include the following data measured by the required monitoring device(s), as applicable, in the report for each performance test specified under paragraph (c) of this section.

(1) The average combustion temperature measured at least every 15 minutes and averaged over the performance test period of incinerator destruction efficiency for each thermal incinerator.

(2) The average temperature before and after the catalyst bed measured at least every 15 minutes and averaged over the performance test period of incinerator destruction efficiency for each catalytic incinerator.

(3) The concentration level or reading indicated by the organics monitoring device at the outlet of the adsorber, measured at least every 15 minutes and averaged over the performance test period of carbon adsorber recovery efficiency while the vent stream is normally routed and constituted.

(4) The appropriate data to be specified by the Administrator where a VOC recovery device other than a carbon adsorber is used.

(f) Once every 6 months each owner or operator subject to the provisions of §60.545 shall report, as applicable:

(1) Each monthly average VOC emission rate that exceeds the VOC emission limit per tire or per bead specified under §60.542(a), as applicable for the affected facility.

(2) Each monthly average VOC use rate that exceeds the monthly VOC usage limit specified under §60.542(a), as applicable for the affected facility.

(3) Each monthly average VOC emission reduction efficiency for a VOC recovery device (e.g., carbon adsorber) less than the percent efficiency limit specified under §60.542(a), as applicable for the affected facility.

(4) Each 3-hour period of operation for which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured

by the temperature monitoring device, is more than 28°C (50°F) below the combustion zone temperature measured during the most recent determination of the destruction efficiency of the thermal incinerator that demonstrated that the affected facility was in compliance.

(5) Each 3-hour period of operation for which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28°C (50°F) below the gas stream temperature measured before the catalyst bed during the most recent determination of the destruction efficiency of the catalyst incinerator that demonstrated that the affected facility was in compliance, and any 3-hour period for which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the temperature difference measured during the most recent determination of the destruction efficiency of the catalytic incinerator that demonstrated that the affected facility was in compliance.

(6) Each 3-hour period of operation during which the average concentration level or reading of VOC's in the exhaust gases from a carbon adsorber is more than 20 percent greater than the exhaust gas concentration level or reading measured by the organics monitoring device during the most recent determination of the recovery efficiency of the carbon adsorber that demonstrated that the affected facility was in compliance.

(g) The requirements for semiannual reports remain in force until and unless EPA, in delegating enforcement authority to a State under Section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with these requirements, provided that they comply with the requirements established by the State.

(h) Each owner or operator of an affected facility who initially elected to be subject to the applicable percent emission reduction requirement specified under § 60.542(a) and who later seeks to comply with the applicable total (uncontrolled) monthly VOC use limit specified under § 60.542(a) and who has satisfied the provisions specified under § 60.543(k) shall furnish the Administrator written notification no less than 30 days in advance of the date when he intends to be subject to the applicable VOC use limit instead of the applicable percent emission reduction requirement.

(i) The owner or operator of each undertread cementing operation and each sidewall cementing operation who qualifies for the alternate provisions as described in § 60.542a, shall furnish the Administrator written notification of the election no less than 60 days after September 19, 1989.

(j) The owner or operator of each tread end cementing operation and each green tire spraying (inside and/or outside) operation using water-based sprays containing less than 1.0 percent, by weight, of VOC as described in § 60.543(b)(1) shall furnish the Administrator, within 60 days initially and annually thereafter, formulation data or Method 24 results to verify the VOC content of the water-based sprays in use. If the spray formulation changes before the end of the 12-month period, formulation data or Method 24 results to verify the VOC content of the spray shall be reported within 30 days of the change.

[52 FR 34874, Sept. 15, 1987; 52 FR 37874, Oct. 9, 1987, as amended at 54 FR 38637, Sept. 19, 1989; 65 FR 61765, Oct. 17, 2000]

§ 60.547 Test methods and procedures.

(a) The test methods in appendix A to this part, except as provided under § 60.8(b), shall be used to determine compliance with § 60.542(a) as follows:

(1) Method 24 or formulation data for the determination of the VOC content of cements or green tire spray materials. In the event of dispute, Method 24 shall be the reference method. For Method 24, the cement or green tire spray sample shall be a 1-liter sample collected in a 1-liter container at a

point where the sample will be representative of the material as applied in the affected facility.

(2) Method 25 as the reference method for the determination of the VOC concentrations in each stack, both entering and leaving an emission control device. The owner or operator shall notify the Administrator at least 30 days in advance of any test by Method 25. For Method 25, the sampling time for each of three runs shall be at least 1 hour. Method 1 shall be used to select the sampling site, and the sampling point shall be the centroid of the duct or at a point no closer to the walls than 1.0 meter (3.3 feet). The minimum sample volume shall be 0.003 dry standard cubic meter (dscm) (0.11 dry standard cubic feet (dscf)) except that shorter sampling times or smaller volumes, when necessitated by process variables or other factors, may be approved by the Administrator.

(3) Method 2, 2A, 2C, or 2D, as appropriate, as the reference method for determination of the flow rate of the stack gas. The measurement site shall be the same as for the Method 25 sampling. A velocity traverse shall be made once per run within the hour that the Method 25 sample is taken.

(4) Method 4 for determination of stack gas moisture.

(5) Method 25 or Method 25A for determination of the VOC concentration in a capture system prior to a control device when only a single VOC is present (see § 60.543 (f)(2)(iv)(G) and (f)(2)(iv)(H)). The owner or operator shall notify the Administrator at least 30 days in advance of any test by either Method 25 or Method 25A. Method 1 shall be used to select the sampling site and the sampling point shall be the centroid of the duct or at a point no closer to the walls than 1.0 meter (3.3 feet). Method 2, 2A, 2C, or 2D, as appropriate, shall be used as the test method for the concurrent determination of gas flow rate in the capture system.

(i) For Method 25, the sampling time for each run shall be at least 1 hour. For each run, a concurrent sample shall be taken immediately upwind of the application area to determine the background VOC concentration of air drawn into the capture system. Subtract this reading from the reading obtained in the capture system for that run. The minimum sample volume shall be 0.003 dry standard cubic meter (dscm) (0.11 dry standard cubic feet (dscf)) except that shorter sampling times or smaller volumes, when necessitated by process variable or other factors, may be approved by the Administrator. Use Method 3 to determine the moisture content of the stack gas.

(ii) For Method 25A, the sampling time for each run shall be at least 1 hour. Instrument calibration shall be performed by the procedure given in Method 25A using the single VOC present in the capture system. A different calibration gas may be used if the results are corrected using an experimentally determined response factor comparing the alternative calibration gas to the single VOC used in the process. After the instrument has been calibrated, determine the background VOC concentration of the air drawn into the capture system immediately upwind of the application area for each run. The instrument does not need to be recalibrated for the background measurement. Subtract this reading from the reading obtained in the capture system for that run. The Method 25A results shall only be used in the alternative procedure for determination of capture efficiency described under § 60.543(f)(2)(iv)(G).

[52 FR 34874, Sept. 15, 1987, as amended at 54 FR 38638, Sept. 19, 1989; 65 FR 61765, Oct. 17, 2000]

§ 60.548 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authority which will not be delegated to States: § 60.543(c)(2)(ii)(B).

Subpart CCC [Reserved]

Subpart DDD—Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry

SOURCE: 55 FR 51035, Dec. 11, 1990, unless otherwise noted.

§ 60.560 Applicability and designation of affected facilities.

(a) *Affected facilities.* The provisions of this subpart apply to affected facilities involved in the manufacture of polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) as defined in § 60.561 of this subpart. The affected facilities designated below for polypropylene and polyethylene are inclusive of all equipment used in the manufacture of these polymers, beginning with raw materials preparation and ending with product storage, and cover all emissions emanating from such equipment.

(1) For process emissions from any polypropylene and polyethylene manufacturing process that uses a continuous process, the affected facilities are each of the following process sections: each raw materials preparation section, each polymerization reaction section, each material recovery section, each product finishing section, and each product storage section. These process sections are affected facilities for process emissions that are emitted continuously and for process emissions that are emitted intermittently.

(2) For process emissions from polystyrene manufacturing processes that use a continuous process, the affected facilities are each material recovery section. These process sections are affected facilities for only those process emissions that are emitted continuously.

(3) For process emissions from poly(ethylene terephthalate) manufacturing processes that use a continuous process, the affected facilities are each polymerization reaction section. If the process uses dimethyl terephthalate, then each material recovery section is also an affected facility. If the process uses terephthalic acid, then each raw materials preparation section is also an affected facility. These process sections are affected facilities for only those process emissions that are emitted continuously.

(4) For VOC emissions from equipment leaks from polypropylene, polyethylene, and polystyrene (including expandable polystyrene) manufacturing processes, the affected facilities are each group of fugitive emissions equipment (as defined in § 60.561) within any process unit (as defined in § 60.561). This subpart does not apply to VOC emissions from equipment leaks from poly(ethylene terephthalate) manufacturing processes.

(i) Affected facilities with a design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) shall be exempt from § 60.562–2.

(ii) Addition or replacement of equipment for the purposes of improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under § 60.562–2.

(b) *Applicability dates.* The applicability date identifies when an affected facility becomes subject to a standard. Usually, a standard has a single applicability date. However, some polypropylene and polyethylene affected facilities have a September 30, 1987, applicability date and others have a January 10, 1989, applicability date. The following paragraphs identify the applicability dates for all affected facilities subject to this subpart.

(1) *Polypropylene and polyethylene.* Each process section in a polypropylene or polyethylene production process is a potential affected facility for both continuous and intermittent emissions. The applicability date depends on when the process section was constructed, modified, or reconstructed and, in some instances, on the type of production process.

(i) The applicability date for any polypropylene or polyethylene affected facility that is constructed, modified, or reconstructed after January 10, 1989, regardless of the type of production process being used, is January 10, 1989.

(ii) Only some polypropylene or polyethylene process sections that are constructed, modified, or reconstructed on or before January 10, 1989, but after September 30, 1987, are affected facilities. These process sections (and the type of emissions to be controlled) are identified by an ''x'' in Table 1. The applicability date for the process sections (and the emissions to be controlled) that are identified by an ''x'' in Table 1 is September 30, 1987. Since the affected facilities that have a September 30, 1987, applicability date are determined by the type of production process (e.g., liquid phase, gas phase), each owner or operator shall identify the particular production process that applies to his or her particular process.

Polymer	Production process(es)	Process section	Emissions	
			Continuous	Intermittent
Polypropylene	Liquid Phase	Raw Materials Preparation	X	
		Polymerization Reaction	X	
		Material Recovery	X	X
		Product Finishing	X	
		Product Storage		
Polypropylene	Gas Phase	Raw Materials Preparation		
		Polymerization Reaction		X
		Material Recovery	X	
		Product Finishing		
		Product Storage		
Low Density Polyethylene	High Pressure	Raw Materials Preparation		X
		Polymerization Reaction		X
		Material Recovery		X
		Product Finishing		X
		Product Storage		X
Low Density Polyethylene	Low Pressure	Raw Materials Preparation	X	X
High Density Polyethylene	Gas Phase	Polymerization Reaction		X
		Material Recovery		
		Product Finishing	X	
		Product Storage		
High Density Polyethylene	Liquid Phase Slurry	Raw Materials Preparation		X
		Polymerization Reaction		
		Material Recovery	X	
		Product Finishing	X	
		Product Storage		
High Density Polyethylene	Liquid Phase Solution	Raw Materials Preparation	X	X
		Polymerization Reaction		X
		Material Recovery	X	X
		Product Finishing		
		Product Storage		

(2) *Polystyrene.* The applicability date for each polystyrene affected facility is September 30, 1987.

(3) *Poly(ethylene terephthalate).* The applicability date for each poly(ethylene terephthalate) affected facility is September 30, 1987.

(c) Any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after its applicability date as identified under paragraph (b) of this section is subject to the requirements of this subpart, except as provided in paragraphs (d) through (f) of this section.

(d) Any polypropylene or polyethylene affected facility with a September 30, 1987, applicability date that commenced construction, modification, or reconstruction after September 30, 1987, and on or before January 10, 1989, with an uncontrolled emission rate (as defined in footnote a to Table 2) at or below those identified in Table 2 is not subject to the requirements of § 60.562–1 unless and until its uncontrolled emission rate exceeds that rate listed for it in Table 2 or it is modified or reconstructed after January 10, 1989. At such time, such facility becomes subject to § 60.562–1 and the procedures identified in § 60.562–1(a) shall be used to determine the control of emissions from the facility.

TABLE 2.—MAXIMUM UNCONTROLLED THRESHOLD EMISSION RATES[a]

Production process	Process section	Uncontrolled emission rate, kg TOC/Mg product (See associated footnote)
Polypropylene, liquid phase process	Raw Materials Preparation	0.15[b]
	Polymerization Reaction	0.14[b], 0.24[c]
	Material Recovery	0.19[b]
	Product Finishing	1.57[b]
Polypropylene, gas phase process	Polymerization Reaction	0.12[c]
	Material Recovery	0.02[b]
Low Density Polyethylene, low pressure process	Raw Materials Preparation	0.41[d]
	Polymerization Reaction	(e)
	Material Recovery	(e)
	Product Finishing	(e)
	Product Storage	(e)
Low Density Polythylene, low pressure process	Raw Materials Preparation	0.05[f]
	Polymerization Reaction	0.03[g]
	Product Finishing	0.01[b]
High Density Polyethylene, liquid phase slurry process.	Raw Materials Preparation	0.25[c]
	Material Recovery	0.11[b]
	Product Finishing	0.41[b]
High Density Polyethylene, liquid phase solution process.	Raw Materials Preparation	0.24[f]
	Polymerization Reaction	0.16[c]
	Material Recovery	1.68[f]
High Density Polyethylene, gas phase process	Raw Materials Preparation	0.05[f]
	Polymerization Reaction	0.03[g]
	Product Finishing	0.01[b]
Polystyrene, continuous process	Material Recovery	0.05[b, h]
Poly(ethylene terephalate), dimethyl terephthalate process.	Material Recovery	0.12[b h]
	Polymerization Reaction	1.80[h i j,]
Poly(ethlyene terephthalate), terephthalic acid process.	Raw Materials Preparation	(l)
	Polymerization Reaction	1.80[h j m] 3.92[h k m]

[a] "Uncontrolled emission rate" refers to the emission rate of a vent stream that vents directly to the atmosphere and to the emission rate of a vent stream to the atmosphere that would occur in the absence of any add-on control devices but after any material recovery devices that constitute part of the normal material recovery operations in a process line where potential emissions are recovered for recycle or resale.

[b] Emission rate applies to continuous emissions only.

[c] Emission rate applies to intermittent emissions only.

[d] Total emission rate for non-emergency intermittent emissions from raw materials preparation, polymerization reaction, material recovery, product finishing, and product storage process sections.

[e] See footnote d.

[f] Emission rate applies to both continuous and intermittent emissions.

[g] Emission rate applies to non-emergency intermittent emissions only.

[h] Applies to modified or reconstructed affected facilities only.

[i] Includes emissions from the cooling water tower.

[j] Applies to a process line producing low viscosity poly(ethylene terephthlalate).

[k] Applies to a process line producing high viscosity poly(ethylene terephathalate).

[l] See footnote m.

[m] Applies to the sum of emissions to the atmosphere from the polymerization reaction section (including emissions from the cooling tower) and the raw materials preparation section (i.e., the esterifiers).

(e)(1) Modified or reconstructed affected facilities at polystyrene and poly(ethylene terephthalate) plants with uncontrolled emission rates at or below those identified in Table 2 are exempt from the requirements of § 60.562–1 unless and until its uncontrolled emission rate exceeds that rate listed for it in Table 2. This exemption does not apply to new polystyrene or poly(ethylene terephthalate) affected facilities.

(2) Emissions from modified or reconstructed affected facilities that are controlled by an existing control device and that have uncontrolled emission rates greater than the uncontrolled threshold emission rates identified in Table 2 are exempt from the requirements of § 60.562–1 unless and until the existing control device is modified, reconstructed, or replaced.

(f) No process section of an experimental process line is considered an affected facility for continuous or intermittent process emissions.

(g) Individual vent streams that emit continuous emissions with uncontrolled annual emissions of less than 1.6 Mg/yr (1.76 ton/yr) or with a weight percent TOC of less than 0.10 percent from a new, modified, or reconstructed polypropylene or polyethylene affected facility are exempt from the requirements of § 60.562–1(a)(1). If at a later date, an individual stream's uncontrolled annual emissions become 1.6 Mg/yr (1.76 ton/yr) or greater (if the stream was exempted on the basis of the uncontrolled annual emissions exemption) or VOC concentration becomes 0.10 weight percent or higher (if the stream was exempted on the basis of the VOC concentration exemption), then the stream is subject to the requirements of § 60.562–1.

(h) Emergency vent streams, as defined in § 60.561, from a new, modified, or reconstructed polypropylene or polyethylene affected facility are exempt from the requirements of § 60.562–1(a)(2).

(i) An owner or operator of a polypropylene or polyethylene affected facility that commenced construction, modification, or reconstruction after September 30, 1987, and on or before January 10, 1989, and that is in a process line in which more than one type of polyolefin (i.e., polypropylene, low density polyethylene, high density polyethylene, or their copolymers) is produced shall select one of the polymer/production process combinations in Table 1 for purposes of determining applicable affected facilities and uncontrolled threshold emissions rates.

(j) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart G, for continuous process vents that are subject to this subpart, that choose to comply with § 60.562–1(a)(1)(i)(A), (B), or (C) as allowed in § 60.562–1(a)(1) and (b)(1)(iii). The requirements of 40 CFR part 65, subpart G, satisfy the requirements of paragraph (c) of this section and §§ 60.563 through 60.566, except for § 60.565(g)(1). Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart G, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (j)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart G, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart G, must comply with 40 CFR part 65, subpart A.

(3) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart G, at initial startup shall notify the Administrator of the specific provisions of 40 CFR part 65, subpart G, with

which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial startup required by 40 CFR 65.5(b).

(NOTE: The numerical emission limits in these standards are expressed in terms of total organic compounds, measured as total organic compounds less methane and ethane.)

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991, as amended at 65 FR 61765, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.561 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A of part 60, or in subpart VV of part 60, and the following terms shall have the specific meanings given them.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where

(a) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, as reflected by the following equation: $A = Y \times (B \div 100)$;

(b) The percent Y is determined from the following equation: $Y = 1.0 - 0.57 \log X$, where X is 1986 minus the year of construction; and

(c) The applicable basic annual asset guideline repair allowance, B, is equal to 12.5.

Car-sealed means, for purposes of these standards, a seal that is placed on the device used to change the position of a valve (e.g., from opened to closed) such that the position of the valve cannot be changed without breaking the seal and requiring the replacement of the old seal once broken with a new seal.

Closed vent system means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device.

Continuous emissions means any gas stream containing VOC that is generated essentially continuously when the process line or any piece of equipment in the process line is operating.

Continuous process means a polymerization process in which reactants are introduced in a continuous manner and products are removed either continuously or intermittently at regular intervals so that the process can be operated and polymers produced essentially continuously.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Copolymer means a polymer that has two different repeat units in its chain.

Decomposition means, for the purposes of these standards, an event in a polymerization reactor that advances to the point where the polymerization reaction becomes uncontrollable, the polymer begins to break down (decompose), and it becomes necessary to relieve the reactor instantaneously in order to avoid catastrophic equipment damage or serious adverse personnel safety consequences.

Decomposition emissions refers to those emissions released from a polymer production process as the result of a decomposition or during attempts to prevent a decomposition.

Emergency vent stream means, for the purposes of these standards, an intermittent emission that results from a decomposition, attempts to prevent decompositions, power failure, equipment failure, or other unexpected cause that requires immediate venting of gases from process equipment in order to avoid safety hazards or equipment damage. This includes intermittent vents that occur from process equipment where normal operating parameters (e.g., pressure or temperature) are exceeded such that the process equipment can not be returned to normal operating conditions using the design features of the system and venting must occur to avoid equipment failure or adverse safety personnel consequences and to minimize adverse effects of the runaway reaction. This does not include intermittent vents that are designed into the process to maintain normal operating conditions of process vessels including those vents that regulate normal process vessel pressure.

End finisher means a polymerization reaction vessel operated under very low pressures, typically at pressures of 2 mm Hg (1 in. H_2O) or less, in order to produce high viscosity poly(ethylene terephthalate). An end finisher is preceded in a high viscosity poly(ethylene terephthalate) process line by one or more polymerization vessels operated under less severe vacuums, typically between 5 and 10 mm Hg (3 and 5 in. H_2O). A high viscosity poly(ethylene terephthalate) process line may have one or more end finishers.

Existing control device means, for the purposes of these standards, an air pollution control device that has been in operation on or before September 30, 1987, or that has been in operation between September 30, 1987, and January 10, 1989, on those continuous or intermittent emissions from a process section that is marked by an ''—'' in Table 1 of this subpart.

Existing control device is reconstructed means, for the purposes of these standards, the capital expenditure of at least 50 percent of the replacement cost of the existing control device.

Existing control device is replaced means, for the purposes of these standards, the replacement of an existing control device with another control device.

Expandable polystyrene means a polystyrene bead to which a blowing agent has been added using either an in-situ suspension process or a post-impregnation suspension process.

Experimental process line means a polymer or copolymer manufacturing process line with the sole purpose of operating to evaluate polymer manufacturing processes, technologies, or products. An experimental process line does not produce a polymer or resin that is sold or that is used as a raw material for nonexperimental process lines.

Flame zone means that portion of the combustion chamber in a boiler occupied by the flame envelope.

Fugitive emissions equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by subpart VV of this part.

Gas phase process means a polymerization process in which the polymerization reaction is carried out in the gas phase; i.e., the monomer(s) are gases in a fluidized bed of catalyst particles and granular polymer.

High density polyethylene (HDPE) means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight and having a density of greater than 0.940 $gm/cm^3$3 (58.7 lb/ft^3).

High pressure process means the conventional production process for the manufacture of low density polyethylene in which a reaction pressure of about 15,000 psig (103,000 kPa gauge) or greater is used.

High viscosity poly(ethylene terephthalate) means poly(ethylene terephthalate) that has an intrinsic viscosity of 0.9 or higher and is used in such applications as tire cord and seat belts.

Incinerator means an enclosed combustion device that is used for destroying VOC.

In-situ suspension process means a manufacturing process in which styrene, blowing agent, and other raw materials are added together within a reactor for the production of expandable polystyrene.

Intermittent emissions means those gas streams containing VOC that are generated at intervals during process line operation and includes both planned and emergency releases.

Liquid phase process means a polymerization process in which the polymerization reaction is carried out in the liquid phase; i.e., the monomer(s) and any catalyst are dissolved, or suspended in a liquid solvent.

Liquid phase slurry process means a liquid phase polymerization process in which the monomer(s) are in solution (completely dissolved) in a liquid solvent, but the polymer is in the form of solid particles suspended in the liquid reaction mixture during the polymerization reaction; sometimes called a particle form process.

Liquid phase solution process means a liquid phase polymerization process in which both the monomer(s) and polymer are in solution (completely dissolved) in the liquid reaction mixture.

Low density polyethylene (LDPE) means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight and having a density of 0.940 g/cm^3 (58.7 lb/ft^3) or less.

Low pressure process means a production process for the manufacture of low density polyethylene in which a reaction pressure markedly below that used in a high pressure process is used. Reaction pressure of current low pressure processes typically go up to about 300 psig (2,070 kPa gauge).

Low viscosity poly(ethylene terephthalate) means a poly(ethylene terephthalate) that has an intrinsic viscosity of less than 0.75 and is used in such applications as clothing, bottle, and film production.

Material recovery section means the equipment that recovers unreacted or by-product materials from any process section for return to the process line, off-site purification or treatment, or sale. Equipment designed to separate unreacted or by-product material from the polymer product are to be included in this process section, provided at least some of the material is recovered for reuse in the process, off-site purification or treatment, or sale, at the time the process section becomes an affected facility. Otherwise such equipment are to be assigned to one of the other process sections, as appropriate. Equipment that treats recovered materials are to be included in this process section, but equipment that also treats raw materials are not to be included in this process section. The latter equipment are to be included in the raw materials preparation section. If equipment is used to return unreacted or by-product material directly to the same piece of process equipment from which it was emitted, then that equipment is considered part of the process section that contains the process equipment. If equipment is used to recover unreacted or by-product material from a process section and return it to another process section or a different piece of process equipment in the same process section or sends it off-site for purification, treatment, or sale, then such equipment are considered part of a material recovery section. Equipment used for the on-site recovery of ethylene glycol from poly(ethylene terephthalate) plants, however, are not included in the material recovery section, but are covered under the standards applicable to the polymerization reaction section (§ 60.562–1(c)(1)(ii)(A) or (2)(ii)(A)).

Operating day means, for the purposes of these standards, any calendar day during which equipment used in the manufacture of polymer was operating for at least 8 hours or one labor shift, whichever is shorter. Only operating days shall be used in determining compliance with the standards specified in § 60.562–1(c)(1)(ii)(B), (1)(ii)(C), (2)(ii)(B), and (2)(ii)(C). Any calendar day in which equipment is used for less than 8 hours or one labor shift, whichever is less, is not an ‘‘operating day’’ and shall not be used as part of the rolling 14-day period for determining compliance with the standards specified in § 60.562–1(c)(1)(ii)(B), (1)(ii)(C), (2)(ii)(B), and (2)(ii)(C).

Polyethylene means a thermoplastic polymer or copolymer comprised of at least 50 percent ethylene by weight; see low density polyethylene and high density polyethylene.

Poly(ethylene terephthalate) (PET) means a polymer or copolymer comprised of at least 50 percent bis-(2-hydroxyethyl)-terephthalate (BHET) by weight.

Poly(ethylene terephthalate) (PET) manufacture using dimethyl terephthalate means the manufacturing of poly(ethylene terephthalate) based on the esterification of dimethyl terephthalate (DMT) with ethylene glycol to form the intermediate monomer bis-(2-hydroxyethyl)-terephthalate (BHET) that is subsequently polymerized to form PET.

Poly(ethylene terephthalate) (PET) manufacture using terephthalic acid means the manufacturing of poly(ethylene terephthalate) based on the esterification reaction of terephthalic acid (TPA) with ethylene glycol to form the intermediate monomer bis-(2-hydroxyethyl)-terephthalate (BHET) that is subsequently polymerized to form PET.

Polymerization reaction section means the equipment designed to cause monomer(s) to react to form polymers, including equipment designed primarily to cause the formation of short polymer chains (oligomers or low polymers), but not including equipment designed to prepare raw materials for polymerization, e.g., esterification vessels. For the purposes of these standards, the polymerization reaction section begins with the equipment used to transfer the materials from the raw materials preparation section and ends with the last vessel in which polymerization occurs. Equipment used for the on-site recovery of ethylene glycol from poly(ethylene terephthalate) plants, however, are included in this process section, rather than in the material recovery process section.

Polypropylene (PP) means a thermoplastic polymer or copolymer comprised of at least 50 percent propylene by weight.

Polystyrene (PS) means a thermoplastic polymer or copolymer comprised of at least 80 percent styrene or para-methylstyrene by weight.

Post-impregnation suspension process means a manufacturing process in which polystyrene beads are first formed in a suspension process, washed, dried, or otherwise finished and then added with a blowing agent to another reactor in which the beads and blowing agent are reacted to produce expandable polystyrene.

Process heater means a device that transfers heat liberated by burning fuel to fluids contained in tubular coils, including all fluids except water that is heated to produce steam.

Process line means a group of equipment assembled that can operate independently if supplied with sufficient raw materials to produce polypropylene, polyethylene, polystyrene, (general purpose, crystal, or expandable) or poly(ethylene terephthalate) or one of their copolymers. A process line consists of the equipment in the following process sections (to the extent that these process sections are present at a plant): raw materials preparation, polymerization reaction, product finishing, product storage, and material recovery.

Process section means the equipment designed to accomplish a general but well-defined task in polymer production. Process sections include raw materials preparation, polymerization reaction, material recovery, product finishing, and product storage and may be dedicated to a single process line or common to more than one process line.

Process unit means equipment assembled to perform any of the physical and chemical operations in the production of polypropylene, polyethylene, polystyrene, (general purpose, crystal, or expandable), or poly(ethylene terephthalate) or one of their copolymers. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. Examples of process units are raw materials handling and monomer recovery.

Product finishing section means the equipment that treats, shapes, or modifies the polymer or resin to produce the finished end product of the particular facility, including equipment that prepares the product for product finishing. For the purposes of these standards, the product finishing section begins with the equipment used to transfer the polymerized product from the polymerization reaction section and ends with the last piece of equipment that modifies the characteristics of the polymer. Product finishing equipment may accomplish product separation, extruding and pelletizing, cooling and drying, blending, additives introduction, curing, or annealing. Equipment used to separate unreacted or by-product material from the product are to be included in this process section, provided the material separated from the polymer product is not recovered at the time the process section becomes an affected facility. If the material is being recovered, then the separation equipment are to be included in the material recovery section. Product finishing does not include polymerization, the physical mixing of the pellets to obtain a homogenous mixture of the polymer (except as noted below), or the shaping (such as fiber spinning, molding, or fabricating) or modification (such as fiber stretching and crimping) of the finished end product. If physical mixing occurs in equipment located between product finishing equipment (i.e., before all the chemical and physical characteristics have been "set" by virtue of having passed through the last piece of equipment in the product finishing section), then such equipment are to be included in this process section. Equipment used to physically mix the finished product that are located after the last piece of equipment in the product finishing section are part of the product storage section.

Product storage section means the equipment that is designed to store the finished polymer or resin end product of the particular facility. For the purposes of these standards, the product storage section begins with the equipment used to transfer the finished product out of the product finishing section and ends with the containers used to store the final product. Any equipment used after the product finishing section to recover unreacted or by-product material are to be considered part of a material recovery section. Product storage does not include any intentional modification of the characteristics of any polymer or resin product, but does include equipment that provide a uniform mixture of product, provided such equipment are used after the last product finishing piece of equipment. This process section also does not include the shipment of a finished polymer or resin product to another facility for further finishing or fabrication.

Raw materials preparation section means the equipment located at a polymer manufacturing plant designed to prepare raw materials, such as monomers and solvents, for polymerization. For the purposes of these standards, this process section begins with the equipment used to transfer raw materials from storage and recovered material from material recovery process sections, and ends with the last piece of equipment that prepares the material for polymerization. The raw materials preparation section may include equipment that accomplishes purification, drying, or other treatment of raw materials or of raw and recovered materials together, activation of catalysts, and esterification including the formation of some short polymer chains (oligomers), but does not include equipment that is designed primarily to accomplish the formation of oligomers, the treatment of recovered materials alone, or the storage of raw materials.

Recovery system means an individual unit or series of material recovery units, such as absorbers, condensers, and carbon adsorbers, used for recovering volatile organic compounds.

Total organic compounds (TOC) means those compounds measured according to the procedures specified in §60.564.

Vent stream means any gas stream released to the atmosphere directly from an emission source or indirectly either through another piece of process equipment or a material recovery device that constitutes part of the normal recovery operations in a polymer process line where potential emissions are recovered for recycle or resale, and any gas stream directed to an air pollution control device. The emissions released from an air pollution control device are not considered a vent stream unless, as noted above, the control device is part of the normal material recovery operations in a polymer process line where potential emissions are recovered for recycle or resale.

Volatile organic compounds (VOC) means, for the purposes of these standards, any reactive organic compounds as defined in §60.2 Definitions.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991; 56 FR 12299, Mar. 22, 1991; 65 FR 61767, Oct. 17, 2000]

§60.562–1 Standards: Process emissions.

(a) Polypropylene, low density polyethylene, and high density polyethylene. Each owner or operator of a polypropylene, low density polyethylene, or high density polyethylene process line containing a process section subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by §60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup whichever comes first.

(1) *Continuous emissions*. For each vent stream that emits continuous emissions from an affected facility as defined in § 60.560(a)(1), the owner or operator shall use the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section for determining which continuous emissions are to be controlled and which level of control listed in paragraph (a)(1)(i) of this section is to be met. The owner or operator shall use the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section each time a process section is constructed, modified, or reconstructed at the plant site.

(i) *Level of control* Continuous emission streams determined to be subject to control pursuant to the procedures identified in paragraphs (a)(1) (ii) and (iii) of this section, as applicable, shall meet one of the control levels identified in paragraphs (a)(1)(i) (A) through (D) of this section. The procedures in paragraphs (a)(1) (ii) and (iii) of this section identify which level of control may be met. The level of control identified in paragraph (a)(1)(i)(D) of this section is limited to certain continuous emission streams, which are identified through the procedures in paragraphs (a)(1) (ii) and (iii) of this section.

(A) Reduce emissions of total organic compounds (minus methane and ethane) (TOC) by 98 weight percent, or to a concentration of 20 parts per million by volume (ppmv) on a dry basis, whichever is less stringent. The TOC is expressed as the sum of the actual compounds, not carbon equivalents. If an owner or operator elects to comply with the 20 ppmv standard, the concentration shall include a correction to 3 percent oxygen only when supplemental combustion air is used to combust the vent stream.

(B) Combust the emissions in a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater by introducing the vent stream into the flame zone of the boiler or process heater. (Note: A boiler or process heater of lesser design heat capacity may be used, but must demonstrate compliance with paragraph (a)(1)(i)(A) of this section.)

(C) Combust the emissions in a flare that meets the conditions specified in § 60.18. If the flare is used to control both continuous and intermittent emissions, the flare shall meet the conditions specified in § 60.18 at all times (i.e., which controlling continuous emissions alone or when controlling both continuous and intermittent emissions).

(D) Vent the emissions to a control device located on the plant site.

(ii) *Uncontrolled Continuous Emissions*. For each vent stream that emits continuous emissions from an affected facility as defined in § 60.560(a)(1) and that is not controlled in an existing control device, the owner or operator shall use the procedures identified in Table 3 to identify those continuous emissions from each constructed, modified, or reconstructed affected facility that are to be controlled. The owner shall include in the procedure all uncontrolled continuous vent streams from previously constructed, modified, or reconstructed affected facilities at the plant site each time a process section is constructed, modified, or reconstructed at the plant site. In applying the procedures shown in Table 3, the stream characteristics may be either measured or calculated as specified in § 60.564(d). For modified or reconstructed affected facilities, these stream characteristics are to be determined after a modification or reconstruction determination has been made by the Administrator, but before any actual changes have been undertaken, and then again after the actual changes have been made. Figure 1 provides a summary overview of the control determination procedure described in Table 3.

TABLE 3—PROCEDURE FOR DETERMINING CONTROL AND APPLICABLE STANDARD FOR CONTINUOUS EMISSION STREAMS FROM NEW, MODIFIED, OR RECONSTRUCTED POLYPROPYLENE AND POLYETHYLENE AFFECTED FACILITIES

Procedure /a/	Applicable TOC weight percent range	Control/no control criteria	Applicable standard
1. Sum all uncontrolled streams with TOC weight percent within the applicable weight percent range from all affected facilities at a plant site.	0.10 < 5.5	1. If total combined uncontrolled emissions are equal to or greater than the calculated threshold emissions (CTE) /b/, control.	1. § 60.562–1(a)(1)(i) (A), (B), or (C).
2. Calculate total uncontrolled annual emissions for each weight percent range. For modified or affected facilities, use the total uncontrolled emissions after modification or reconstruction.		2. If total combined uncontrolled emission are less than the CTE /b/, control only individual streams with volume flow rates of 8 scfm or less.	2. § 60.562–1(a)(1)(i) (A) through (D).
3. Calculate composite TOC concentration (weight percent) for streams in the 0.10 to less than 5.5 weight percent range and for streams in the 5.5 to less than 20 weight percent range. For modified or reconstructed affected facilities, calculate the composite VOC concentration before and after modification and reconstruction.	5.5 < 20	1. If total combined uncontrolled emissions are equal to or greater than CTE /b/, control.	1. § 60.562–1(a)(1)(i) (A), (B), or (C) 2. If total combined uncontrolled emissions are less than the CTE / b/, control only individual streams with volume flow rates of 8 scfm or less.
4. Select the higher of the two TOC concentrations for each weight percent range for vent streams from a modified or reconstructed affected facility.	20 to 100	1. If total combined uncontrolled emissions are equal to or greater than 18.2 Mg/yr, control.	1. § 60.562–1(a)(1)(i) (A), (B), or (C).
5. Calculate the threshold emissions for the 0.10 to less than 5.5 weight percent range and for the 5.5 to less than 20 weight percent range using the respective composite TOC concentration selected above.		2. If total combined uncontrolled emissions are less than 18.2 Mg/yr, control.	2. § 60.562–1(a)(1)(i) (A) through (D).

[a] Individual streams excluded under § 60.560(g) from the requirements of § 60.562–1 are to be excluded from all calculations in this table. This paragraph exempts all individual emission streams with individual uncontrolled annual emission rates of less than 1.6 Mg/yr and all individual emission streams with individual TOC concentrations of less than 0.10 percent TOC by weight.

[b] For the 0.10 to less than 5.5 weight percent range, the following equations are used:

If the percent composite TOC concentration is	Use this equation to calculate threshold emissions
0.10<0.12	$(a \times 7.5 \times 10^6)+226$
0.12<0.2	$(b \times 58.3)+116.8$
0.2<0.3	$(c \times 3020)+71.8$
0.3<0.4	$(d \times 547)+54.5$
0.4<0.6	$48.3+31\ (0.6-\text{weight percent TOC})$
0.6<5.5	48.3

where: $a=(0.12-\text{weight percent TOC})^{2,5}$

$$b=\frac{\left\{\frac{0.18}{\text{weight percent TOC}}\right\}^{0.5}-1}{\text{weight percent TOC}}$$

$c=(0.3-\text{weight percent TOC})^{2}$

$d=(0.4-\text{weight percent TOC})^{1,5}$

For the 5.5 to less than 20 weight percent range, the following equations are used.

If the percent composite TOC concentration is	Use this equation to calculate threshold emissions
5.5<7.0	$(e \times 740)+31$
7.0<9.0	$(f \times 324)+25.0$
9.0<20	$(g \times 125)+18.2$

where

$$e = \frac{\left\{\frac{7.0}{\text{weight percent TOC}}\right\}^{0.5} - 1}{\text{weight percent TOC}}$$

$$f = \frac{\left\{\frac{9.0}{\text{weight percent TOC}}\right\}^{0.5} - 1}{\text{weight percent TOC}}$$

$$g = \frac{\left\{\frac{20.0}{\text{weight percent TOC}}\right\}^{0.5} - 1}{\text{weight percent TOC}}$$

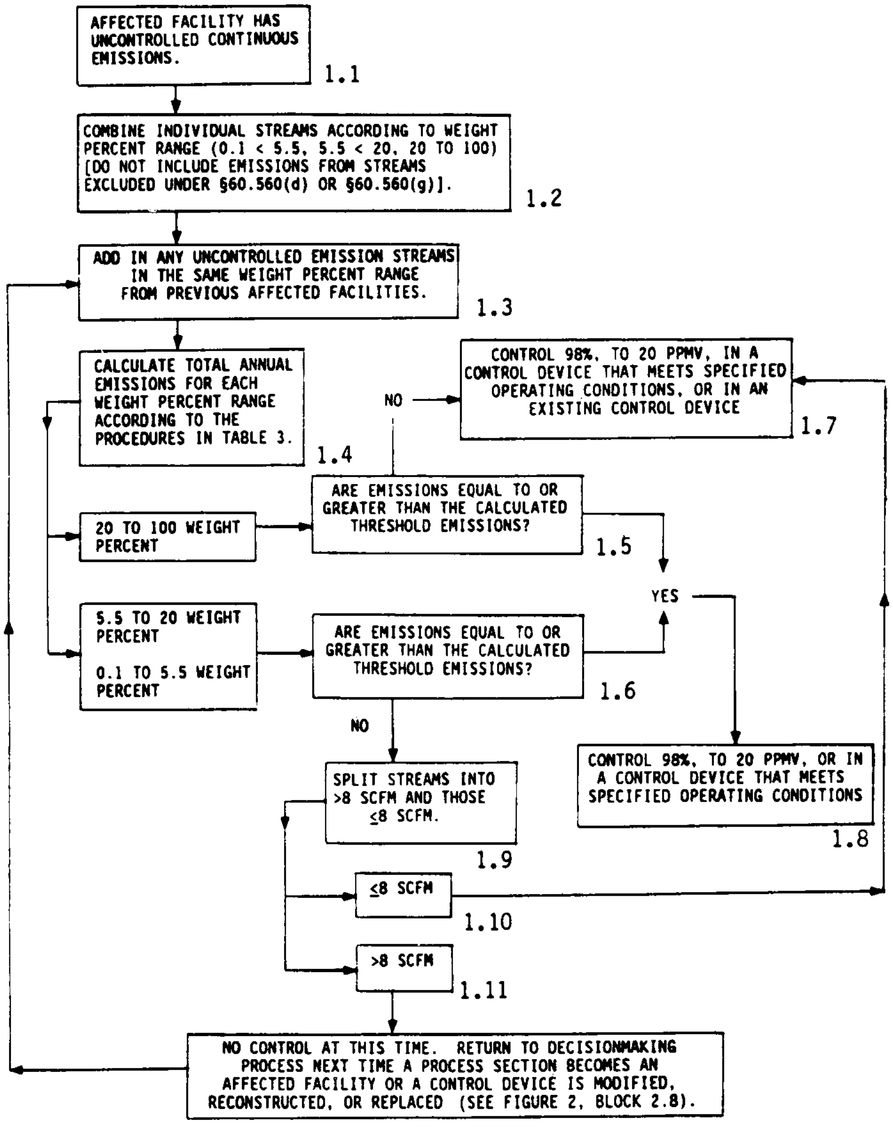
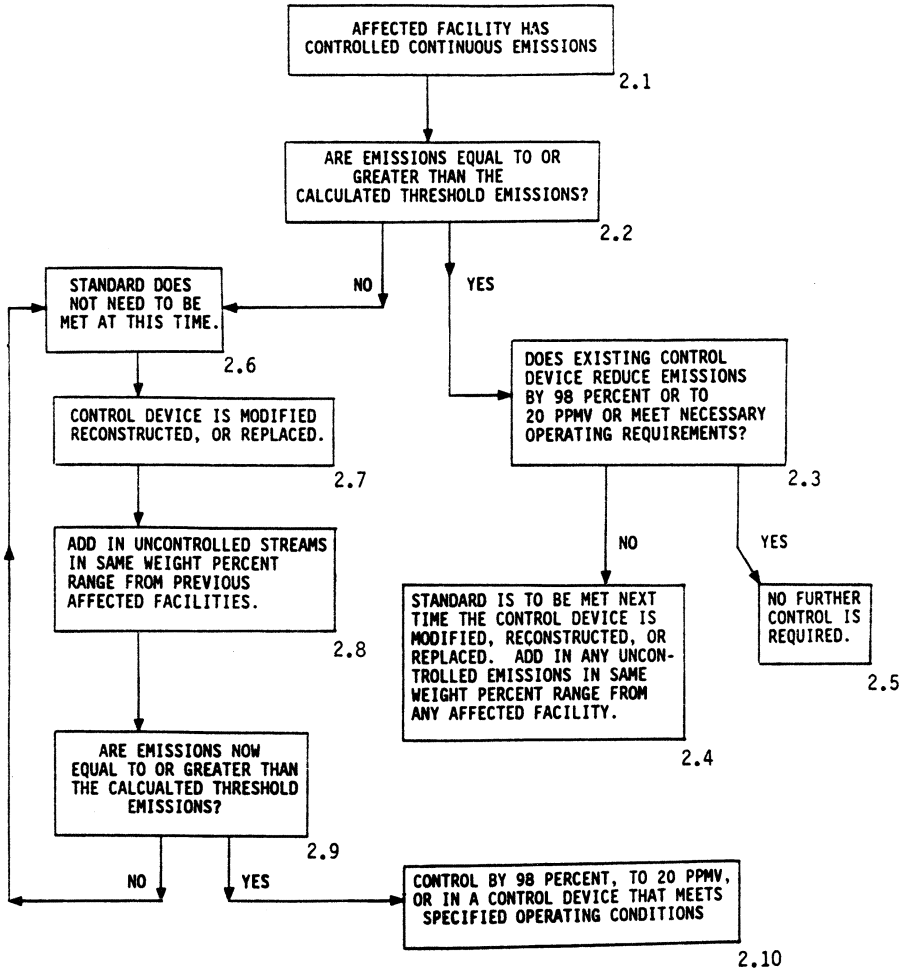


Figure 1. Decisionmaking Process for Uncontrolled Continuous Emissions from Polypropylene and Polyethylene Affected Facilities

(iii) Controlled Continuous Emissions. For each vent stream that emits continuous emissions from an affected facility as defined in §60.560(a)(1) and that is controlled in an existing control device, each owner or operator shall determine whether the emissions entering the control device are greater than or equal to the calculated threshold emissions (CTE) level, which is to be calculated using the TOC concentration of the inlet vent stream and the equations in footnote b of Table 3. If the inlet stream's TOC concentration is equal to or greater than 20 weight percent, the calculated threshold emissions level is 18.2 Mg/yr (20.1 ton/yr). If multiple emission streams are vented to the control device, the individual streams are not to be separated into individual weight percent ranges for calculation purposes as would be done for uncontrolled emission streams. Emissions vented to an existing control device are required to be controlled as described in paragraphs (a)(1)(iii) (A) and (B) of this section. Figure 2 illustrates the control determination procedure for controlled continuous emissions.



NOTE: There are no individual stream exemptions for emissions already controlled by existing control devices.

Figure 2. Decisionmaking Process for Continuous Emissions Already Controlled at Polypropylene and Polyethylene Affected Facilities

(A) If the annual emissions of the stream entering the control device are equal to or greater than the CTE levels, then compliance with one of the requirements identified in §60.562–1(a)(1)(i) (A), (B), or (C) is required at such time the control device is reconstructed or replaced or has its operating conditions modified as a result of State or local regulations (including changes in the operating permit) including those instances where the control device is reconstructed, replaced, or modified in its operation at the same time the existing process section is modified or reconstructed and becomes an affected facility. If the existing control device already complies with one of the requirements identified in § 60.562–1(a)(1)(i) (A), (B), or (C), no further control is required.

(B) If the annual emissions of the stream entering the control device are less than the CTE level, then the requirements of § 60.562–1(a)(1)(i) (A), (B), or (C) are not applicable at that time. However, if the control device is replaced, reconstructed, or modified at a later date, each owner or operator shall reevaluate the applicability of these standards. This is done by combining with the vent stream entering the control device any uncontrolled vent streams in the same weight percent range as the controlled vent stream and determining whether the annual emissions of the stream entering the control device plus the applicable uncontrolled vent streams are greater than or equal to the CTE level, which is based on the weighted TOC concentration of the controlled vent stream and the uncontrolled vent streams. If the annual emissions entering the control device (including the applicable uncontrolled vent streams) are greater than or equal to the CTE level, then compliance with one of the requirements identified in § 60.562–1(a)(1)(i) (A), (B), or (C) is required at that time for both the controlled and uncontrolled vent streams. If the annual emissions are less than the CTE level, compliance with these standards is again not required at such time. However, if the control device is again replaced, reconstructed, or modified, each owner or operator shall repeat this determination procedure.

(2) *Intermittent emissions.* The owner or operator shall control each vent stream that emits intermittent emissions from an affected facility as defined in § 60.560–1(a)(1) by meeting one of the control requirements specified in paragraphs (a)(2) (i) and (ii) of this section. If a vent stream that emits intermittent emissions is controlled in an existing flare, incinerator, boiler, or process heater, the requirements of this paragraph are waived until such time the control device is reconstructed or replaced or is modified in its operating conditions as a result of State or local regulation, including changes in the operating permit. This paragraph does not apply to emergency vent streams exempted by § 60.560(h) and as defined in § 60.561.

(i) Combust the emissions in a flare that is:

(A) Designed for and operated with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours,

(B) Operated with a flame present at all times, and

(C) Designed to maintain a stable flame.

(ii) Combust the emissions in an incinerator, boiler, or process heater. Such emissions shall be introduced into the flame zone of a boiler or process heater.

(b) *Polystyrene.* Each owner or operator of a polystyrene process line containing process sections subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first. Each owner or operator of a polystyrene process line using a continuous process shall:

(1) Limit the continuous TOC emissions from the material recovery section by complying with one of the following:

(i) Not allow continuous TOC emissions to be greater than 0.0036 kg TOC/Mg (0.0072 lb TOC/ton) product; or

(ii) Not allow the outlet gas stream temperature from each final condenser in the material recovery section to exceed −25 °C (−13 °F). For purposes of this standard, temperature excursions above this limit shall not be considered a violation when such excursions occur during periods of startup, shutdown, or malfunction; or

(iii) Comply with § 60.562–1(a)(1)(i) (A), (B), or (C).

(2) If continuous TOC emissions from the material recovery section are routed through an existing emergency vapor recovery system, then compliance with these standards is required when the emergency vapor recovery

system undergoes modification, reconstruction, or replacement. In such instances, compliance with these standards shall be achieved no later than 180 days after completion of the modification, reconstruction, or replacement.

(c) *Poly(ethylene terephthalate).* Each owner or operator of a poly(ethylene terephthalate) process line containing process sections subject to the provisions of this subpart shall comply with the provisions in this section on and after the date on which the initial performance test required by § 60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after initial startup, whichever comes first.

(1) Each owner or operator of a PET process line using a dimethyl terephthalate process shall:

(i) Limit the continuous TOC emissions from the material recovery section (i.e., methanol recovery) by complying with one of the following:

(A) Not allow the continuous TOC emissions to be greater than 0.018 kg TOC/Mg (0.036 lb TOC/ton) product; or

(B) Not allow the outlet gas stream temperature from each final condenser in the material recovery section (i.e., methanol recovery) to exceed +3 °C (+37 °F). For purposes of this standard, temperature excursions above this limit shall not be considered a violation when such excursions occur during periods of startup, shutdown, or malfunction.

(ii) Limit the continuous TOC emissions and, if steam-jet ejectors are used to provide vacuum to the polymerization reactors, the ethylene glycol concentration from the polymerization reaction section by complying with the appropriate standard set forth below. The ethylene glycol concentration limits specified in paragraphs (c)(1)(ii) (B) and (C) of this section shall be determined by the procedures specified in § 60.564(j).

(A) Not allow continuous TOC emissions from the polymerization reaction section (including emissions from any equipment used to further recover the ethylene glycol, but excluding those emissions from the cooling tower) to be greater than 0.02 kg TOC/Mg (0.04 lb TOC/ton) product; and

(B) If steam-jet ejectors are used as vacuum producers and a low viscosity product is being produced using single or multiple end finishers or a high viscosity product is being produced using a single end finisher, maintain the concentration of ethylene glycol in the liquid effluent exiting the vacuum system servicing the polymerization reaction section at or below 0.35 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days; or

(C) If steam-jet ejectors are used as vacuum producers and a high viscosity product is being produced using multiple end finishers, maintain an ethylene glycol concentration in the cooling tower at or below 6.0 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days.

(2) Each owner or operator of a PET process line using a terephthalic acid process shall:

(i) Not allow the continuous TOC emissions from the esterification vessels in the raw materials preparation section to be greater than 0.04 kg TOC/Mg (0.08 lb TOC/ton) product.

(ii) Limit the continuous TOC emissions and, if steam-jet ejectors are used to provide vaccum to the polymerization reactors, the ethylene glycol concentration from the polymerization reaction section by complying with the appropriate standard set forth below. The ethylene glycol concentration limits specified in paragraphs (c)(2)(ii) (B) and (C) of this section shall be determined by the procedures specified in § 60.564(j).

(A) Not allow continuous TOC emissions from the polymerization reaction section (including emissions from any equipment used to further recover the ethylene glycol, but excluding those emissions from the cooling tower) to be greater than 0.02 kg TOC/Mg (0.04 lb TOC/ton) product; and

(B) If steam-jet ejectors are used as vacuum producers and a low viscosity product is being produced using single or multiple end finishers or a high viscosity product is being produced using a single end finisher, maintain the concentration of ethylene glycol in the liquid effluent exiting the vacuum system servicing the polymerization reaction section at or below 0.35 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days; or

(C) If steam-jet ejectors are used as vacuum producers and a high viscosity product is being produced using multiple end finishers, maintain an ethylene glycol concentration in the cooling tower at or below 6.0 percent by weight, averaged on a daily basis over a rolling 14-day period of operating days.

(d) Closed vent systems and control devices used to comply with this subpart shall be operated at all times when emissions may be vented to them.

(e) Vent systems that contain valves that could divert a vent stream from a control device shall have car-sealed opened all valves in the vent system from the emission source to the control device and car-sealed closed all valves in vent system that would lead the vent stream to the atmosphere, either directly or indirectly, bypassing the control device.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991; 65 FR 61767, Oct. 17, 2000]

§ 60.562–2 Standards: Equipment leaks of VOC.

(a) Each owner or operator of an affected facility subject to the provisions of this subpart shall comply with the requirements specified in § 60.482–1 through § 60.482–10 as soon as practicable, but no later than 180 days after initial startup, except that indications of liquids dripping from bleed ports in existing pumps in light liquid service are not considered to be a leak as defined in § 60.482–2(b)(2). For purposes of this standard, a ‘‘bleed port’’ is a technologically-required feature of the pump whereby polymer fluid used to provide lubrication and/or cooling of the pump shaft exits the pump, thereby resulting in a visible leak of fluid. This exemption expires when the existing pump is replaced or reconstructed.

(b) An owner or operator may elect to comply with the requirements specified in § 60.483–1 and § 60.483–2.

(c) An owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements specified in § 60.484.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions specified in § 60.485 except an owner or operator may use the following provision in addition to § 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150 °C (302 °F) as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.17).

(e) Each owner or operator subject to the provisions of this subpart shall comply with § 60.486 and § 60.487.

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991, as amended at 65 FR 61767, Oct. 17, 2000]

§ 60.563 Monitoring requirements.

(a) Whenever a particular item of monitoring equipment is specified in this section to be installed, the owner or operator shall install, calibrate, maintain, and operate according to manufacturer's specifications that item as follows:

(1) A temperature monitoring device to measure and record continuously the operating temperature to within 1 percent (relative to degrees Celsius) or ± 0.5 °C (± 0.9 °F), whichever is greater.

(2) A flame monitoring device, such as a thermocouple, an ultraviolet sensor, an infrared beam sensor, or similar device to indicate and record continuously whether a flare or pilot light flame is present, as specified.

(3) A flow monitoring indicator to indicate and record whether or not flow exists at least once every fifteen minutes.

(4) An organic monitoring device (based on a detection principle such as infrared, photoionization, or thermal conductivity) to indicate and record continuously the concentration level of organic compounds.

(5) A specific gravity monitoring device to measure and record continuously to within 0.02 specific gravity unit.

(b) The owner or operator shall install, as applicable, the monitoring equipment for the control means used to comply with § 60.562–1, except § 60.562–1(a)(1)(i)(D), as follows:

(1) If the control equipment is an incinerator:

(i) For a noncatalytic incinerator, a temperature monitoring device shall be installed in the firebox.

(ii) For a catalytic incinerator, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalytic bed.

(2) If a flare is used:

(i) A flame monitoring device shall be installed to indicate the presence of a flare flame or a flame for each pilot light, if the flare is used to comply with § 60.562–1(a)(1), including those flares controlling both continuous and intermittent emissions.

(ii) A thermocouple or equivalent monitoring device to indicate the presence of a flame at each pilot light, if used to comply with § 60.562–1(a)(2).

(3) If a boiler or process heater is used:

(i) If the boiler or process heater has a heat input design capacity of less than 150 million Btu/hr, a temperature monitoring device shall be installed between the radiant section and the convection zone for watertube boilers and between the furnace (combustion zone) and the firetubes for firetube boilers.

(ii) If the boiler or process heater has a heat input design capacity of 150 million Btu/hr or greater, such records to indicate the periods of operation of the boiler or process heater shall be maintained. The records must be readily available for inspection.

(4) If an absorber is the final unit in a system:

(i) A temperature monitoring device and a specific gravity monitoring device for the scrubber liquid shall be installed, or

(ii) An organic monitoring device shall be installed at the outlet of the absorber.

(5) If a condenser is the final unit in a system:

(i) A temperature monitoring device shall be installed at the condenser exit (product side), or

(ii) An organic monitoring device shall be installed at the outlet of the condenser.

(6) If a carbon adsorber is the final unit in a system, an organic monitoring device shall be installed at the outlet of the carbon bed.

(c) Owners or operators of control devices used to comply with the provisions of this subpart, except § 60.562–1(a)(1)(i)(D), shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(d) Owners or operators using a vent system that contains valves that could divert a vent stream from a control device used to comply with the provisions of this subpart shall do one or a combination of the following:

(1) Install a flow indicator immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere. The flow indicator shall be capable of recording flow at least once every fifteen minutes.

(2) Monitor the valves once a month, checking the position of the valves and the condition of the car seal, and identify all times when the car seals have been broken and the valve position has been changed (i.e., from opened to closed for valves in the vent piping to the control device and from closed to open for valves that allow the stream to be vented directly or indirectly to the atmosphere).

(e) An owner or operator complying with the standards specified under § 60.562–1, except § 60.562–1(a)(1)(i)(D), with control devices other than an incinerator, boiler, process heater, flare, absorber, condenser, or carbon adsorber or by any other means shall provide to the Administrator information describing the operation of the control device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[55 FR 51035, Dec. 11, 1990; 56 FR 12299, Mar. 22, 1991]

§ 60.564 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures specified in this section, except as provided under § 60.8(b). Owners or operators complying with § 60.562–1(a)(1)(i)(D) need not perform a performance test on the control device, provided the control device is not used to comply with any other requirement of § 60.562–1(a).

(1) Whenever changes are made in production capacity, feedstock type or catalyst type, or whenever there is replacement, removal, or addition of a control device, each owner or operator shall conduct a performance test according to the procedures in this section as appropriate, in order to determine compliance with § 60.562–1.

(2) Where a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater is used, the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in § 114 of the Act.

(3) The owner or operator shall determine the average organic concentration for each performance test run using the equipment described in § 60.563(a)(4). The average organic concentration shall be determined from measurements taken at least every 15 minutes during each performance test run. The average of the three runs shall be the base value for the monitoring program.

(4) When an absorber is the final unit in the system, the owner or operator shall determine the average specific gravity for each performance test run using specific gravity monitoring equipment described in § 60.563(a)(5). An average specific gravity shall be determined from measurements taken at least every 15 minutes during each performance test run. The average of the three runs shall be the base value for the monitoring program.

(5) When a condenser is the final unit in the system, the owner or operator shall determine the average outlet temperature for each performance test run using the temperature monitoring equipment described in § 60.563(a)(1). An average temperature shall be determined from measurements taken at least every 15 minutes during each performance test run while the vent stream is normally routed and constituted. The average of the three runs shall be the base value for the monitoring program.

(b) The owner or operator shall determine compliance with the emission concentration standard in § 60.562–1 (a)(1)(i)(A) or (b)(1)(iii) if applicable [if not, see paragraph (c) of this section] as follows:

(1) The TOC concentration is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC} = Concentration of TOC (minus methane and ethane), dry basis, ppmv.

C_j = the concentration of sample component j, ppm.

n = Number of components in the sample.

(i) Method 18 shall be used to determine the concentration of each individual organic component (C_j) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site at the outlet of the control device. Method 4 shall be used to determine the moisture content, if necessary.

(ii) The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15 minute intervals.

(2) If supplemental combustion air is used, the TOC concentration shall be corrected to 3 percent oxygen and shall be computed using the following equation:

$$C_{CORR} = C_{MEAS} \times \left(\frac{17.9}{20.9 - \%O_{2d}} \right)$$

where:

C_{CORR} = Concentration of TOC corrected to 3 percent oxygen, dry basis, ppm by volume.

C_{MEAS} = Concentration of TOC (minus methane and ethane), dry basis, ppm by volume, as calculated in paragraph (b)(1) of this section.

$\%O_{2d}$ = Concentration of O_2, dry basis, percent by volume.

The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration ($\%O_{2d}$). The sampling site shall be the same as that of the TOC sample and the samples shall be taken during the same time that the TOC samples are taken.

(c) If paragraph (b) of this section is not applicable, then the owner or operator shall determine compliance with the percent emission reduction standard in § 60.562–1 (a)(1)(i)(A) or (b)(1)(iii) as follows:

(1) The emission reduction of TOC (minus methane and ethane) shall be determined using the following equation:

$$P = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

where:

P = Percent emission reduction, by weight.

E_{inlet} = Mass rate of TOC entering the control device, kg TOC/hr (lb TOC/hr).

E_{outlet} = Mass rate of TOC, discharged to the atmosphere, kg TOC/hr (lb TOC/hr).

(2) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_1 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_1 \left(\sum_{j=1}^{n} C_{oj} M_{oj} \right) Q_o$$

where:

C_{ij},C_{oj} = Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppmv.

M_{ij},M_{oj} = Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device respectively, g/g-mole (lb/lb-mole).

Q_i,Q_o = Flow rate of the gas stream at the inlet and outlet of the control device, respectively, dscm/hr (dscf/hr).

$K_1 = 4.157 \times 10^{-8}$ [(kg)/g-mole)]/[(g)(ppm)(dscm)] {5.711×10^{-15} [(lb)/(lb-mole)]/(lb)(ppm)(dscf)]}

(i) Method 18 shall be used to determine the concentration of each individual organic component (C_{ij}, C_{oj}) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the inlet and outlet sampling sites. The inlet site shall be before the inlet of the control device and after all product recovery units.

(ii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the volumetric flow rates (Q_i, Q_o). If necessary, Method 4 shall be used to determine the moisture content. Both determinations shall be compatible with the Method 18 determinations.

(iii) Inlet and outlet samples shall be taken simultaneously. The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15 minute intervals.

(d) An owner or operator shall determine compliance with the individual stream exemptions in § 60.560(g) and the procedures specified in Table 3 for compliance with § 60.562–1(a)(1) as identified in paragraphs (d)(1) and (2) of this section. An owner or operator using the procedures specified in § 60.562–1(a)(1) for determining which continuous process emissions are to be controlled may use calculations demonstrated to be sufficiently accurate as to preclude the necessity of actual testing for purposes of calculating the uncontrolled annual emissions and weight percent of TOC. Owners or operators seeking to exempt streams under § 60.560(g) must use the appropriate test procedures specified in this section.

(1) The uncontrolled annual emissions of the individual vent stream shall be determined using the following equation:

$$E_{unc} = K_2 \left(\sum_{j=1}^{n} C_j M_j \right) Q \times 8{,}600$$

Where:

E_{unc} = uncontrolled annual emissions, Mg/yr (ton/yr)

C_j = concentration of sample component j of the gas stream, dry basis, ppmv

M_j = molecular weight of sample component j of the gas stream, g/g-mole (lb/lb-mole)
Q = flow rate of the gas stream, dscm/hr (dscf/hr)
K_2 = 4.157×10^{-11} [(Mg)(g-mole)]/[(g)(ppm)(dscm)] (metric units)
= 1.298×10^{-12} [(ton)(lb-mole)]/[(lb)(ppm)(dscf)] (English units)
8,600 = operating hours per year

(i) Method 18 shall be used to determine the concentration of each individual organic component (C_j) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site. If the gas stream is controlled in an existing control device, the sampling site shall be before the inlet of the control device and after all product recovery units.

(ii) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the volumetric flow rate (Q). If necessary, Method 4 shall be used to determine the moisture content. Both determinations shall be compatible with the Method 18 determinations.

(iii) The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15 minute intervals.

(2) The weight percent VOC of the uncontrolled individual vent stream shall be determined using the following equation:

$$\text{weight \% TOC} = \frac{\sum_{j=1}^{n} C_j M_j}{MW_{gas} \times 10^6} \times 100$$

where:

C_j=concentration of sample TOC component ‘‘j’’ of the gas stream, dry basis, ppmv.
M_j=Molecular weight of sample TOC component ‘‘j’’ of the gas stream, g/g-mole (lb/lb-mole).
MW_{gas}=Average molecular weight of the entire gas stream, g/g-mole (lb/lb-mole).

(i) Method 18 shall be used to determine the concentration of each individual organic component (C_j) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site. If the gas stream is controlled in an existing control device, the sampling site shall be before the inlet of the control device and after all product recovery units. If necessary, Method 4 shall be used to determine the moisture content. This determination shall be compatible with the Method 18 determinations.

(ii) The average molecular weight of the gas stream shall be determined using methods approved by the Administrator. If the carrier component of the gas stream is nitrogen, then an average molecular weight of 28 g/g-mole (lb/lb-mole) may be used in lieu of testing. If the carrier component of the gas stream is air, then an average molecular weight of 29 g/g-mole (lb/lb-mole) may be used in lieu of testing.

(iii) The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15 minute intervals.

(e) The owner or operator shall determine compliance of flares with the visible emission and flare provisions in § 60.562–1 as follows:

(1) Method 22 shall be used to determine visible emissions. The observation period for each run shall be 2 hours.

(2) The monitoring device of § 60.563(b)(2) shall be used to determine whether a flame is present.

(f) The owner or operator shall determine compliance with the net heating value provisions in § 60.18 as referenced by § 60.562–1(a)(1)(i)(C). The net heating value of the process vent stream being combusted in a flare shall be computed as follows:

$$H_T = K_3 \left(\sum_{j=1}^{n} C_j J_j \right)$$

Where:

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F).
K_3 = 1.74×10^{-7} (1/ppm)(g-mole/scm)(MJ/kcal) (metric units), where standard temperature for (g-mole/scm) is 20 °C.
= 4.67×10^{-6} (1/ppm)(lb-mole/scf)(Btu/kcal) (English units) where standard temperature for (lb/mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm.

H_j = Net heat of combustion of compound j, kcal/(g-mole) (kcal/(lb-mole)), based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg).

(1) Method 18 shall be used to determine the concentration of each individual organic component (C_j) in the gas stream. Method 1 or 1A, as appropriate, shall be used to determine the sampling site to the inlet of the flare. Using this same sample, ASTM D1946–77 or 90 (Reapproved 1994) (incorporated by reference—see § 60.17) shall be used to determine the hydrogen and carbon monoxide content.

(2) The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at 15 minute intervals.

(3) Published or calculated values shall be used for the net heats of combustion of the sample components. If values are not published or cannot be calculated, ASTM D2382–76 or 88 or D4809–95 (incorporated by reference—see § 60.17) may be used to determine the net heat of combustion of component ''j.''

(g) The owner or operator shall determine compliance with the exit velocity provisions in § 60.18 as referenced by § 60.562–1(a)(1)(i)(C) as follows:

(1) If applicable, the net heating value (H_T) of the process vent shall be determined according to the procedures in paragraph (f) of this section to determine the applicable velocity requirements.

(2) If applicable, the maximum permitted velocity (V_{max}) for steam-assisted and nonassisted flares shall be computed using the following equation:

$$\mathrm{Log}_{10}\left(V_{max}\right) = \left(H_T + K_4\right)/K_5$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec)

K_4 = 28.8 (metric units), 1212 (English units)

K_5 = 31.7 (metric units), 850.8 (English units)

H_T = The net heating value as determined in paragraph (f) of this section, MJ/scm (Btu/scf).

(3) The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation:

$$V_{max} = K_6 + K_7 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec).

K_6 = 8.706 m/sec (metric units)
= 28.56 ft/sec (English units)

K_7 = 0.7084 [(m/sec)/MJ/scm)] (metric units)
= 0.00245 [(ft/sec)/Btu/scf)] (English units)

H_T = The net heating value as determined in paragraph (f) of this section, MJ/scm (Btu/scf).

(4) The actual exit velocity of a flare shall be determined by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Method 2, 2A, 2C, or 2D as appropriate, by the unobstructed (free) cross sectional area of the flare tip.

(h) The owner or operator shall determine compliance with the mass emission per mass product standards in §§ 60.560(d) and (e) and in §§ 60.562–1(b)(1)(i), (c)(1)(i)(A), (c)(1)(ii)(A), (c)(2)(i), and (c)(2)(ii)(A).

(1) The emission rate of TOC shall be computed using the following equation:

$$ER_{TOC} = K_5 \frac{E_{TOC}}{P_p}$$

Where:

ER_{TOC} = Emission rate of total organic compounds (minus methane and ethane), kg TOC/Mg (lb TOC/ton) product

E_{TOC} = Emission rate of total organic compounds (minus methane and ethane) in the sample, kg/hr (lb/hr)

P_p = The rate of polymer production, kg/hr (lb/hr)

K_5 = 1,000 kg/Mg (metric units)
= 2,000 lb/ton (English units)

(2) The mass rate of TOC, E_{TOC}, shall be determined according to the procedures, as appropriate, in paragraph (c)(2) of this section. The sampling site for determining compliance with §§ 60.560 (d) and (e) shall be before any add-on control devices and after all product recovery devices. Otherwise, the sampling site shall be at the outlet of the control device.

(3) The rate of polymer production, P_p, shall be determined by dividing the weight of polymer pulled (in kg (lb)) from the process line during the performance test by the number of hours taken to perform the performance test. The weight of polymer pulled shall be determined by direct measurement or,

subject to prior approval by the Administrator, computed from materials balance by good engineering practice.

(i) The owner or operator shall determine continuous compliance with the temperature requirements in §§ 60.562–1(b)(1)(ii) and 60.562–1(c)(1)(i)(B) by using the temperature monitoring equipment described in § 60.563(a)(1). An average temperature shall be determined from measurements taken at least every 15 minutes every three hours while the vent stream is normally routed and constituted. Each three-hour period constitutes a performance test.

(j) For purposes of determining compliance with § 60.562–1(c) (1)(ii)(B), (1)(ii)(C), (2)(ii)(B), or (2)(ii)(C), the ethylene glycol concentration in either the cooling tower or the liquid effluent from steam-jet ejectors used to produce a vacuum in the polymerization reactors, whichever is applicable, shall be determined:

(1) Using procedures that conform to the methods described in ASTM D2908–74 or 91, ''Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography'' (incorporated by reference—see § 60.17), except as provided in paragraph (j)(2) of this section:

(i) At least one sample per operating day shall be collected using the grab sampling procedures of ASTM D3370–76 or 96a, ''Standard Practices for Sampling Water'' (incorporated by reference—see § 60.17). An average ethylene glycol concentration by weight shall be calculated on a daily basis over a rolling 14-day period of operating days, except as provided in paragraphs (j)(1) (ii) and (iii) of this section. Each daily average ethylene glycol concentration so calculated constitutes a performance test. Exceedance of the standard during the reduced testing program specified in paragraphs (j)(1) (ii) and (iii) of this section is a violation of these standards.

(ii) For those determining compliance with § 60.562–1(c) (1)(ii)(B) or (2)(ii)(B), the owner or operator may elect to reduce the sampling program to any 14 consecutive day period once every two calendar months, if at least seventeen consecutive 14-day rolling average concentrations immediately preceding the reduced sampling program are each less than 0.10 weight percent ethylene glycol. If the average concentration obtained over the 14 day sampling during the reduced testing period exceeds the upper 95 percent confidence interval calculated from the most recent test results in which no one 14-day average exceeded 0.10 weight percent ethylene glycol, then the owner or operator shall reinstitute a daily sampling program. A reduced sampling program can be reinstituted if the requirements specified in this paragraph are met.

(iii) For those determining compliance with § 60.562–1(c)(1)(ii)(C) or (c)(2)(ii)(C), the owner or operator may elect to reduce the sampling program to any 14 consecutive day period once every two calendar months, if at least seventeen consecutive 14-day rolling average concentrations immediately preceding the reduced sampling program are each less than 1.8 weight percent ethylene glycol. If the average concentration obtained over the 14 day sampling during the reduced test period exceeds the upper 95 percent confidence interval calculated from the most recent test results in which no one 14-day average exceeded 1.8 weight percent ethylene glycol, then the owner or operator shall reinstitute a daily sampling program. A reduced program can be reinstituted if the requirements specified in this paragraph are met.

(iv) The upper 95 percent confidence interval shall be calculated using the equation:

$$CI_{95} = \frac{\sum_{i=1}^{n} X_i}{n} + 2\sqrt{\frac{n\sum_{i=1}^{n} X_i^2 - \left(\sum_{i=1}^{n} X_i\right)^2}{n(n-1)}}$$

Where:

X_i = daily ethylene glycol concentration for each day used to calculate the 14-day rolling average used in test results to justify implementing the reduced testing program.

n = number of ethylene glycol concentrations.

(2) Measuring an alternative parameter, such as carbon oxygen demand or biological oxygen demand, that is demonstrated to be directly proportional to

the ethylene glycol concentration. Such parameter shall be measured during the initial 14-day performance test during which the facility is shown to be in compliance with the ethylene glycol concentration standard whereby the ethylene glycol concentration is determined using the procedures described in paragraph (j)(1) of this section. The alternative parameter shall be measured on a daily basis and the average value of the alternative parameter shall be calculated on a daily basis over a rolling 14-day period of operating days. Each daily average value of the alternative parameter constitutes a performance test.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991; 64 FR 11541, Mar. 9, 1999; 65 FR 61767, Oct. 17, 2000]

§ 60.565 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily-accessible record of the following information measured during each performance test, and shall include the following information in the report of the initial performance test in addition to the written results of such performance tests as required under § 60.8. Where a control device is used to comply with § 60.562–1(a)(1)(i)(D) only, a report containing performance test data need not be submitted, but a report containing the information in § 60.565(a)(11) is required. Where a boiler or process heater with a design heat input capacity of 150 million Btu/hour or greater is used to comply with § 60.562–1(a), a report containing performance test data need not be submitted, but a report containing the information in § 60.565(a)(2)(i) is required. The same information specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device or the outlet concentration of TOC (minus methane and ethane) is determined.

(1) When an incinerator is used to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2):

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed), measured at least every 15 minutes and averaged over the performance test period, and

(ii) The percent reduction of TOC (minus methane and ethane) achieved by the incinerator, the concentration of TOC (minus methane and ethane) (ppmv, by compound) at the outlet of the control device on a dry basis, or the emission rate in terms of kg TOC (minus methane and ethane) per Mg (lb TOC/ton) of product at the outlet of the control device, whichever is appropriate. If supplemental combustion air is used, the TOC concentration corrected to 3 percent oxygen shall be recorded and reported.

(2) When a boiler or process heater is used to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2):

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) For boilers or process heaters with a design heat input capacity of less than 150 million Btu/hr, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance was determined.

(3) When a flare is used to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2):

(i) All visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test,

(ii) Continuous records of the pilot flame heat-sensing monitoring, and

(iii) Records of all periods of operations during which the pilot flame is absent.

(4) When an incinerator, boiler, or process heater is used to demonstrate compliance with § 60.562–1(a)(2), a description of the location at which the vent stream is introduced into the incinerator, boiler, or process heater.

(5) When a flare is used to demonstrate compliance with § 60.562–1(a)(2):

(i) All visible emission readings made during the performance test,

(ii) Continuous records of the pilot flame heat-sensing monitoring, and

(iii) Records of all periods of operation during which the pilot flame is absent.

(6) When an absorber is the final unit in a system to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2), the specific gravity (or alternative parameter that is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average temperature, measured at least every 15 minutes and averaged over the performance test period, of the absorbing liquid (both measured while the vent stream is normally routed and constituted).

(7) When a condenser is the final unit in a system to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2), the average exit (product side) temperature, measured at least every 15 minutes and averaged over the performance test period while the vent stream is normally routed and constituted.

(8) Daily measurement and daily average 14–day rolling average of the ethylene glycol concentration in the liquid effluent exiting the vacuum system servicing the polymerization reaction section, if an owner or operator is subject to § 60.562–1(c) (1)(ii)(B) or (2)(ii)(B), or of the ethylene glycol concentration in the cooling water in the cooling tower, if subject to § 60.562–1(c) (2)(ii)(C) or (2)(iii)(C).

(9) When a carbon adsorber is the final unit in a system to demonstrate compliance with § 60.562–1, except § 60.562–1(a)(2): the concentration level or reading indicated by the organics monitoring device at the outlet of the adsorber, measured at least every 15 minutes and averaged over the performance test period while the vent stream is normally routed and constituted.

(10) When an owner or operator seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in §§ 60.560 (d) and (e) or with the individual stream exemptions in § 60.560(g), each process operation variable (e.g., pressure, temperature, type of catalyst) that may result in an increase in the uncontrolled emission rate, if § 60.560(d) or (e) is applicable, or in an increase in the uncontrolled annual emissions or the VOC weight percent, as appropriate, if § 60.560(g) is applicable, should such operating variable be changed.

(11) When an owner or operator uses a control device to comply with § 60.562–1(a)(1)(i)(D) alone: all periods when the control device is not operating.

(b)(1) Each owner or operator subject to the provisions of this subpart shall submit with the initial performance test or, if complying with § 60.562–1(a)(1)(i)(D), as a separate report, an engineering report describing in detail the vent system used to vent each affected vent stream to a control device. This report shall include all valves and vent pipes that could vent the stream to the atmosphere, thereby bypassing the control device, and identify which valves are car-sealed opened and which valves are car-sealed closed.

(2) If a vent system containing valves that could divert the emission stream away from the control device is used, each owner or operator subject to the provisions of this subpart shall keep for at least two years up-to-date, readily accessible continuous records of:

(i) All periods when flow is indicated if flow indicators are installed under § 69.563(d)(1).

(ii) All times when maintenance is performed on car-sealed valves, when the car seal is broken, and when the valve position is changed (i.e., from open to closed for valves in the vent piping to the control device and from closed to open for valves that vent the stream directly or indirectly to the atmosphere bypassing the control device).

(c) Where an incinerator is used to comply with § 60.562–1, except §§ 60.562(a)(1)(i)(D) and (a)(2), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily accessible continuous records of:

(1) The temperature measurements specified under § 60.563(b)(1).

(2) Records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Periods of operation during which the parameter boundaries established during the most recent performance test are exceeded are defined as follows:

(i) For noncatalytic incinerators, all 3–hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance was demonstrated.

(ii) For catalytic incinerators, all 3-hour periods of operation during which the average temperature of the vent stream immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature of the vent stream during the most recent performance test at which compliance was demonstrated. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference across the catalyst bed during the most recent performance test at which compliance was demonstrated.

(d) Where a boiler or process heater is used to comply with § 60.562–1, except §§ 60.562–1 (a)(1)(i)(D) and (a)(2), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily accessible continuous records of:

(1) Where a boiler or process heater with a heat input design capacity of 150 million Btu/hr or greater is used, all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State or Federal regulatory requirements), and

(2) Where a boiler or process heater with a heat input design capacity of less than 150 million Btu/hr is used, all periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Periods of operation during which the parameter boundaries established during the most recent performance test are exceeded are defined as all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance was demonstrated.

(e) Where a flare is used to comply with § 60.562–1, except § 60.562–1(a)(1)(i)(D), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily accessible continuous records of:

(1) The flare or pilot light flame heat sensing monitoring specified under § 60.563(b)(2), and

(2) All periods of operation in which the flare or pilot flame, as appropriate, is absent.

(f) Where an adsorber, condenser, absorber, or a control device other than a flare, incinerator, boiler, or process heater is used to comply with § 60.562–1, except § 60.562–1(a)(1)(i)(D), each owner or operator subject to the provisions of this subpart shall keep for at least 2 years up-to-date, readily-accessible continuous records of the periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. Where an owner or operator seeks to comply with § 60.562–1, periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final unit in a system:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test at which compliance was demonstrated, and

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test at which compliance was demonstrated (unless monitoring of an alternative parameter that is a measure of the degree of absorbing liquid saturation is approved by the Administrator, in which case he or she will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final unit in a system, all 3-hour periods of operation during which the average condenser operating temperature was

more than 6 °C (10 °F) above the average operating temperature during the most recent performance test at which compliance was demonstrated.

(3) Where a carbon adsorber is the final unit in a system, all 3-hour periods of operation during which the average organic concentration level in the carbon adsorber gases is more than 20 percent greater than the exhaust gas concentration level or reading measured by the organics monitoring system during the most recent performance test at which compliance was demonstrated.

(g) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.560(j) or § 60.562–1 shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of product recovery equipment; and

(2) The results of any performance test performed pursuant to the procedures specified by § 60.564.

(h) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in §§ 60.560 (d) and (e) or with the individual stream exemptions in § 60.560(g) shall keep for at least 2 years up-to-date, readily accessible records of any change in process operation that increases the uncontrolled emission rate of the process line in which the affected facility is located, if § 60.560 (d) or (e) is applicable, or that increases the uncontrolled annual emissions or the VOC weight percent of the individual stream, if § 60.560(g) is applicable.

(i) Each owner and operator subject to the provisions of this subpart is exempt from § 60.7(c) of the General Provisions.

(j) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under § 60.562–1 other than as provided under § 60.565 (a) through (e).

(k) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision of §§ 60.560 (d) and (e), the individual stream exemptions of § 60.560(g), or the requirements of § 60.562–1 shall submit to the Administrator semiannual reports of the following recorded information, as applicable. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under §§ 60.565 (c), (d)(2), and (f).

(2) All periods recorded under § 60.565(b) when the vent stream has been diverted from the control device.

(3) All periods recorded under § 60.565(d) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.565(e) in which the flare or pilot flame was absent.

(5) All periods recorded under § 60.565(a)(8) when the 14-day rolling average exceeded the standard specified in § 60.562–1(c) (1)(ii)(B), (1)(ii)(C), (2)(ii)(B), or (2)(ii)(C), as applicable.

(6) Any change in process operations that increases the uncontrolled emission rate of the process line in which the affected facility is located, as recorded in § 60.565(h).

(7) Any change in process operations that increases the uncontrolled annual emissions or the VOC weight percent of the individual stream, as recorded in § 60.565(h).

(l) Each owner or operator subject to the provisions of this subpart shall notify the Administrator of the specific provisions of § 60.562, § 60.560(d), or § 60.560(e), as applicable, with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial startup required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.562 with which he or she will comply or becomes subject to § 60.562 for the first time (i.e., the owner or operator can no longer meet the requirements of this subpart by complying with the uncontrolled threshold emission rate cutoff provision in § 60.560 (d) or (e)), then the owner or operator shall notify the Administrator 90 days before implementing a change and, upon implementing a change, a performance test shall be performed as specified in §60.564.

(m) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves alternative reporting requirements or means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

[55 FR 51035, Dec. 11, 1990; 56 FR 9178, Mar. 5, 1991, as amended at 56 FR 12299, Mar. 22, 1991; 65 FR 61768, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§60.566 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authority contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authority which will not be delegated to States: §60.562–2(c).

Subpart EEE [Reserved]

Subpart FFF—Standards of Performance for Flexible Vinyl and Urethane Coating and Printing

SOURCE: 49 FR 26892, June 29, 1984, unless otherwise noted.

§60.580 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each rotogravure printing line used to print or coat flexible vinyl or urethane products.

(b) This subpart applies to any affected facility which begins construction, modification, or reconstruction after January 18, 1983.

(c) For facilities controlled by a solvent recovery emission control device, the provisions of §60.584(a) requiring monitoring of operations will not apply until EPA has promulgated performance specifications under appendix B for the continuous monitoring system. After the promulgation of performance specifications, these provisions will apply to each affected facility under paragraph (b) of this section. Facilities controlled by a solvent recovery emission control device that become subject to the standard prior to promulgation of performance specifications must conduct performance tests in accordance with §60.13(b) after performance specifications are promulgated.

§60.581 Definitions and symbols.

(a) All terms used in this subpart, not defined below, are given the same meaning as in the Act or in subpart A of this part.

Emission control device means any solvent recovery or solvent destruction device used to control volatile organic compounds (VOC) emissions from flexible vinyl and urethane rotogravure printing lines.

Emission control system means the combination of an emission control device and a vapor capture system for the purpose of reducing VOC emissions from flexible vinyl and urethane rotogravure printing lines.

Flexible vinyl and urethane products mean those products, except for resilient floor coverings (1977 Standard Industry Code 3996) and flexible packaging, that are more than 50 micrometers (0.002 inches) thick, and that consist of or contain a vinyl or urethane sheet or a vinyl or urethane coated web.

Gravure cylinder means a plated cylinder with a printing image consisting of minute cells or indentations, specifically engraved or etched into the cylinder's surface to hold ink when continuously revolved through a fountain of ink.

Ink means any mixture of ink, coating solids, organic solvents including dilution solvent, and water that is applied to the web of flexible vinyl or urethane on a rotogravure printing line.

Ink solids means the solids content of an ink as determined by Method 24, ink manufacturer's formulation data, or plant blending records.

Inventory system means a method of physically accounting for the quantity of ink, solvent, and solids used at one or more affected facilities during a time period. The system is based on plant purchase or inventory records.

Plant blending records means those records which document the weight fraction of organic solvents and solids used in the formulation or preparation of inks at the vinyl or urethane printing plant where they are used.

Rotogravure print station means any device designed to print or coat inks on one side of a continuous web or substrate using the intaglio printing process with a gravure cylinder.

Rotogravure printing line means any number of rotogravure print stations and associated dryers capable of printing or coating simultaneously on the same continuous vinyl or urethane web or substrate, which is fed from a continuous roll.

Vapor capture system means any device or combination of devices designed to contain, collect, and route organic solvent vapors emitted from the flexible vinyl or urethane rotogravure printing line.

(b) All symbols used in this subpart not defined below are given the same meaning as in the Act or in subpart A of this part.

athe gas stream vents exiting the emission control device.
bthe gas stream vents entering the emission control device.
fthe gas stream vents which are not directed to an emission control device.
C_{aj}=the concentration of VOC in each gas stream (j) for the time period exiting the emission control device, in parts per million by volume.
C_{bi}=the concentration of VOC in each gas stream (i) for the time period entering the emission control device, in parts per million by volume.
C_{fk}=the concentration of VOC in each gas stream (k) for the time period which is not directed to an emission control device, in parts per million by volume.
Gthe weighted average mass of VOC per mass of ink solids applied, in kilograms per kilogram.
M_{ci}=the total mass of each ink (i) applied in the time period as determined from plant records, in kilograms.
M_{dj}=the total mass of each dilution solvent (j) added at the print line in the time period determined from plant records, in kilograms.
Q_{aj}=the volumetric flow rate of each effluent gas stream (j) exiting the emission control device, in standard cubic meters per hour.
Q_{bi}=the volumetric flow rate of each effluent gas stream (i) entering the emission control device, in standard cubic meters per hour.
Q_{fk}=the volumetric flow rate of each effluent gas stream (k) not directed to an emission control device, in standard cubic meters per hour.
Ethe VOC emission reduction efficiency (as a fraction) of the emission control device during performance testing.
Fthe VOC emission capture efficiency (as a fraction) of the vapor capture system during performance testing.
W_{oi}=the weight fraction of VOC in each ink (i) used in the time period as determined from Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram.
W_{si}''means the weight fraction of solids in each ink (i) used in the time period as determined from Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram.
W_{oj}=the weight fraction of VOC in each dilution solvent (j) added at the print line in the time period determined from Method 24, manufacturer's formulation data, or plant blending records, in kilograms per kilogram.

[49 FR 26892, June 29, 1984; 49 FR 32848, Aug. 17, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.582 Standard for volatile organic compounds.

(a) On and after the date on which the performance test required by § 60.8 has been completed, each owner or operator subject to this subpart shall either:

(1) Use inks with a weighted average VOC content less than 1.0 kilogram VOC per kilogram ink solids at each affected facility, or

(2) Reduce VOC emissions to the atmosphere by 85 percent from each affected facility.

(b) [Reserved]

§ 60.583 Test methods and procedures.

(a) Methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance with § 60.582(a) as follows:

(1) Method 24 for analysis of inks. If nonphotochemically reactive solvents

are used in the inks, standard gas chromatographic techniques may be used to identify and quantify these solvents. The results of Method 24 may be adjusted to subtract these solvents from the measured VOC content.

(2) Method 25A for VOC concentration (the calibration gas shall be propane);

(3) Method 1 for sample and velocity traverses;

(4) Method 2 for velocity and volumetric flow rates;

(5) Method 3 for gas analysis;

(6) Method 4 for stack gas moisture.

(b) To demonstrate compliance with § 60.582(a)(1), the owner or operator of an affected facility shall determine the weighted average VOC content of the inks according to the following procedures:

(1) Determine and record the VOC content and amount of each ink used at the print head, including the VOC content and amount of diluent solvent, for any time periods when VOC emission control equipment is not used.

(2) Compute the weighted average VOC content by the following equation:

$$G = \frac{\sum_{i=1}^{n} (W_{oi} M_{ci}) + \sum_{j=1}^{m} (W_{oj} M_{dj})}{\sum_{i=1}^{n} (M_{ci} W_{si})}$$

(3) The weighted average VOC content of the inks shall be calculated over a period that does not exceed one calendar month, or four consecutive weeks. A facility that uses an accounting system based on quarters consisting of two 28 calendar day periods and one 35 calendar day period may use an averaging period of 35 calendar days four times per year, provided the use of such an accounting system is documented in the initial performance test.

(4) Each determination of the weighted average VOC content shall constitute a performance test for any period when VOC emission control equipment is not used. Results of the initial performance test must be reported to the Administrator. Method 24 or ink manufacturers' formulation data along with plant blending records (if plant blending is done) may be used to determine VOC content. The Administrator may require the use of Method 24 if there is a question concerning the accuracy of the ink manufacturer's data or plant blending records.

(5) If, during the time periods when emission control equipment is not used, all inks used contain less than 1.0 kilogram VOC per kilogram ink solids, the owner or operator is not required to calculate the weighted average VOC content, but must verify and record the VOC content of each ink (including any added dilution solvent) used as determined by Method 24, ink manufacturers' formulation data, or plant blending records.

(c) To demonstrate compliance with § 60.582(a)(1), the owner or operator may determine the weighted average VOC content using an inventory system.

(1) The inventory system shall accurately account to the nearest kilogram for the VOC content of all inks and dilution solvent used, recycled, and discarded for each affected facility during the averaging period. Separate records must be kept for each affected facility.

(2) To determine VOC content of inks and dilution solvent used or recycled, Method 24 or ink manufacturers' formulation data must be used in combination with plant blending records (if plant blending is done) or inventory records or purchase records for new inks or dilution solvent.

(3) For inks to be discarded, only Method 24 shall be used to determine the VOC content. Inks to be discarded may be combined prior to measurement of volume or weight and testing by Method 24.

(4) The Administrator may require the use of Method 24 if there is a question concerning the accuracy of the ink manufacturer's data or plant records.

(5) The Administrator shall approve the inventory system of accounting for VOC content prior to the initial performance test.

(d) To demonstrate compliance with §60.582(a)(2), the owner or operator of an affected facility controlled by a solvent recovery emission control device or an incineration control device shall conduct a performance test to determine overall VOC emission control efficiency according to the following procedures:

(1) The performance test shall consist of three runs. Each test run must last a minimum of 30 minutes and shall continue until the printing operation is interrupted or until 180 minutes of continuous operation occurs. During each test run, the print line shall be printing continuously and operating normally. The VOC emission reduction efficiency achieved for each test run is averaged over the entire test run period.

(2) VOC concentration values at each site shall be measured simultaneously.

(3) The volumetric flow rate shall be determined from one Method 2 measurement for each test run conducted immediately prior to, during, or after that test run. Volumetric flow rates at each site do not need to be measured simultaneously.

(4) In order to determine capture efficiency from an affected facility, all fugitive VOC emissions from the affected facility shall be captured and vented through stacks suitable for measurement. During a performance test, the owner or operator of an affected facility located in an area with other sources of VOC shall isolate the affected facility from other sources of VOC. These two requirements shall be accomplished using one of the following methods:

(i) Build a permanent enclosure around the affected facility;

(ii) Build a temporary enclosure around the affected facility and duplicate, to an extent that is reasonably feasible, the ventilation conditions that are in effect when the affected facility is not enclosed (one way to do this is to divide the room exhaust rate by the volume of the room and then duplicate that quotient or 20 air changes per hour, whichever is smaller, in the temporary enclosure); or

(iii) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected facility through any building ventilation system and other room exhausts such as print line ovens and embossers.

(5) For each affected facility, compliance with §60.582(a)(2) has been demonstrated if the average value of the overall control efficiency (EF) for the three runs is equal to or greater than 85 percent. An overall control efficiency is calculated for each run as follows:

(i) For efficiency of the emission control device,

$$E = \frac{\sum_{i=1}^{n}\left(Q_{bi}C_{bi}\right) - \sum_{j=1}^{m}\left(Q_{aj}C_{aj}\right)}{\sum_{i=1}^{n}\left(Q_{bi}C_{bi}\right)}$$

(ii) For efficiency of the vapor capture system,

$$F = \frac{\sum_{i=1}^{n}\left(Q_{bi}C_{bi}\right)}{\sum_{i=1}^{n}\left(Q_{bi}C_{bi}\right) + \sum_{k=1}^{p}\left(Q_{fk}C_{fk}\right)}$$

[49 FR 26892, June 29, 1984; 49 FR 32848, Aug. 17, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§60.584 Monitoring of operations and recordkeeping requirements.

(a) The owner or operator of an affected facility controlled by a solvent recovery emission control device shall install, calibrate, operate, and maintain a monitoring system which continuously measures and records the VOC concentration of the exhaust vent stream from the control device and shall comply with the following requirements:

(1) The continuous monitoring system shall be installed in a location that is representative of the VOC concentration in the exhaust vent, at least two equivalent stack diameters from

the exhaust point, and protected from interferences due to wind, weather, or other processes.

(2) During the performance test, the owner or operator shall determine and record the average exhaust vent VOC concentration in parts per million by volume. After the performance test, the owner or operator shall determine and, in addition to the record made by the continuous monitoring device, record the average exhaust vent VOC concentration for each 3-hour clock period of printing operation when the average concentration is greater than 50 ppm and more than 20 percent greater than the average concentration value demonstrated during the most recent performance test.

(b) The owner or operator of an affected facility controlled by a thermal incineration emission control device shall install, calibrate, operate, and maintain a monitoring device that continuously measures and records the temperature of the control device exhaust gases and shall comply with the following requirements:

(1) The continuous monitoring device shall be calibrated annually and have an accuracy of ±0.75 percent of the temperature being measured, expressed in degrees Celsius, or ±2.5 °C, whichever is greater.

(2) During the performance test, the owner or operator shall determine and record the average temperature of the control device exhaust gases. After the performance test, the owner or operator shall determine and record, in addition to the record made by the continuous monitoring device, the average temperature for each 3-hour clock period of printing operation when the average temperature of the exhaust gases is more than 28 °C (50 °F) below the average temperature demonstrated during the most recent performance test.

(c) The owner or operator of an affected facility controlled by a catalytic incineration emission control device shall install, calibrate, operate, and maintain monitoring devices that continuously measure and record the gas temperatures both upstream and downstream of the catalyst bed and shall comply with the following requirements:

(1) Each continuous monitoring device shall be calibrated annually and have an accuracy of ±0.75 percent of the temperature being measured, expressed in degrees Celsius, or ±2.5 °C, whichever is greater.

(2) During the performance test, the owner or operator shall determine and record the average gas temperature both upstream and downstream of the catalyst bed. After the performance test, the owner or operator shall determine and record, in addition to the record made by the continuous monitoring device, the average temperatures for each 3-hour clock period of printing operation when the average temperature of the gas stream before the catalyst bed is more than 28 °C below the average temperature demonstrated during the most recent performance test or the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test.

(d) The owner or operator of an affected facility shall record time periods of operation when an emission control device is not in use.

[49 FR 26892, June 29, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.585 Reporting requirements.

(a) For all affected facilities subject to compliance with § 60.582, the performance test data and results from the performance test shall be submitted to the Administrator as specified in § 60.8(a).

(b) The owner or operator of each affected facility shall submit semiannual reports to the Administrator of occurrences of the following:

(1) Exceedances of the weighted average VOC content specified in § 60.582(a)(1);

(2) Exceedances of the average value of the exhaust vent VOC concentration as defined under § 60.584(a)(2);

(3) Drops in the incinerator temperature as defined under § 60.584(b)(2); and

(4) Drops in the average temperature of the gas stream immediately before the catalyst bed or drops in the average temperature across the catalyst bed as defined under § 60.584(c)(2).

(c) The reports required under paragraph (b) shall be postmarked within 30 days following the end of the second and fourth calendar quarters.

(d) The requirements of this subsection remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with requirements established by the State.

Subpart GGG—Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

SOURCE: 49 FR 22606, May 30, 1984, unless otherwise noted.

§ 60.590 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in petroleum refineries.

(2) A compressor is an affected facility.

(3) The group of all the equipment (defined in § 60.591) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 4, 1983, is subject to the requirements of this subpart.

(c) Addition or replacement of equipment (defined in § 60.591) for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d) Facilities subject to subpart VV or subpart KKK of 40 CFR part 60 are excluded from this subpart.

§ 60.591 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the act, in subpart A of part 60, or in subpart VV of part 60, and the following terms shall have the specific meanings given them.

Alaskan North Slope means the approximately 69,000 square mile area extending from the Brooks Range to the Arctic Ocean.

Equipment means each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service. For the purposes of recordkeeping and reporting only, compressors are considered equipment.

In hydrogen service means that a compressor contains a process fluid that meets the conditions specified in § 60.593(b).

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.593(c).

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through the distillation of petroleum, or through the redistillation, cracking, or reforming of unfinished petroleum derivatives.

Process unit means components assembled to produce intermediate or final products from petroleum, unfinished petroleum derivatives, or other intermediates; a process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

§ 60.592 Standards.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.482–1 to 60.482–10 as soon as practicable, but no later than 180 days after initial startup.

(b) An owner or operator may elect to comply with the requirements of §§ 60.483–1 and 60.483–2.

(c) An owner or operator may apply to the Administrator for a determination of equivalency for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of § 60.484.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of § 60.485 except as provided in § 60.593.

(e) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§ 60.486 and 60.487.

§ 60.593 Exceptions.

(a) Each owner or operator subject to the provisions of this subpart may comply with the following exceptions to the provisions of subpart VV.

(b)(1) Compressors in hydrogen service are exempt from the requirements of § 60.592 if an owner or operator demonstrates that a compressor is in hydrogen service.

(2) Each compressor is presumed not be be in hydrogen service unless an owner or operator demonstrates that the piece of equipment is in hydrogen service. For a piece of equipment to be considered in hydrogen service, it must be determined that the percent hydrogen content can be reasonably expected always to exceed 50 percent by volume. For purposes of determining the percent hydrogen content in the process fluid that is contained in or contacts a compressor, procedures that conform to the general method described in ASTM E260–73, 91, or 96, E168–67, 77, or 92, or E169–63, 77, or 93 (incorporated by reference as specified in § 60.17) shall be used.

(3)(i) An owner or operator may use engineering judgment rather than procedures in paragraph (b)(2) of this section to demonstrate that the percent content exceeds 50 percent by volume, provided the engineering judgment demonstrates that the content clearly exceeds 50 percent by volume. When an owner or operator and the Administrator do not agree on whether a piece of equipment is in hydrogen service, however, the procedures in paragraph (b)(2) shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in hydrogen service, the determination can be revised only after following the procedures in paragraph (b)(2).

(c) Any existing reciprocating compressor that becomes an affected facility under provisions of § 60.14 or § 60.15 is exempt from § 60.482 (a), (b), (c), (d), (e), and (h) provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of § 60.482 (a), (b), (c), (d), (e), and (h).

(d) An owner or operator may use the following provision in addition to § 60.485(e): Equipment is in light liquid service if the percent evaporated is greater than 10 percent at 150°C as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.18).

(e) Pumps in light liquid service and valves in gas/vapor and light liquid service within a procesic compounds of usually high molecular weight that consist of many repeated links, each link being a relatively light and simple molecule.

[49 FR 22606, May 30, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

Subpart HHH—Standards of Performance for Synthetic Fiber Production Facilities

SOURCE: 49 FR 13651, Apr. 5, 1984, unless otherwise noted.

§ 60.600 Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which the provisions of this subpart apply is each solvent-spun synthetic fiber process that produces more than 500 Mg (551 ton) of fiber per year.

(b) The provisions of this subpart do not apply to any facility that uses the reaction spinning process to produce spandex fiber or the viscose process to produce rayon fiber.

(c) The provisions of this subpart apply to each facility as identified in paragraph (a) of this section and that commences construction or reconstruction after November 23, 1982. The provisions of this subpart do not apply to facilities that commence modification but not reconstruction after November 23, 1982.

[49 FR 22606, May 30, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.601 Definitions.

All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in subpart A of this part.

Acrylic fiber means a manufactured synthetic fiber in which the fiber-forming substance is any long-chain synthetic polymer composed of at least 85 percent by weight of acrylonitrile units.

Makeup solvent means the solvent introduced into the affected facility that compensates for solvent lost from the affected facility during the manufacturing process.

Nongaseous losses means the solvent that is not volatilized during fiber production, and that escapes the process and is unavailable for recovery, or is in a form or concentration unsuitable for economical recovery.

Polymer means any of the natural or synthetic compounds of usually high molecular weight that consist of many repeated links, each link being a relatively light and simple molecule.

Precipitation bath means the water, solvent, or other chemical bath into which the polymer or prepolymer (partially reacted material) solution is extruded, and that causes physical or chemical changes to occur in the extruded solution to result in a semihardened polymeric fiber.

Rayon fiber means a manufactured fiber composed of regenerated cellulose, as well as manufactured fibers composed of regenerated cellulose in which substituents have replaced not more than 15 percent of the hydrogens of the hydroxyl groups.

Reaction spinning process means the fiber-forming process where a prepolymer is extruded into a fluid medium and solidification takes place by chemical reaction to form the final polymeric material.

Recovered solvent means the solvent captured from liquid and gaseous process streams that is concentrated in a control device and that may be purified for reuse.

Solvent feed means the solvent introduced into the spinning solution preparation system or precipitation bath. This feed stream includes the combination of recovered solvent and makeup solvent.

Solvent inventory variation means the normal changes in the total amount of solvent contained in the affected facility.

Solvent recovery system means the equipment associated with capture, transportation, collection, concentration, and purification of organic solvents. It may include enclosures, hoods, ducting, piping, scrubbers, condensers, carbon adsorbers, distillation equipment, and associated storage vessels.

Solvent-spun synthetic fiber means any synthetic fiber produced by a process that uses an organic solvent in the spinning solution, the precipitation bath, or processing of the sun fiber.

Solvent-spun synthetic fiber process means the total of all equipment having a common spinning solution preparation system or a common solvent recovery system, and that is used in the manufacture of solvent-spun synthetic fiber. It includes spinning solution preparation, spinning, fiber processing and solvent recovery, but does not include the polymer production equipment.

Spandex fiber means a manufactured fiber in which the fiber-forming substance is a long chain synthetic polymer comprised of at least 85 percent of a segmented polyurethane.

Spinning solution means the mixture of polymer, prepolymer, or copolymer and additives dissolved in solvent. The solution is prepared at a viscosity and solvent-to-polymer ratio that is suitable for extrusion into fibers.

Spinning solution preparation system means the equipment used to prepare spinning solutions; the system includes equipment for mixing, filtering, blending, and storage of the spinning solutions.

Synthetic fiber means any fiber composed partially or entirely of materials made by chemical synthesis, or made partially or entirely from chemically-modified naturally-occurring materials.

Viscose process means the fiber forming process where cellulose and concentrated caustic soda are reacted to form soda or alkali cellulose. This reacts with carbon disulfide to form sodium cellulose xanthate, which is then dissolved in a solution of caustic soda.

After ripening, the solution is spun into an acid coagulating bath. This precipitates the cellulose in the form of a regenerated cellulose filament.

[49 FR 13651, Apr. 5, 1984; 49 FR 18096, Apr. 27, 1984]

§ 60.602 Standard for volatile organic compounds.

On and after the date on which the initial performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause the discharge into the atmosphere from any affected facility that produces acrylic fibers, VOC emissions that exceed 10 kg/Mg (20 lb/ton) solvent feed to the spinning solution preparation system or precipitation bath. VOC emissions from affected facilities that produce both acrylic and nonacrylic fiber types shall not exceed 10 kg/Mg (20 lb/ton) solvent feed. VOC emissions from affected facilities that produce only nonacrylic fiber types shall not exceed 17 kg/Mg (34 lb/ton) solvent feed. Compliance with the emission limitations is determined on a 6-month rolling average basis as described in § 60.603.

[49 FR 22606, May 30, 1984, as amended at 65 FR 61768, Oct. 17, 2000]

§ 60.603 Performance test and compliance provisions.

(a) Section 60.8(f) does not apply to the performance test procedures required by this subpart.

(b) Each owner or operator of an affected facility shall determine compliance with the applicable standard in § 60.602(a) by determining and recording monthly the VOC emissions per unit mass solvent feed from each affected facility for the current and preceding 5 consecutive calendar months and using these values to calculate the 6-month average emissions. Each calculation is considered a performance test. The owner or operator of an affected facility shall use the following procedure to determine VOC emissions for each calendar month;

(1) Install, calibrate, maintain, and operate monitoring devices that continuously measure and permanently record for each calendar month the amount of makeup solvent and solvent feed. These values shall be used in calculating VOC emissions according to paragraph (b)(2) of this section. All monitoring devices, meters, and peripheral equipment shall be calibrated and any error recorded. Total compounded error of the flow measuring and recording devices shall not exceed 1 percent accuracy over the operating range. As an alternative to measuring solvent feed, the owner or operator may:

(i) Measure the amount of recovered solvent returned to the solvent feed storage tanks, and use the following equation to determine the amount of solvent feed:

Solvent Feed=Makeup Solvent+Recovered Solvent+Change in the Amount of Solvent Contained in the Solvent Feed Holding Tank.

(ii) Measure and record the amount of polymer introduced into the affected facility and the solvent-to-polymer ratio of the spinning solutions, and use the following equation to determine the amount of solvent feed:

$$\text{Solvent Feed} = \sum_{i=1}^{n}$$

where subscript ‘‘i’’ denotes each particular spinning solution used during the test period; values of ‘‘i’’ vary from one to the total number of spinning solutions, ‘‘n,’’ used during the calendar month.

(2) VOC emissions shall be determined each calendar month by use of the following equations:

$$E = \frac{M_w}{S_W} - N - I \text{ and } M_w = M_V S_p D$$

$$S_W = \frac{S_v S_p D}{K}$$

$$I = \frac{I_E - I_S}{S_W}$$

where all values are for the calendar month only and where

E = VOC Emissions, in kg/Mg (lb/ton) solvent;

S_V = Measured or calculated volume of solvent feed, in liters (gallons);

S_W = Weight of solvent feed, in Mg (ton);

M_V = Measured volume of makeup solvent, in liters (gallons);

M_W = Weight of makeup, in kg (lb);

N = Allowance for nongaseous losses, 13 kg/Mg (26 lb/ton) solvent feed;

S_P = Fraction of measured volume that is actual solvent (excludes water);

D = Density of the solvent, in kg/liter (lb/gallon);

K = Conversion factor, 1,000 kg/Mg (2,000 lb/ton);

I = Allowance for solvent inventory variation or changes in the amount of solvent contained in the affected facility, in kg/Mg (lb/ton) solvent feed (may be positive or negative);

I_S = Amount of solvent contained in the affected facility at the beginning of the test period, as determined by the owner or operator, in kg (lb);

I_E = Amount of solvent contained in the affected facility at the close of the test period, as determined by the owner or operator, in kg (lb).

(3) N, as used in the equation in paragraph (b)(2) of this section, equals 13 kg/Mg (26 lb/ton) solvent feed to the spinning solution preparation system and precipitation bath. This value shall be used in all cases unless an owner or operator demonstrates to the satisfaction of the Administrator that greater nongaseous losses occur at the affected facility. In this case, the greater value may be substituted in the equation.

[49 FR 13651, Apr. 5, 1984; 49 FR 18096, Apr. 27, 1984, as amended at 65 FR 61769, Oct. 17, 2000]

§ 60.604 Reporting requirements.

(a) The owner or operator of an affected facility shall submit a written report to the Administrator of the following:

(1) The results of the initial performance test; and

(2) The results of subsequent performance tests that indicate that VOC emissions exceed the standards in § 60.602. These reports shall be submitted quarterly at 3-month intervals after the initial performance test. If no exceedances occur during a particular quarter, a report stating this shall be submitted to the Administrator semiannually.

(b) Solvent-spun synthetic fiber producing facilities exempted from these standards in § 60.600(a) (those producing less than 500 Mg (551 ton) annually) shall report to the Administrator within 30 days whenever extruded fiber for the preceding 12 calendar months exceeds 500 Mg (551 ton).

(c) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternate means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

[49 FR 13651, Apr. 5, 1984, as amended at 55 FR 51384, Dec. 13, 1990; 59 FR 32341, June 23, 1994; 65 FR 61769, Oct. 17, 2000]

Subpart III—Standards of Performance for Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes

SOURCE: 55 FR 26922, June 29, 1990, unless otherwise noted.

§ 60.610 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that produces any of the chemicals listed in § 60.617 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c) of this section.

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after October 21, 1983:

(1) Each air oxidation reactor not discharging its vent stream into a recovery system.

(2) Each combination of an air oxidation reactor and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more air oxidation reactors and the common recovery system into which their vent streams are discharged.

(c) Each affected facility that has a total resource effectiveness (TRE) index value greater than 4.0 is exempt from all provisions of this subpart except for §§ 60.612, 60.614(f), 60.615(h), and 60.615(1).

(d) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§60.612 through 60.615 and 60.618. The provisions of 40 CFR part 65 also satisfy the criteria of paragraph (c) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3) with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

NOTE: The intent of these standards is to minimize the emissions of VOC through the application of BDT. The numerical emission limits in these standards are expressed in terms of total organic compounds (TOC), measured as TOC minus methane and ethane. This emission limit reflects the performance of BDT.

[55 FR 26922, June 29, 1990, as amended at 65 FR 78278, Dec. 14, 2000]

§60.611 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

Air Oxidation Reactor means any device or process vessel in which one or more organic reactants are combined with air, or a combination of air and oxygen, to produce one or more organic compounds. Ammoxidation and oxychlorination reactions are included in this definition.

Air Oxidation Reactor Recovery Train means an individual recovery system receiving the vent stream from at least one air oxidation reactor, along with all air oxidation reactors feeding vent streams into this system.

Air Oxidation Unit Process means a unit process, including ammoxidation and oxychlorination unit process, that uses air, or a combination of air and oxygen, as an oxygen source in combination with one or more organic reactants to produce one or more organic compounds.

Boilers means any enclosed combustion device that extracts useful energy in the form of steam.

By Compound means by individual stream components, not carbon equivalents.

Continuous recorder means a data recording device recording an instantaneous data value at least once every 15 minutes.

Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.

Flow indicator means a device which indicates whether gas flow is present in a vent stream.

Halogenated Vent Stream means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

Incinerator means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

Process Heater means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that is heated to produce steam.

Process Unit means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in § 60.617. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

Product means any compound or chemical listed in § 60.617 that is produced for sale as a final product as that chemical or is produced for use in a process that needs that chemical for the production of other chemicals in another facility. By-products, co-products, and intermediates are considered to be products.

Recovery Device means an individual unit of equipment, such as an absorber, condenser, and carbon adsorber, capable of and used to recover chemicals for use, reuse or sale.

Recovery System means an individual recovery device or series of such devices applied to the same process stream.

Total organic compounds (TOC) means those compounds measured according to the procedures in § 60.614(b)(4). For the purposes of measuring molar composition as required in § 60.614(d)(2)(i), hourly emissions rate as required in § 60.614(d)(5) and § 60.614(e) and TOC concentration as required in § 60.615(b)(4) and § 60.615(g)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded. The compounds to be excluded are identified in Environmental Protection Agency's statements on ozone abatement policy for SIP revisions (42 FR 35314; 44 FR 32042; 45 FR 32424; 45 FR 48942).

Total resource effectiveness (TRE) Index Value means a measure of the supplemental total resource requirement per unit reduction of TOC associated with an individual air oxidation vent stream, based on vent stream flow rate, emission rate of TOC, net heating value, and corrosion properties (whether or not the vent stream is halogenated), as quantified by the equation given under § 60.614(e).

Vent Stream means any gas stream, containing nitrogen which was introduced as air to the air oxidation reactor, released to the atmosphere directly from any air oxidation reactor recovery train or indirectly, after diversion through other process equipment. The vent stream excludes equipment leaks and relief valve discharges including, but not limited to, pumps, compressors, and valves.

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990]

§ 60.612 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by §§ 60.8 and 60.614 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (minus methane and ethane) by 98 weight-percent, or to a TOC (minus methane and ethane) concentration of 20 ppmv on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of § 60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of VOC emission control devices.

§ 60.613 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under § 60.612(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) A flow indicator that provides a record of vent stream flow to the incinerator at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the inlet of each incinerator and before being joined with any other vent stream.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with § 60.612(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultra-violet sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the flare and before being joined with any other vent stream.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with § 60.612(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow to the boiler or process heater at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each air oxidation reactor within an affected facility at a point closest to the inlet of each boiler or process heater and before being joined with any other vent stream.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius or ± 0.5 °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) heat input design capacity.

(d) Monitor and record the periods of operation of the boiler or process heater if the design input capacity of the boiler is 44 MW (150 million Btu/hr) or greater. The records must be readily available for inspection.

(e) The owner or operator of an affected facility that seeks to demonstrate compliance with the TRE index value limit specified under § 60.612(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in a recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius or 0.5 °C, whichever is greater, and a specific gravity monitoring device having an accuracy of 0.02 specific gravity units, each equipped with a continuous recorder;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in a recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an acuracy of ± 1 percent of the temperature being monitored expressed in degrees Celsius or 0.5 °C, whichever is greater;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device in a recovery system:

(i) An integrating steam flow monitoring device having an accuracy of 10 percent, and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, both equipped with a continuous recorder;

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(f) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under § 60.612 with control devices other than an incinerator, boiler, process heater, or flare; or recovery devices other than an absorber, condenser, or carbon adsorber shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[55 FR 26922, June 29, 1990, as amended at 65 FR 61769, Oct. 17, 2000]

§ 60.614 Test methods and procedures.

(a) For the purpose of demonstrating compliance with § 60.612, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under § 60.8(b) shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under § 60.612(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples and the samples shall be taken during the same time that the TOC samples are taken. The TOC concentration corrected to 3 percent O_2 (C_c) shall be computed using the following equation:

$$C_c = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

where:

C_c=Concentration of TOC corrected to 3 percent 0_2, dry basis, ppm by volume.

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$\%O_{2d}$=Concentration of O_2, dry basis, percent by volume.

(4) Method 18 to determine concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used then the samples shall be taken at 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, percent by weight.

E_i=Mass rate of TOC entering the control device, kg/hr (lb/hr).

E_o=Mass rate of TOC discharged to the atmosphere, kg/hr (lb/hr).

(iii) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_2 \left(\sum_{j=1}^{n} C_{ij} M_{ij} \right) Q_i$$

$$E_o = K_2 \left(\sum_{j=1}^{n} C_{oj} M_{oj} \right) Q_o$$

Where:

C_{ij}, C_{oj}=Concentration of sample component “j” of the gas stream at the inlet and outlet of the control device, respectively, dry basis ppm by volume.

M_{ij}, M_{oj}=Molecular weight of sample component “j“ of the gas stream at the inlet and outlet of the control device, respectively, g/g-mole (lb/lb-mole).

Q_i, Q_o=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/min).

K_2 = 2.494×10^{-6} (1/ppm)(g-mole/scm)(kg/g)(min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.557×10^{-7} (1/ppm)(lb-mole/scf)(min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

(iv) The TOC concentration (C_{TOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

C_j=Concentration of sample components in the sample.

n=Number of components in the sample.

(c) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek to comply with § 60.612(a), the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(d) When a flare is used to seek to comply with § 60.612(b), the flare shall comply with the requirements of § 60.18.

(e) The following test methods in appendix A to this part, except as provided under § 60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under § 60.612(b) and for determining the process vent stream TRE index value to determine compliance under § 60.612(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in § 60.614(e)(2) and (3) shall be, except for the situations outlined in paragraph (e)(1)(ii) of this section, prior to the inlet of any control device, prior to any post-reactor dilution of the stream with air, and prior to any post-reactor introduction of halogenated compounds into the vent stream. No transverse site selection method is needed for vents smaller than 10 centimeters (4 inches) in diameter.

(ii) If any gas stream other than the air oxidation vent stream from the affected facility is normally conducted through the final recovery device.

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which the nonair oxidation stream is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any nonair oxidation vent stream and at the outlet of the final recovery device.

(C) This efficiency is applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of the nonair oxidation stream to determine the concentration of TOC in the air oxidation stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in § 60.614(e)(4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) D1946–77, or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1\left(\sum_{j=1}^{n} C_j H_j\right)$$

where:

H_T = Net heating value of the sample, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F).

K_1 = 1.74×10^{-7} (1/ppm)(g-mole/scm)(MJ/kcal) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.03×10^{-11} (1/ppm)(lb-mole/scf)(Btu/kcal) (English units) where standard temperature for (lb/mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77, 90, or 94 (incorporation by reference as specified in § 60.17 of this part) as indicated in § 60.614(e)(2).

H_j = Net heat of combustion of compound j, kcal/(g-mole) [kcal/(lb-mole)], based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg).

(5) The emission rate of TOC in the process vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2\left[\sum_{j=1}^{n} C_j M_j\right] Q_s$$

where:

E_{TOC} = Measured emission rate of TOC, kg/hr (lb/hr).

K_2 = 2.494×10^{-6} (1/ppm)(g-mole/scm)(kg/g)(min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.557×10^{-7} (1/ppm)(lb-mole/scf)(min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm, as measured by Method 18 as indicated in § 60.614(e)(2).

M_j = Molecular weight of sample j, g/g-mole (lb/lb-mole).

Q_s = Vent stream flow rate, scm/hr (scf/hr), at a temperature of 20 °C (68 °F).

(6) The total process vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(f) For purposes of complying with § 60.612(c), the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in paragraph (e)(1) of this section and the flare equation in paragraph (e)(2) of this section and selecting the lower of the two values.

(1) The TRE index value of the vent stream controlled by an incinerator shall be calculated using the following equation:

$$TRE = \frac{1}{E_{TOC}}\left[a + b(Q_s)^{0.88} + c(Q_s) + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5}\right]$$

(i) Where for a vent stream flow rate that is greater than or equal to 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.

Q_s = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

Y_s = Q_s for all vent stream categories listed in Table 1 except for Category E vent streams where $Y_s = Q_sH_T/3.6$.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr). a, b, c, d, e, and f are coefficients.

The set of coefficients which apply to a vent stream shall be obtained from Table 1.

TABLE 1. AIR OXIDATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR

DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 3.5 OR IF 0 ≤ NET HEATING VALUE (Btu/scf) ≤ 94:

Q_s = Vent Stream Flow rate scm/min (scf/min)	a	b	c	d	e	f
$14.2 \leq Q_s \leq 18.8$	19.18370	0.27580	0.75762	-0.13064	0	0.01025
$(501 \leq Q_s \leq 664)$	(42.29238)	(0.017220)	(0.072549)	(-0.00030361)	(0)	(0.003803)
$18.8 < Q_s \leq 699$	20.00563	0.27580	0.30387	-0.13064	0	0.01025
$(664 < Q_s \leq 24{,}700)$	(44.10441)	(0.017220)	(0.029098)	(-0.00030361)	(0)	(0.003803)
$699 < Q_s \leq 1400$	39.87022	0.29973	0.30387	-0.13064	0	0.01449
$(24{,}700 < Q_s < 49{,}000)$	(87.89789)	(0.018714)	(0.029098)	(-0.00030361)	(0)	(0.005376)
$1400 < Q_s < 2100$	59.73481	0.31467	0.30387	-0.13064	0	0.01775
$(49{,}000 < Q_s \leq 74{,}000)$	(131.6914)	(0.019647)	(0.029098)	(-0.00030361)	(0)	(0.006585)
$2100 < Q_s \leq 2800$	79.59941	0.32572	0.30387	-0.13064	0	0.02049
$(74{,}000 < Q_s \leq 99{,}000)$	(175.4849)	(0.020337)	(0.029098)	(-0.00030361)	(0)	(0.007602)
$2800 < Q_s \leq 3500$	99.46400	0.33456	0.30387	-0.13064	0	0.02291
$(99{,}000 < Q_s \leq 120{,}000)$	(219.2783)	(0.020888)	(0.029098)	(-0.00030361)	(0)	(0.008500)

DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE < 3.5 (MJ/scm) OR IF NET HEATING VALUE < 94 (Btu/scf):

Q_s = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_s \leq 18.8$	18.84466	0.26742	-0.20044	0	0	0.01025
$(501 \leq Q_s \leq 664)$	(41.54494)	(0.016696)	(-0.019194)	(0)	(0)	(0.003803)
$18.8 < Q_s \leq 699$	19.66658	0.26742	-0.25332	0	0	0.01025
$(664 < Q_s \leq 24{,}700)$	(43.35694)	(0.016696)	(-0.024258)	(0)	(0)	(0.003803)
$699 < Q_s \leq 1400$	39.19213	0.29062	-0.25332	0	0	0.01449
$(24{,}700 < Q_s \leq 49{,}000)$	(86.40297)	(0.018145)	(-0.024258)	(0)	(0)	(0.005376)
$1400 < Q_s \leq 2100$	58.71768	0.30511	-0.25332	0	0	0.01775
$(49{,}000 < Q_s \leq 74{,}000)$	(129.4490)	(0.019050)	(-0.024258)	(0)	(0)	(0.006585)
$2100 < Q_s < 2800$	78.24323	0.31582	-0.25332	0	0	0.02049
$(74{,}000 < Q_s \leq 99{,}000)$	(172.4950)	(0.019718)	(-0.024258)	(0)	(0)	(0.007602)
$2800 < Q_s \leq 3500$	97.76879	0.32439	-0.25332	0	0	0.02291
$(99{,}000 < Q_s \leq 120{,}000)$	(215.5411)	(0.020253)	(-0.024258)	(0)	(0)	(0.008500)

DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 0.48 OR IF 0 ≤ NET HEATING VALUE (Btu/scf) ≤ 13:

Q_s = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_s \leq 1340$	8.54245	0.10555	0.09030	-0.17109	0	0.01025
$(501 \leq Q_s < 47{,}300)$	(18.83268)	(0.0065901)	(0.008647)	(-0.00039762)	(0)	(0.003803)
$1340 < Q_s \leq 2690$	16.94386	0.11470	0.09030	-0.17109	0	0.01449
$(47{,}300 < Q_s \leq 95{,}000)$	(37.35443)	(0.0071614)	(0.008647)	(-0.00039762)	(0)	(0.005376)
$2690 < Q_s \leq 4040$	25.34528	0.12042	0.09030	-0.17109	0	0.01775
$(95{,}000 < Q_s \leq 143{,}000)$	(55.87620)	(0.0075185)	(0.008647)	(-0.00039762)	(0)	(0.00658

DESIGN CATEGORY C. FOR NONHALOGENTED PROCESS VENT STREAMS, IF 0.48 < NET HEATING VALUE (MJ/scm) ≤ 1.9 OR IF 13 < NET HEATING VALUE (Btu/scf) ≤ 51:

Q_s = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_s \leq 1340$	9.25233	0.06105	0.31937	-0.16181	0	0.01025
$(501 \leq Q_s \leq 47{,}300)$	(20.39769)	(0.003812)	(0.030582)	(-0.00037605)	(0)	(0.003803)
$1340 < Q_s \leq 2690$	18.36363	0.06635	0.31937	-0.16181	0	0.01449
$(47{,}300 < Q_s \leq 95{,}000)$	(40.48446)	(0.004143)	(0.030582)	(-0.00037605)	(0)	(0.005376)
$2690 < Q_s < 4040$	27.47492	0.06965	0.31937	-0.16181	0	0.01775
$(95{,}000 < Q_s \leq 143{,}000)$	(60.57121)	(0.004349)	(0.030582)	(-0.00037605)	(0)	(0.006585)

DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9 < NET HEATING VALUE (MJ/scm) ≤ 3.6 OR IF 51 < NET HEATING VALUE (Btu/scf) ≤ 97:

Q_s = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_s < 1180$	6.67868	0.06943	0.02582	0	0	0.01025
$(501 \leq Q_s < 41{,}700)$	(14.72382)	(0.004335)	(0.002472)	(0)	(0)	(0.003803)
$1180 < Q_s \leq 2370$	13.21633	0.07546	0.02582	0	0	0.01449
$(41{,}700 < Q_s \leq 83{,}700)$	(29.13672)	(0.004711)	(0.002472)	(0)	(0)	(0.005376)
$2370 < Q_s \leq 3550$	19.75398	0.07922	0.02582	0	0	0.01775
$(83{,}700 < Q_s < 125{,}000)$	(43.54962)	(0.004946)	(0.002472)	(0)	(0)	(0.00658

Q_s = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Y_s \leq 1180$	6.67868	0	0	-0.00707	0.02220	0.01025
$(501 < Y_s \leq 41{,}700)$	(14.72382)	(0)	(0)	(-0.0000164)	(0.0001174)	(0.003803)
$1180 < Y_s \leq 2370$	13.21633	0	0	-0.00707	0.02412	0.01449
$(41{,}700 < Y_s \leq 83{,}700)$	(29.13672)	(0)	(0)	(-0.0000164)	(0.0001276)	(0.005376)
$2370 < Y_s \leq 3550$	19.75398	0	0	-0.00707	0.02533	0.01775
$(83{,}700 < Y_s \leq 125{,}000)$	(43.54962)	(0)	(0)	(-0.0000164)	(0.0001340)	(0.006585)

(ii) Where for a vent stream flow rate that is less than 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.
Q_s = 14.2 scm/min (501 scf/min).
H_T = (FLOW)(HVAL)/Q_s.

Where the following inputs are used:

FLOW = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).
HVAL = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for

determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

$Y_s = Q_s$ for all vent stream categories listed in Table 1 except for Category E vent streams where $Y_s = Q_s H_T/3.6$.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

a, b, c, d, e, and f are coefficients.

The set of coefficients that apply to a vent stream can be obtained from Table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$\mathrm{TRE} = \frac{1}{E_{TOC}}\left[a\left(Q_s\right) + b\left(Q_s\right)^{0.8} + c\left(Q_s\right)\left(H_T\right) + d\left(E_{TOC}\right) + e\right]$$

where:

TRE = TRE index value.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

Q_s = Vent stream flow rate, scm/min (scf/min), at a standard temperature of 20 °C (68 °F).

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

a, b, c, d, and e are coefficients.

The set of coefficients that apply to a vent stream shall be obtained from Table 2.

TABLE 2.—AIR OXIDATION PROCESSES NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE

	a	b	c	d	e
H_T < 11.2 MJ/scm	2.25	0.288	−0.193	(−0.0051	2.08
(H_T < 301 Btu/scf)	(0.140)	(0.0367)	(−0.000448)	(−0.0051)	(4.59)
H_T ≥ 11.2 MJ/scm	0.309	0.0619	−0.0043	−0.0034	2.08
H_T ≥ 301 Btu/scf)	(0.0193)	(0.00788)	(−0.000010)	(−0.0034)	(4.59)

(g) Each owner or operator of an affected facility seeking to comply with § 60.610(c) or § 60.612(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Some examples of process changes are changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change to the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by § 60.614 to determine compliance with § 60.612(a). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the initial TRE index value is greater than 4.0 and the recalculated TRE index value is less than or equal to 4.0, but greater than 1.0, the owner or operator shall conduct a performance test in accordance with § 60.8 and § 60.614 and shall comply with §§ 60.613, 60.614, and 60.615. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990, as amended at 65 FR 61769, Oct. 17, 2000]

§ 60.615 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.612 shall notify the Administrator of the specific provisions of § 60.612

(§ 60.612 (a) (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.612 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by § 60.614 within 180 days.

(b) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under § 60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to comply with § 60.612(a), a report containing performance test data need not be submitted, but a report containing the information of § 60.615(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a control device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to this subpart seeks to demonstrate compliance with § 60.612(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in § 60.614(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in § 60.614(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.612(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to comply with § 60.612(b) through the use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator seeks to demonstrate compliance with § 60.612(c):

(i) Where an absorber is the final recovery device in a recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature of the absorbing liquid, measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted), or

(ii) Where a condenser is the final recovery device in a recovery system, the average exit (product side) temperature, measured at least every 15 minutes and average over the same time period of the performance testing while the vent stream is normally routed and constituted.

(iii) Where a carbon adsorber is the final recovery device in a recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s), and duration of the carbon bed steaming cycle (all measured while the vent stream is normally routed and constituted), or

(iv) As an alternative to §60.615(b)(4)(i), (ii) or (iii), the concentration level or reading indicated by the organic monitoring device at the outlet of the absorber, condenser, or carbon adsorber measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.613(a) and (c) as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where a combustion device is used by an owner or operator seeking to demonstrate compliance with §60.612(a) or (c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) For thermal incinerators, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.612(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which the average temperature of the vent stream immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature of the vent stream during the most recent performance test at which compliance with §60.612(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test at which compliance with §60.612(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.612(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr).

(4) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under §60.612(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flow indication specified under §60.613(a)(2), §60.613(b)(2), and §60.613(c)(1), as well as up-to-date, readily accessible records of all periods when the vent stream is diverted from the control device or has no flow rate.

(e) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater to comply with §60.612(a) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State or Federal regulatory requirements).

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified in §60.613(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(g) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.613(e) as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where the owner or operator seeks to demonstrate compliance with § 60.612(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he or she will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) When a condenser is the final recovery device in a recovery system, and where an organic monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (11 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a recovery system and where an organic monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent greater than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and an organic monitoring device approved by the Administrator is used, all 3-hour periods of operation during which the average concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(h) Each owner or operator subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.612(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or air oxidation reactors;

(2) Any recalculation of the TRE index value performed pursuant to § 60.614(f);

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.614(d).

(i) Each owner and operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in § 60.7(c) of the General Provisions.

(j) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.612 shall submit to the Administrator semiannual reports of the following information. The initial report shall be submitted within 6 months after the initial start-up-date.

(1) Exceedances of monitored parameters recorded under § 60.615(c) and (g).

(2) All periods recorded under § 60.615(d) when the vent stream is diverted from the control device or has no flow rate.

(3) All periods recorded under § 60.615(e) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.615(f) in which the pilot flame of the flare was absent.

(5) Any recalculation of the TRE index value, as recorded under §60.615(h).

(k) The requirements of §60.615(j) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with §60.615(j), provided that they comply with the requirements established by the State.

(l) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility seeks to demonstrate compliance with the standards specified under §60.612 other than as provided under §60.613(a), (b), (c), and (d).

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990, as amended at 65 FR 61773, Oct. 17, 2000]

§60.616 Reconstruction.

For purposes of this subpart ''fixed capital cost of the new components,'' as used in §60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following October 21, 1983. For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§60.617 Chemicals affected by subpart III.

Chemical name	CAS No.*
Acetaldehyde	75–07–0
Acetic acid	64–19–7
Acetone	67–64–1
Acetonitrile	75–05–8
Acetophenone	98–86–2
Acrolein	107–02–8
Acrylic acid	79–10–7
Acrylonitrile	107–13–1
Anthraquinone	84–65–1
Benzaldehyde	100–52–7
Benzoic acid, tech	65–85–0
1,3-Butadiene	106–99–0
p-t-Butyl benzoic acid	98–73–7
N-Butyric acid	107–92–6
Crotonic acid	3724–65–0
Cumene hydroperoxide	80–15–9
Cyclohexanol	108–93–0
Cyclohexanone	108–94–1
Dimethyl terephthalate	120–61–6
Ethylene dichloride	107–06–2
Ethylene oxide	75–21–8
Formaldehyde	50–00–0
Formic acid	64–18–6
Glyoxal	107–22–2
Hydrogen cyanide	74–90–8
Isobutyric acid	79–31–2
Isophthalic acid	121–91–5
Maleic anhydride	108–31–6
Methyl ethyl ketone	78–93–3
a-Methyl styrene	98–83–9
Phenol	108–95–2
Phthalic anhydride	85–44–9
Propionic acid	79–09–4
Propylene oxide	75–56–9
Styrene	100–42–5
Terephthalic acid	100–21–0

*CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

§60.618 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §60.613(e).

Subpart JJJ—Standards of Performance for Petroleum Dry Cleaners

SOURCE: 49 FR 37331, Sept. 21, 1984, unless otherwise noted.

§60.620 Applicability and designation of affected facility.

(a) The provisions of this subpart are applicable to the following affected facilities located at a petroleum dry cleaning plant with a total manufacturers' rated dryer capacity equal to or greater than 38 kilograms (84 pounds): Petroleum solvent dry cleaning dryers, washers, filters, stills, and settling tanks.

(1) When the affected facility is installed in an existing plant that is not expanding the manufacturers' rated capacity of its petroleum solvent

dryer(s), the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated capacity for each existing petroleum solvent dryer.

(2) When the affected facility is installed in a plant that is expanding the manufacturers' rated capacity of its petroleum solvent dryers, the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated dryer capacity for each existing and proposed new petroleum solvent dryer.

(3) When the affected facilty is installed in a new plant, the total manufacturers' rated dryer capacity is the summation of the manufacturers' rated dryer capacity for each proposed new petroleum solvent dryer.

(4) The petroleum solvent dryers considered in the determination of the total manufacturers' rated dryer capacity are those new and existing dryers in the plant that will be in service at any time after the proposed new source or modification commences operation.

(b) Any facility under paragraph (a) of this section that commences construction or modification after December 14, 1982, is subject to the requirements of this subpart with the following exception. A dryer installed between December 14, 1982, and September 21, 1984, in a plant with an annual solvent consumption level of less than 17,791 liters (4,700 gallons), is exempt from the requirements of this subpart.

[49 FR 37331, Sept. 21, 1984, as amended at 50 FR 49026, Nov. 27, 1985; 65 FR 61773, Oct. 17, 2000]

§ 60.621 Definitions.

As used in this subpart, all terms not defined herein shall have the same meaning given them in the Act and in subpart A of this part.

Cartridge filter means a discrete filter unit containing both filter paper and activated carbon that traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in the installation of this device.

Dryer means a machine used to remove petroleum solvent from articles of clothing or other textile or leather goods, after washing and removing of excess petroleum solvent, together with the piping and ductwork used in the installation of this device.

Manufacturers' rated dryer capacity means the dryer's rated capacity of articles, in pounds or kilograms of clothing articles per load, dry basis, that is typically found on each dryer on the manufacturer's name-plate or in the manufacturer's equipment specifications.

Perceptible leaks means any petroleum solvent vapor or liquid leaks that are conspicuous from visual observation or that bubble after application of a soap solution, such as pools or droplets of liquid, open containers or solvent, or solvent laden waste standing open to the atmosphere.

Petroleum dry cleaner means a dry cleaning facility that uses petroleum solvent in a combination of washers, dryers, filters, stills, and settling tanks.

Settling tank means a container that gravimetrically separates oils, grease, and dirt from petroleum solvent, together with the piping and ductwork used in the installation of this device.

Solvent filter means a discrete solvent filter unit containing a porous medium that traps and removes contaminants from petroleum solvent, together with the piping and ductwork used in the installation of this device.

Solvent recovery dryer means a class of dry cleaning dryers that employs a condenser to condense and recover solvent vapors evaporated in a closed-loop stream of heated air, together with the piping and ductwork used in the installation of this device.

Still means a device used to volatilize, separate, and recover petroleum solvent from contaminated solvent, together with the piping and ductwork used in the installation of this device.

Washer means a machine which agitates fabric articles in a petroleum solvent bath and spins the articles to remove the solvent, together with the piping and ductwork used in the installation of this device.

§ 60.622 Standards for volatile organic compounds.

(a) Each affected petroleum solvent dry cleaning dryer that is installed at a petroleum dry cleaning plant after December 14, 1982, shall be a solvent recovery dryer. The solvent recovery dryer(s) shall be properly installed, operated, and maintained.

(b) Each affected petroleum solvent filter that is installed at a petroleum dry cleaning plant after December 14, 1982, shall be a cartridge filter. Cartridge filters shall be drained in their sealed housings for at least 8 hours prior to their removal

(c) Each manufacturer of an affected petroleum solvent dryer shall include leak inspection and leak repair cycle information in the operating manual and on a clearly visible label posted on each affected facility. Such information should state:

> To protect against fire hazards, loss of valuable solvents, and emissions of solvent to the atmosphere, periodic inspection of this equipment for evidence of leaks and prompt repair of any leaks is recommended. The U.S. Environmental Protection Agency recommends that the equipment be inspected every 15 days and all vapor or liquid leaks be repaired within the subsequent 15 day period.

[49 FR 37331, Sept. 21, 1984, as amended at 50 FR 49026, Nov. 27, 1985]

§ 60.623 Equivalent equipment and procedures.

(a) Upon written application from any person, the Administrator may approve the use of equipment or procedures that have been demonstrated to his satisfaction to be equivalent, in terms of reducing VOC emissions to the atmosphere, to those prescribed for compliance within a specified paragraph of this subpart. The application must contain a complete description of the equipment or procedure; the testing method; the date, time and location of the test; and a description of the test results. Written applications shall be submitted to the Administrator, U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

(b) The Administrator will make a preliminary determination of whether or not the application for equivalency is approvable and will publish a notice of these findings in the FEDERAL REGISTER. After notice and opportunity for public hearing, the Administrator will publish the final determination in the FEDERAL REGISTER.

§ 60.624 Test methods and procedures.

Each owner or operator of an affected facility subject to the provisions of § 60.622(a) shall perform an initial test to verify that the flow rate of recovered solvent from the solvent recovery dryer at the termination of the recovery cycle is no greater than 0.05 liters per minute. This test shall be conducted for a duration of no less than 2 weeks during which no less than 50 percent of the dryer loads shall be monitored for their final recovered solvent flow rate. The suggested point for measuring the flow rate of recovered solvent is the outlet of the solvent-water separator. Near the end of the recovery cycle, the entire flow of recovered solvent should be diverted to a graduated cylinder. As the recovered solvent collects in the graduated cylinder, the elapsed time is monitored and recorded in periods of greater than or equal to 1 minute. At the same time, the volume of solvent in the graduated cylinder is monitored and recorded to determine the volume of recovered solvent that is collected during each time period. The recovered solvent flow rate is calculated by dividing the volume of solvent collected per period by the length of time elapsed during the period and converting the result with appropriate factors into units of liters per minute. The recovery cycle and the monitoring procedure should continue until the flow rate of solvent is less than or equal to 0.05 liter per minute. The type of articles cleaned and the total length of the cycle should then be recorded.

[49 FR 37331, Sept. 21, 1984, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.625 Recordkeeping requirements.

Each owner or operator of an affected facility subject to the provisions of this subpart shall maintain a record of the performance test required under § 60.624.

Subpart KKK—Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.

SOURCE: 50 FR 26124, June 24, 1985, unless otherwise noted.

§ 60.630 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in onshore natural gas processing plants.

(2) A compressor in VOC service or in wet gas service is an affected facility.

(3) The group of all equipment except compressors (definied in § 60.631) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after January 20, 1984, is subject to the requirements of this subpart.

(c) Addition or replacement of equipment (defined in § 60.631) for the purpose of process improvement that is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d) Facilities covered by subpart VV or subpart GGG of 40 CFR part 60 are excluded from this subpart.

(e) A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant. If the unit is not located at the plant site, then it is exempt from the provisions of this subpart.

§ 60.631 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act, in subpart A or subpart VV of part 60; and the following terms shall have the specific meanings given them.

Alaskan North Slope means the approximately 69,000 square-mile area extending from the Brooks Range to the Arctic Ocean.

Equipment means each pump, pressure relief device, open-ended valve or line, valve, compressor, and flange or other connector that is in VOC service or in wet gas service, and any device or system required by this subpart.

Field gas means feedstock gas entering the natural gas processing plant.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in § 60.485(e) or § 60.633(h)(2).

In wet gas service means that a piece of equipment contains or contacts the field gas before the extraction step in the process.

Natural gas liquids means the hydrocarbons, such as ethane, propane, butane, and pentane, that are extracted from field gas.

Natural gas processing plant (gas plant) means any processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

Nonfractionating plant means any gas plant that does not fractionate mixed natural gas liquids into natural gas products.

Onshore means all facilities except those that are located in the territorial seas or on the outer continental shelf.

Process unit means equipment assembled for the extraction of natural gas liquids from field gas, the fractionation of the liquids into natural gas products, or other operations associated with the processing of natural gas products. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the products.

Reciprocating compressor means a piece of equipment that increases the pressure of a process gas by positive displacement, employing linear movement of the driveshaft.

§ 60.632 Standards.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.482–1 (a), (b), and (d) and 60.482–2 through 60.482–10, except as provided in § 60.633, as soon as practicable, but no later than 180 days after initial startup.

(b) An owner or operator may elect to comply with the requirements of §§ 60.483–1 and 60.483–2.

(c) An owner or operator may apply to the Administrator for permission to use an alternative means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to that achieved by the controls required in this subpart. In doing so, the owner or operator shall comply with requirements of § 60.634 of this subpart.

(d) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of § 60.485 except as provided in § 60.633(f) of this subpart.

(e) Each owner or operator subject to the provisions of this subpart shall comply with the provisions of §§ 60.486 and 60.487 except as provided in §§ 60.633, 60.635, and 60.636 of this subpart.

(f) An owner or operator shall use the following provision instead of § 60.485(d)(1): Each piece of equipment is presumed to be in VOC service or in wet gas service unless an owner or operator demonstrates that the piece of equipment is not in VOC service or in wet gas service. For a piece of equipment to be considered not in VOC service, it must be determined that the VOC content can be reasonably expected never to exceed 10.0 percent by weight. For a piece of equipment to be considered in wet gas service, it must be determined that it contains or contacts the field gas before the extraction step in the process. For purposes of determining the percent VOC content of the process fluid that is contained in or contacts a piece of equipment, procedures that conform to the methods described in ASTM E169–63, 77, or 93, E168–67, 77, or 92, or E260–73, 91, or 96 (incorporated by reference as specified in § 60.17) shall be used.

[50 FR 26124, June 24, 1985, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.633 Exceptions.

(a) Each owner or operator subject to the provisions of this subpart may comply with the following exceptions to the provisions of subpart VV.

(b)(1) Each pressure relief device in gas/vapor service may be monitored quarterly and within 5 days after each pressure release to detect leaks by the methods specified in § 60.485(b) except as provided in § 60.632(c), paragraph (b)(4) of this section, and § 60.482–4 (a) through (c) of subpart VV.

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3)(i) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after it is detected, except as provided in § 60.482–9.

(ii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(4)(i) Any pressure relief device that is located in a nonfractionating plant that is monitored only by nonplant personnel may be monitored after a pressure release the next time the monitoring personnel are on site, instead of within 5 days as specified in paragraph (b)(1) of this section and § 60.482–4(b)(1) of subpart VV.

(ii) No pressure relief device described in paragraph (b)(4)(i) of this section shall be allowed to operate for more than 30 days after a pressure release without monitoring.

(c) Sampling connection systems are exempt from the requirements of § 60.482–5.

(d) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service that are located at a nonfractionating plant that does not have the design capacity to process 283,200 standard cubic meters per day (scmd) (10 million standard cubic feet per day) or more of field gas are exempt from the routine monitoring requirements of §§ 60.482–2(a)(1) and 60.482–7(a), and paragraph (b)(1) of this section.

(e) Pumps in light liquid service, valves in gas/vapor and light liquid service, and pressure relief devices in gas/vapor service within a process unit that is located in the Alaskan North Slope are exempt from the routine monitoring requirements of §§ 60.482–2(a)(1), 60.482–7(a), and paragraph (b)(1) of this section.

(f) Reciprocating compressors in wet gas service are exempt from the compressor control requirements of § 60.482–3.

(g) Flares used to comply with this subpart shall comply with the requirements of § 60.18.

(h) An owner or operator may use the following provisions instead of § 60.485(e):

(1) Equipment is in heavy liquid service if the weight percent evaporated is 10 percent or less at 150 °C (302 °F) as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.17).

(2) Equipment is in light liquid service if the weight percent evaporated is greater than 10 percent at 150 °C (302 °F) as determined by ASTM Method D86–78, 82, 90, 95, or 96 (incorporated by reference as specified in § 60.17).

[50 FR 26124, June 24, 1985, as amended at 51 FR 2702, Jan. 21, 1986; 65 FR 61773, Oct. 17, 2000]

§ 60.634 Alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under any design, equipment, work practice or operational standard, the Administrator will publish, in the FEDERAL REGISTER a notice permitting the use of that alternative means for the purpose of compliance with that standard. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after notice and an opportunity for a public hearing.

(c) The Administrator will consider applications under this section from either owners or operators of affected facilities, or manufacturers of control equipment.

(d) The Administrator will treat applications under this section according to the following criteria, except in cases where he concludes that other criteria are appropriate:

(1) The applicant must collect, verify and submit test data, covering a period of at least 12 months, necessary to support the finding in paragraph (a) of this section.

(2) If the applicant is an owner or operator of an affected facility, he must commit in writing to operate and maintain the alternative means so as to achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved under the design, equipment, work practice or operational standard.

§ 60.635 Recordkeeping requirements.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of paragraphs (b) and (c) of this section in addition to the requirements of § 60.486.

(b) The following recordkeeping requirements shall apply to pressure relief devices subject to the requirements of § 60.633(b)(1) of this subpart.

(1) When each leak is detected as specified in § 60.633(b)(2), a weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment. The identification on the pressure relief device may be removed after it has been repaired.

(2) When each leak is detected as specified in § 60.633(b)(2), the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(i) The instrument and operator identification numbers and the equipment identification number.

(ii) The date the leak was detected and the dates of each attempt to repair the leak.

(iii) Repair methods applied in each attempt to repair the leak.

(iv) ''Above 10,000 ppm'' if the maximum instrument reading measured by the methods specified in paragraph (a) of this section after each repair attempt is 10,000 ppm or greater.

(v) ''Repair delayed'' and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(vi) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(vii) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(viii) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(ix) The date of successful repair of the leak.

(x) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §60.482–4(a). The designation of equipment subject to the provisions of §60.482–4(a) shall be signed by the owner or operator.

(c) An owner or operator shall comply with the following requirement in addition to the requirement of §60.486(j): Information and data used to demonstrate that a reciprocating compressor is in wet gas service to apply for the exemption in §60.633(f) shall be recorded in a log that is kept in a readily accessible location.

§60.636 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of paragraphs (b) and (c) of this section in addition to the requirements of §60.487.

(b) An owner or operator shall include the following information in the initial semiannual report in addition to the information required in §60.487(b) (1)—(4): Number of pressure relief devices subject to the requirements of §60.633(b) except for those pressure relief devices designated for no detectable emissions under the provisions of §60.482–4(a) and those pressure relief devices complying with §60.482–4(c).

(c) An owner or operator shall include the following information in all semiannual reports in addition to the information required in §60.487(c)(2) (i) through (vi):

(1) Number of pressure relief devices for which leaks were detected as required in §60.633(b)(2) and

(2) Number of pressure relief devices for which leaks were not repaired as required in §60.633(b)(3).

Subpart LLL—Standards of Performance for Onshore Natural Gas Processing: SO_2 Emissions

SOURCE: 50 FR 40160, Oct. 1, 1985, unless otherwise noted.

§60.640 Applicability and designation of affected facilities.

(a) The provisions of this subpart are applicable to the following affected facilities that process natural gas: each sweetening unit, and each sweetening unit followed by a sulfur recovery unit.

(b) Facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H_2S) in the acid gas (expressed as sulfur) are required to comply with §60.647(c) but are not required to comply with §§60.642 through 60.646.

(c) The provisions of this subpart are applicable to facilities located on land and include facilities located onshore which process natural gas produced from either onshore or offshore wells.

(d) The provisions of this subpart apply to each affected facility identified in paragraph (a) of this section which commences construction or modification after January 20, 1984.

(e) The provisions of this subpart do not apply to sweetening facilities producing acid gas that is completely reinjected into oil-or-gas-bearing geologic strata or that is otherwise not released to the atmosphere.

§60.641 Definitions.

All terms used in this subpart not defined below are given the meaning in the Act and in subpart A of this part.

Acid gas means a gas stream of hydrogen sulfide (H_2S) and carbon dioxide (CO_2) that has been separated from sour natural gas by a sweetening unit.

Natural gas means a naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface. The principal hydrocarbon constituent is methane.

Onshore means all facilities except those that are located in the territorial seas or on the outercontinental shelf.

Reduced sulfur compounds means H_2S, carbonyl sulfide (COS), and carbon disulfide (CS_2).

Sulfur production rate means the rate of liquid sulfur accumulation from the sulfur recovery unit.

Sulfur recovery unit means a process device that recovers element sulfur from acid gas.

Sweetening unit means a process device that separates the H_2S and CO_2 contents from the sour natural gas stream.

Total SO_2 equivalents means the sum of volumetric or mass concentrations of the sulfur compounds obtained by adding the quantity existing as SO_2 to the quantity of SO_2 that would be obtained if all reduced sulfur compounds were converted to SO_2 (ppmv or kg/dscm (lb/dscf)).

EThe sulfur emission rate expressed as elemental sulfur, kilograms per hour (kg/hr) [pounds per hour (lb/hr)], rounded to one decimal place.

RThe sulfur emission reduction efficiency achieved in percent, carried to one decimal place.

SThe sulfur production rate, kilograms per hour (kg/hr) [pounds per hour (lb/hr)], rounded to one decimal place.

XThe sulfur feed rate from the sweetening unit (i.e., the H_2S in the acid gas), expressed as sulfur, Mg/D(LT/D), rounded to one decimal place.

YThe sulfur content of the acid gas from the sweetening unit, expressed as mole percent H_2S (dry basis) rounded to one decimal place.

ZThe minimum required sulfur dioxide (SO_2) emission reduction efficiency, expressed as percent carried to one decimal place. Z_i refers to the reduction efficiency required at the initial performance test. Z_c refers to the reduction efficiency required on a continuous basis after compliance with Z_i has been demonstrated.

[50 FR 40160, Oct. 1, 1985, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.642 Standards for sulfur dioxide.

(a) During the initial performance test required by § 60.8(b), each owner or operator shall achieve at a minimum, an SO_2 emission reduction efficiency (Z_i) to be determined from Table 1 based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

(b) After demonstrating compliance with the provisions of paragraph (a) of this section, the owner or operator shall achieve at a minimum, an SO_2 emission reduction efficiency (Z_c) to be determined from Table 2 based on the sulfur feed rate (X) and the sulfur content of the acid gas (Y) of the affected facility.

Table 1. REQUIRED MINIMUM INITIAL SO_2 EMISSION REDUCTION EFFICIENCY (Z_i)

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \leq X \leq 5.0$	$5.0 < X \leq 15.0$	$15.0 < X \leq 300.0$	$X > 300.0$
$Y \geq 50$	79.0	. . . . $88.51X^{0.0101}Y^{0.0125}$ . . . . . . or 99.8, whichever is smaller		
$20 \leq Y < 50$	79.0	. . . . $88.51X^{0.0101}Y^{0.0125}$ . . . or 97.9, whichever is smaller		97.9
$10 \leq Y < 20$	79.0	$88.51X^{0.0101}Y^{0.0125}$ or 93.5, whichever is smaller	93.5	93.5
$Y < 10$	79.0	79.0	79.0	79.0

Table 2. REQUIRED MINIMUM SO_2 EMISSION REDUCTION EFFICIENCY (Z_c)

H_2S content of acid gas (Y), %	Sulfur feed rate (X), LT/D			
	$2.0 \leq X \leq 5.0$	$5.0 < X \leq 15.0$	$15.0 < X \leq 300.0$	$X > 300.0$
$Y \geq 50$	74.0	. . . . $85.35X^{0.0144}Y^{0.0128}$ . . . . . . or 99.8, whichever is smaller		
$20 \leq Y < 50$	74.0	. . . . $85.35X^{0.0144}Y^{0.0128}$ . . . or 97.5, whichever is smaller		97.5
$10 \leq Y < 20$	74.0	$85.35X^{0.0144}Y^{0.0128}$ or 90.8, whichever is smaller	90.8	90.8
$Y < 10$	74.0	74.0	74.0	74.0

§ 60.643 Compliance provisions.

(a)(1) To determine compliance with the standards for sulfur dioxide specified in § 60.642(a), during the initial performance test as required by § 60.8, the minimum required sulfur dioxide emission reduction efficiency (Z) is compared to the emission reduction efficiency (R) achieved by the sulfur recovery technology.

(i) If $R \geqq Z_i$, the affected facility is in compliance.

(ii) If $R < Z_i$, the affected facility is not in compliance.

(2) Following the initial determination of compliance as required by § 60.8, any subsequent compliance determinations that may be required by the Administrator would compare R to Z_c.

(b) The emission reduction efficiency (R) achieved by the sulfur reduction technology shall be determined using the procedures in § 60.644(c)(1).

[50 FR 40160, Oct. 1, 1985, as amended at 54 FR 6679, Feb. 14, 1989]

§ 60.644 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in paragraph § 60.8(b).

(b) During a performance test required by § 60.8, the owner or operator shall determine the minimum required reduction efficiencies (Z) of SO_2 emissions as required in § 60.642 (a) and (b) as follows:

(1) The average sulfur feed rate (X) shall be computed as follows:

$$X = KQ_aY$$

Where:

X = average sulfur feed rate, Mg/D (LT/D).

Q_a = average volumetric flow rate of acid gas from sweetening unit, dscm/day (dscf/day).

Y = average H_2S concentration in acid gas feed from sweetening unit, percent by volume, expressed as a decimal.

K = (32 kg S/kg-mole)/((24.04 dscm/kg-mole)(1000 kg S/ Mg)) = 1.331×10^{-3} Mg/dscm, for metric units

= (32 lb S/lb-mole)/((385.36 dscf/lb-mole)(2240 lb S/long ton))

= 3.707×10^{-5} long ton/dscf, for English units.

(2) The continuous readings from the process flowmeter shall be used to determine the average volumetric flow rate (Q_a) in dscm/day (dscf/day) of the acid gas from the sweetening unit for each run.

(3) The Tutwiler procedure in § 60.648 or a chromatographic procedure following ASTM E–260 (incorporated by reference—see § 60.17) shall be used to determine the H_2S concentration in the acid gas feed from the sweetening unit. At least one sample per hour (at equally spaced intervals) shall be taken during each 4-hour run. The arithmetic mean of all samples shall be the average H_2S concentration (Y) on a dry basis for the run. By multiplying the result from the Tutwiler procedure by 1.62×10^{-3}, the units gr/100 scf are converted to volume percent.

(4) Using the information from paragraphs (b) (1) and (3), Tables 1 and 2 shall be used to determine the required initial (Z_i) and continuous (Z_c) reduction efficiencies of SO_2 emissions.

(c) The owner or operator shall determine compliance with the SO_2 standards in § 60.642 (a) or (b) as follows:

(1) The emission reduction efficiency (R) achieved by the sulfur recovery technology shall be computed for each run using the following equation:

$$R=(100\ S)/(S+E)$$

(2) The level indicators or manual soundings shall be used to measure the liquid sulfur accumulation rate in the product storage tanks. Readings taken at the beginning and end of each run, the tank geometry, sulfur density at the storage temperature, and sample duration shall be used to determine the sulfur production rate (S) in kg/hr (lb/hr) for each run.

(3) The emission rate of sulfur shall be computed for each run as follows:

$$E = C_eQ_{sd}/K_1$$

Where:

E = emission rate of sulfur per run, kg/hr.

C_e = concentration of sulfur equivalent (SO_2 + reduced sulfur), g/dscm (lb/dscf).

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

K_1 = conversion factor, 1000 g/kg (7000 gr/lb).

(4) The concentration (C_e) of sulfur equivalent shall be the sum of the SO_2 and TRS concentrations, after being converted to sulfur equivalents. For each run and each of the test methods specified in this paragraph (c) of this section, the sampling time shall be at

least 4 hours. Method 1 shall be used to select the sampling site. The sampling point in the duct shall be at the centroid of the cross-section if the area is less than 5 m^2 (54 ft^2) or at a point no closer to the walls than 1 m (39 in.) if the cross-sectional area is 5 m^2 or more, and the centroid is more than 1 m (39 in.) from the wall.

(i) Method 6 shall be used to determine the SO_2 concentration. Eight samples of 20 minutes each shall be taken at 30-minute intervals. The arithmetic average shall be the concentration for the run. The concentration shall be multiplied by 0.5×10^{-3} to convert the results to sulfur equivalent.

(ii) Method 15 shall be used to determine the TRS concentration from reduction-type devices or where the oxygen content of the effluent gas is less than 1.0 percent by volume. The sampling rate shall be at least 3 liters/min (0.1 ft^3/min) to insure minimum residence time in the sample line. Sixteen samples shall be taken at 15-minute intervals. The arithmetic average of all the samples shall be the concentration for the run. The concentration in ppm reduced sulfur as sulfur shall be multiplied by 1.333×10^{-3} to convert the results to sulfur equivalent.

(iii) Method 16A or 15 shall be used to determine the reduced sulfur concentration from oxidation-type devices or where the oxygen content of the effluent gas is greater than 1.0 percent by volume. Eight samples of 20 minutes each shall be taken at 30-minute intervals. The arithmetic average shall be the concentration for the run. The concentration in ppm reduced sulfur as sulfur shall be multiplied by 1.333×10^{-3} to convert the results to sulfur equivalent.

(iv) Method 2 shall be used to determine the volumetric flow rate of the effluent gas. A velocity traverse shall be conducted at the beginning and end of each run. The arithmetic average of the two measurements shall be used to calculate the volumetric flow rate (Q_{sd}) for the run. For the determination of the effluent gas molecular weight, a single integrated sample over the 4-hour period may be taken and analyzed or grab samples at 1-hour intervals may be taken, analyzed, and averaged. For the moisture content, two samples of at least 0.10 dscm (3.5 dscf) and 10 minutes shall be taken at the beginning of the 4-hour run and near the end of the time period. The arithmetic average of the two runs shall be the moisture content for the run.

(d) To comply with § 60.646(d), the owner or operator shall obtain the information required by using the monitoring devices in paragraph (b) or (c) of this section.

[54 FR 6679, Feb. 14, 1989, as amended at 65 FR 61773, Oct. 17, 2000]

§ 60.645 [Reserved]

§ 60.646 Monitoring of emissions and operations.

(a) The owner or operator subject to the provisions of § 60.642 (a) or (b) shall install, calibrate, maintain, and operate monitoring devices or perform measurements to determine the following operations information on a daily basis:

(1) The accumulation of sulfur product over each 24-hour period: The monitoring method may incorporate the use of an instrument to measure and record the liquid sulfur production rate, or may be a procedure for measuring and recording the sulfur liquid levels in the storage tanks with a level indicator or by manual soundings, with subsequent calculation of the sulfur production rate based on the tank geometry, stored sulfur density, and elapsed time between readings. The method shall be designed to be accurate within ±2 percent of the 24-hour sulfur accumulation.

(2) The H_2S concentration in the acid gas from the sweetening unit for each 24-hour period: At least one sample per 24-hour period shall be collected and analyzed using the method specified in § 60.644(b)(1). The Administrator may require the owner or operator to demonstrate that the H_2S concentration obtained from one or more samples over a 24-hour period is within ±20 percent of the average of 12 samples collected at equally spaced intervals during the 24-hour period. In instances where the H_2S concentration of a single sample is not within ±20 percent of the

average of the 12 equally spaced samples, the Administrator may require a more frequent sampling schedule.

(3) The average acid gas flow rate from the sweetening unit: The owner or operator shall install and operate a monitoring device to continuously measure the flow rate of acid gas. The monitoring device reading shall be recorded at least once per hour during each 24-hour period. The average acid gas flow rate shall be computed from the individual readings.

(4) The sulfur feed rate (X): For each 24-hour period, X shall be computed using the equation in § 60.644(b)(3).

(5) The required sulfur dioxide emission reduction efficiency for the 24-hour period: The sulfur feed rate and the H_2S concentration in the acid gas for the 24-hour period as applicable, shall be used to determine the required reduction efficiency in accordance with the provisions of § 60.642(b).

(b) Where compliance is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device, the owner or operator shall install, calibrate, maintain, and operate monitoring devices and continuous emission monitors as follows:

(1) A continuous monitoring system to measure the total sulfur emission rate (E) of SO_2 in the gases discharged to the atmosphere. The SO_2 emission rate shall be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system shall be set so that the equivalent emission limit of § 60.642(b) will be between 30 percent and 70 percent of the measurement range of the instrument system.

(2) Except as provided in paragraph (b)(3) of this section: A monitoring device to measure the temperature of the gas leaving the combustion zone of the incinerator, if compliance with § 60.642(a) is achieved through the use of an oxidation control system or a reduction control system followed by a continually operated incineration device. The monitoring device shall be certified by the manufacturer to be accurate to within ±1 percent of the temperature being measured. When performance tests are conducted under the provision of § 60.8 to demonstrate compliance with the standards under § 60.642, the temperature of the gas leaving the incinerator combustion zone shall be determined using the monitoring device. If the volumetric ratio of sulfur dioxide to sulfur dioxide plus total reduced sulfur (expressed as SO_2) in the gas leaving the incinerator is $\leqq 0.98$, then temperature monitoring may be used to demonstrate that sulfur dioxide emission monitoring is sufficient to determine total sulfur emissions. At all times during the operation of the facility, the owner or operator shall maintain the average temperature of the gas leaving the combustion zone of the incinerator at or above the appropriate level determined during the most recent performance test to ensure the sulfur compound oxidation criteria are met. Operation at lower average temperatures may be considered by the Administrator to be unacceptable operation and maintenance of the affected facility. The owner or operator may request that the minimum incinerator temperature be reestablished by conducting new performance tests under § 60.8.

(3) Upon promulgation of a performance specification of continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants, the owner or operator may, as an alternative to paragraph (b)(2) of this section, install, calibrate, maintain, and operate a continuous emission monitoring system for total reduced sulfur compounds as required in paragraph (d) of this section in addition to a sulfur dioxide emission monitoring system. The sum of the equivalent sulfur mass emission rates from the two monitoring systems shall be used to compute the total sulfur emission rate (E).

(c) Where compliance is achieved through the use of a reduction control system not followed by a continually operated incineration device, the owner or operator shall install, calibrate, maintain, and operate a continuous monitoring system to measure the emission rate of reduced sulfur compounds as SO_2 equivalent in the gases discharged to the atmosphere. The SO_2 equivalent compound emission rate shall be expressed in terms of equivalent sulfur mass flow rates (kg/hr (lb/hr)). The span of this monitoring system shall be set so that the equivalent emission limit of §60.642(b) will be between 30 and 70 percent of the measurement range of the system. This requirement becomes effective upon promulgation of a performance specification for continuous monitoring systems for total reduced sulfur compounds at sulfur recovery plants.

(d) For those sources required to comply with paragraph (b) or (c) of this section, the average sulfur emission reduction efficiency achieved (R) shall be calculated for each 24-hour clock internal. The 24-hour interval may begin and end at any selected clock time, but must be consistent. The 24-hour average reduction efficiency (R) shall be computed based on the 24-hour average sulfur production rate (S) and sulfur emission rate (E), using the equation in §60.644(c)(1).

(1) Data obtained from the sulfur production rate monitoring device specified in paragraph (a) of this section shall be used to determine S.

(2) Data obtained from the sulfur emission rate monitoring systems specified in paragraphs (b) or (c) of this section shall be used to calculate a 24-hour average for the sulfur emission rate (E). The monitoring system must provide at least one data point in each successive 15-minute interval. At least two data points must be used to calculate each 1-hour average. A minimum of 18 1-hour averages must be used to compute each 24-hour average.

(e) In lieu of complying with (b) or (c) of this section, those sources with a design capacity of less than 152 Mg/D (150 LT/D) of H_2S expressed as sulfur may calculate the sulfur emission reduction efficiency achieved for each 24-hour period by:

$$R = \frac{K_2 S}{X}$$

Where:

R = The sulfur dioxide removal efficiency achieved during the 24-hour period, percent.

K_2 = Conversion factor, 0.02400 Mg/D per kg/hr (0.01071 LT/D per lb/hr).

S = The sulfur production rate during the 24-hour period, kg/hr (lb/hr).

X = The sulfur feed rate in the acid gas, Mg/D (LT/D).

(f) The monitoring devices required in paragraphs (b)(1), (b)(3) and (c) of this section shall be calibrated at least annually according to the manufacturer's specifications, as required by §60.13(b).

(g) The continuous emission monitoring systems required in paragraphs (b)(1), (b)(3), and (c) of this section shall be subject to the emission monitoring requirements of §60.13 of the General Provisions. For conducting the continuous emission monitoring system performance evaluation required by §60.13(c), Performance Specification 2 shall apply, and Method 6 shall be used for systems required by paragraph (b) of this section.

[50 FR 40160, Oct. 1, 1985, as amended at 54 FR 6680, Feb. 14, 1989; 65 FR 61774, Oct. 17, 2000]

§60.647 Recordkeeping and reporting requirements.

(a) Records of the calculations and measurements required in §60.642 (a) and (b) and §60.646 (a) through (g) must be retained for at least 2 years following the date of the measurements by owners and operators subject to this subpart. This requirement is included under §60.7(d) of the General Provisions.

(b) Each owner or operator shall submit a written report of excess emissions to the Administrator semiannually. For the purpose of these reports, excess emissions are defined as:

(1) Any 24-hour period (at consistent intervals) during which the average sulfur emission reduction efficiency (R) is less than the minimum required efficiency (Z).

(2) For any affected facility electing to comply with the provisions of §60.646(b)(2), any 24-hour period during which the average temperature of the gases leaving the combustion zone of an incinerator is less than the appropriate operating temperature as determined during the most recent performance test in accordance with the provisions of §60.646(b)(2). Each 24-hour period must consist of at least 96 temperature measurements equally spaced over the 24 hours.

(c) To certify that a facility is exempt from the control requirements of these standards, each owner or operator of a facility with a design capacity less that 2 LT/D of H_2S in the acid gas (expresssed as sulfur) shall keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 LT/D of H_2S expressed as sulfur.

(d) Each owner or operator who elects to comply with § 60.646(e) shall keep, for the life of the facility, a record demonstrating that the facility's design capacity is less than 150 LT/D of H_2S expressed as sulfur.

(e) The requirements of paragraph (b) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of obligation to comply with paragraph (b) of this section, provided that they comply with the requirements established by the State.

§ 60.648 Optional procedure for measuring hydrogen sulfide in acid gas—Tutwiler Procedure.[1]

(a) When an instantaneous sample is desired and H_2S concentration is ten grains per 1000 cubic foot or more, a 100 ml Tutwiler burette is used. For concentrations less than ten grains, a 500 ml Tutwiler burette and more dilute solutions are used. In principle, this method consists of titrating hydrogen sulfide in a gas sample directly with a standard solution of iodine.

(b) *Apparatus.* (See Figure 1.) A 100 or 500 ml capacity Tutwiler burette, with two-way glass stopcock at bottom and three-way stopcock at top which connect either with inlet tubulature or glass-stoppered cylinder, 10 ml capacity, graduated in 0.1 ml subdivision; rubber tubing connecting burette with leveling bottle.

(c) *Reagents.* (1) Iodine stock solution, 0.1N. Weight 12.7 g iodine, and 20 to 25 g cp potassium iodide for each liter of solution. Dissolve KI in as little water as necessary; dissolve iodine in concentrated KI solution, make up to proper volume, and store in glass-stoppered brown glass bottle.

(2) Standard iodine solution, 1 ml=0.001771 g I. Transfer 33.7 ml of above 0.1N stock solution into a 250 ml volumetric flask; add water to mark and mix well. Then, for 100 ml sample of gas, 1 ml of standard iodine solution is equivalent to 100 grains H_2S per cubic feet of gas.

(3) Starch solution. Rub into a thin paste about one teaspoonful of wheat starch with a little water; pour into about a pint of boiling water; stir; let cool and decant off clear solution. Make fresh solution every few days.

(d) *Procedure.* Fill leveling bulb with starch solution. Raise (L), open cock (G), open (F) to (A), and close (F) when solutions starts to run out of gas inlet. Close (G). Purge gas sampling line and connect with (A). Lower (L) and open (F) and (G). When liquid level is several ml past the 100 ml mark, close (G) and (F), and disconnect sampling tube. Open (G) and bring starch solution to 100 ml mark by raising (L); then close (G). Open (F) momentarily, to bring gas in burette to atmospheric pressure, and close (F). Open (G), bring liquid level down to 10 ml mark by lowering (L). Close (G), clamp rubber tubing near (E) and disconnect it from burette. Rinse graduated cylinder with a standard iodine solution (0.00171 g I per ml); fill cylinder and record reading. Introduce successive small amounts of iodine thru (F); shake well after each addition; continue until a faint permanent blue color is obtained. Record reading; subtract from previous reading, and call difference D.

(e) With every fresh stock of starch solution perform a blank test as follows: introduce fresh starch solution into burette up to 100 ml mark. Close (F) and (G). Lower (L) and open (G). When liquid level reaches the 10 ml mark, close (G). With air in burette, titrate as during a test and up to same end point. Call ml of iodine used C. Then,

Grains H_2S per 100 cubic foot of gas=100 (D—C)

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[1] Gas Engineers Handbook, Fuel Gas Engineering Practices, The Industrial Press, 93 Worth Street, New York, NY, 1966, First Edition, Second Printing, page 6/25 (Docket A–80–20–A, Entry II–I–67).

(f) Greater sensitivity can be attained if a 500 ml capacity Tutwiler burette is used with a more dilute (0.001N) iodine solution. Concentrations less than 1.0 grains per 100 cubic foot can be determined in this way. Usually, the starch-iodine end point is much less distinct, and a blank determination of end point, with H_2S-free gas or air, is required.

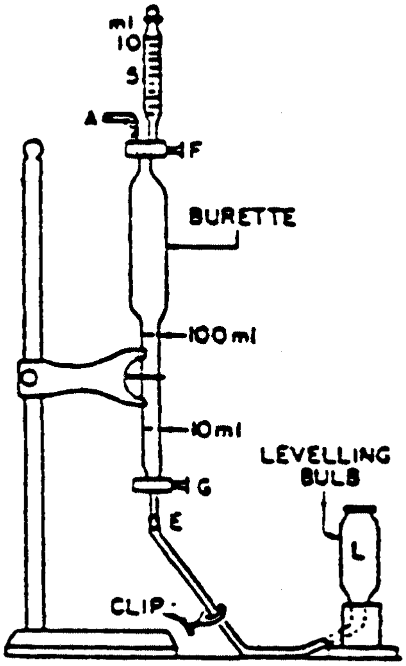

Figure 1. Tutwiler burette (lettered items mentioned in text).

Subpart MMM [Reserved]

Subpart NNN—Standards of Performance for Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations

SOURCE: 55 FR 26942, June 29, 1990, unless otherwise noted.

§60.660 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in §60.667 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c).

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after December 30, 1983:

(1) Each distillation unit not discharging its vent stream into a recovery system.

(2) Each combination of a distillation unit and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more distillation units and the common recovery system into which their vent streams are discharged.

(c) Exemptions from the provisions of paragraph (a) of this section are as follows:

(1) Any distillation unit operating as part of a process unit which produces coal tar or beverage alcohols, or which uses, contains, and produces no VOC is not an affected facility.

(2) Any distillation unit that is subject to the provisions of Subpart DDD is not an affected facility.

(3) Any distillation unit that is designed and operated as a batch operation is not an affected facility.

(4) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§60.662; 60.664 (d), (e), and (f); and 60.665 (h) and (l).

(5) Each affected facility in a process unit with a total design capacity for all chemicals produced within that unit of less than one gigagram per year is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in paragraphs (j), (l)(6), and (n) of §60.665.

(6) Each affected facility operated with a vent stream flow rate less than 0.008 scm/min is exempt from all provisions of this subpart except for the test method and procedure and the recordkeeping and reporting requirements in

§ 60.664(g) and paragraphs (i), (l)(5), and (o) of § 60.665.

(d) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§ 60.662 through 60.665 and 60.668. The provisions of 40 CFR part 65 also satisfy the criteria of paragraphs (c)(4) and (6) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3), with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

[NOTE: The intent of these standards is to minimize the emissions of VOC through the application of best demonstrated technology (BDT). The numerical emission limits in these standards are expressed in terms of total organic compounds (TOC), measured as TOC less methane and ethane. This emission limit reflects the performance of BDT.]

[55 FR 26942, June 29, 2000, as amended at 65 FR 78279, Dec. 14, 2000]

§ 60.661 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

Batch distillation operation means a noncontinuous distillation operation in which a discrete quantity or batch of liquid feed is charged into a distillation unit and distilled at one time. After the initial charging of the liquid feed, no additional liquid is added during the distillation operation.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam.

By compound means by individual stream components, not carbon equivalents.

Continuous recorder means a data recording device recording an instantaneous data value at least once every 15 minutes.

Distillation operation means an operation separating one or more feed stream(s) into two or more exit stream(s), each exit stream having component concentrations different from those in the feed stream(s). The separation is achieved by the redistribution of the components between the liquid and vapor-phase as they approach equilibrium within the distillation unit.

Distillation unit means a device or vessel in which distillation operations occur, including all associated internals (such as trays or packing) and accessories (such as reboiler, condenser, vacuum pump, steam jet, etc.), plus any associated recovery system.

Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.

Flow indicator means a device which indicates whether gas flow is present in a vent stream.

Halogenated vent stream means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

Incinerator means any enclosed combustion device that is used for destroying organic compounds and does not extract energy in the form of steam or process heat.

Process heater means a device that transfers heat liberated by burning fuel to fluids contained in tubes, including all fluids except water that is heated to produce steam.

Process unit means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in § 60.667. A process unit can operate independently if supplied with sufficient fuel or raw materials and sufficient product storage facilities.

Product means any compound or chemical listed in § 60.667 that is produced for sale as a final product as that chemical, or for use in the production of other chemicals or compounds. By-products, co-products, and intermediates are considered to be products.

Recovery device means an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

Recovery system means an individual recovery device or series of such devices applied to the same vent stream.

Total organic compounds (TOC) means those compounds measured according to the procedures in § 60.664(b)(4). For the purposes of measuring molar composition as required in § 60.664(d)(2)(i); hourly emissions rate as required in § 60.664(d)(5) and § 60.664(e); and TOC concentration as required in § 60.665(b)(4) and § 60.665(g)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded. The compounds to be excluded are identified in Environmental Protection Agency's statements on ozone abatement policy for State Implementation Plans (SIP) revisions (42 FR 35314; 44 FR 32042; 45 FR 32424; 45 FR 48942).

TRE index value means a measure of the supplemental total resource requirement per unit reduction of TOC associated with an individual distillation vent stream, based on vent stream flow rate, emission rate of TOC net heating value, and corrosion properties (whether or not the vent stream is halogenated), as quantified by the equation given under § 60.664(e).

Vent stream means any gas stream discharged directly from a distillation facility to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks including, but not limited to, pumps, compressors, and valves.

§ 60.662 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by § 60.8 and § 60.664 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of § 60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of VOC emission control devices.

§ 60.663 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under § 60.662(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder

and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) A flow indicator that provides a record of vent stream flow to the incinerator at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the inlet of each incinerator and before being joined with any other vent stream.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with § 60.662(b) shall install, calibrate, maintain and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as a ultra-violet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow to the flare at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each affected facility at a point closest to the flare and before being joined with any other vent stream.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with § 60.662(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow to the boiler or process heater at least once every hour for each affected facility. The flow indicator shall be installed in the vent stream from each distillation unit within an affected facility at a point closest to the inlet of each boiler or process heater and before being joined with any other vent stream.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) heat input design capacity.

(d) Monitor and record the periods of operation of the boiler or process heater if the design heat input capacity of the boiler or process heater is 44 MW (150 million Btu/hr) or greater. The records must be readily available for inspection.

(e) The owner or operator of an affected facility that seeks to comply with the TRE index value limit specified under § 60.662(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in the recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, and a specific gravity monitoring device having an accuracy of ±0.02 specific gravity units, each equipped with a continuous recorder, or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infrared, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in the recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, or

(ii) An organic monitoring device used to monitor organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device unit in the recovery system:

(i) An integrating steam flow monitoring device having an accuracy of ±10 percent, and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, both equipped with a continuous recorder, or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(f) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under § 60.662 with control devices other than incinerator, boiler, process heater, or flare; or recovery device other than an absorber, condenser, or carbon adsorber shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

[55 FR 26942, June 29, 1990, as amended at 65 FR 61774, Oct. 17, 2000]

§ 60.664 Test methods and procedures.

(a) For the purpose of demonstrating compliance with § 60.662, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in appendix A to this part, except as provided under § 60.8(b), shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under § 60.662(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the gas volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3 shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples, and the samples shall be taken during the same time that the TOC samples are taken.

The TOC concentration corrected to 3 percent 0_2 (C_c) shall be computed using the following equation:

$$C_c = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

where:

C_c=Concentration of TOC corrected to 3 percent O_2, dry basis, ppm by volume.

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$\%O_{2d}$=Concentration of O_2, dry basis, percent by volume.

(4) Method 18 to determine the concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) The sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used then the samples shall be taken at 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, percent by weight.

E_i=Mass rate of TOC entering the control device, kg/hr (lb/hr).

E_o=Mass rate of TOC discharged to the atmosphere, kg/hr (lb/hr).

(iii) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_2\left(\sum_{j=1}^{n} C_{ij}M_{ij}\right)Q_i$$

$$E_O = K_2\left(\sum_{j=1}^{n} C_{oj}M_{oj}\right)Q_O$$

where:

C_{ij}, C_{oj}=Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppm by volume.

M_{ij}, M_{oj}=Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, g/g-mole (lb/lb-mole).

Q_i, Q_o=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/min).

K_2 = 2.494×10^{-6} (1/ppm)(g-mole/scm) (kg/g) (min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.557×10^{-7} (1/ppm) (lb-mole/scf) (min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

(iv) The TOC concentration (C_{TOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

C_j=Concentration of sample components "j", dry basis, ppm by volume.

n=Number of components in the sample.

(c) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek to comply with § 60.662(a), the requirement for an initial performance test is waived, in accordance with § 60.8(b). However, the Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(d) When a flare is used to seek to comply with § 60.662(b), the flare shall comply with the requirements of § 60.18.

(e) The following test methods in appendix A to this part, except as provided under § 60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under § 60.662(b) and for determining the process vent stream TRE index value to determine compliance under § 60.662(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in § 60.664(e)(2) and (3) shall be, except for the situations outlined in paragraph (e)(1)(ii) of this section, prior to the inlet of any control device, prior to any post-distillation dilution of the stream with air, and prior to any post-distillation introduction of halogenated compounds into the process vent stream. No transverse site selection method is needed for vents smaller than 10 centimeters (4 inches) in diameter.

(ii) If any gas stream other than the distillation vent stream from the affected facility is normally conducted through the final recovery device.

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which the nondistillation stream is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any nondistillation vent stream and at the outlet of the final recovery device.

(C) This efficiency is applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of the nondistillation stream to determine the concentration of TOC in the distillation vent stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in § 60.664(e)(4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \left(\sum_{j=1}^{n} C_j H_j \right)$$

where:

H_T = Net heating value of the sample, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F).

K_1 = 1.74×10^{-7} (1/ppm) (g-mole/scm) (MJ/kcal) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.03×10^{-11} (1/ppm) (lb-mole/scf) (Btu/kcal) (English units) where standard temperature for (lb/mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) as indicated in § 60.664(e)(2).

H_j = Net heat of combustion of compound j, kcal/(g-mole) [kcal/(lb-mole)], based on combustion at 25 °C and 760 mm Hg (77 °F and 30 in. Hg).

The heats of combustion of vent stream components would be required to be determined using ASTM D2382–76 (incorporation by reference as specified in § 60.17 of this part) if published values are not available or cannot be calculated.

(5) The emission rate of TOC in the vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2 \left[\sum_{j=1}^{n} C_j M_j \right] Q_s$$

where:

E_{TOC} = Measured emission rate of TOC, kg/hr (lb/hr).

K_2 = $2.494 \text{ x } 10^{-6}$ (1/ppm) (g-mole/scm) (kg/g) (min/hr) (metric units), where standard temperature for (g-mole/scm) is 20 °C.

= 1.557×10^{-7} (1/ppm) (lb-mole/scf) (min/hr) (English units), where standard temperature for (lb-mole/scf) is 68 °F.

C_j = Concentration on a wet basis of compound j in ppm, as measured by Method 18 as indicated in § 60.664(e)(2).

M_j = Molecular weight of sample j, g/g-mole (lb/lb-mole).

Q_s = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

(6) The total process vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(f) For purposes of complying with § 60.662(c) the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in (e)(1) and the flare equation in (e)(2) of this section and selecting the lower of the two values.

(1) The equation for calculating the TRE index value of a vent stream controlled by an incinerator is as follows:

$$\text{TRE} = \frac{1}{E_{TOC}} \left[a + b(Q_s) + c(Q_s)^{0.88} + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5} \right]$$

(i) Where for a vent stream flow rate that is greater than or equal to 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.

Q_s = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

Y_s = Q_s for all vent stream categories listed in Table 1 except for Category E vent streams where $Y_s = Q_sH_T/3.6$.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

a, b, c, d, e, and f are coefficients.

The set of coefficients that apply to a vent stream can be obtained from Table 1.

TABLE 1. DISTILLATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR

DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF $0 \leq$ NET HEATING VALUE (MJ/scm) $<$ 3.5 OR IF $0 <$ NET HEATING VALUE (Btu/scf) $\leq$ 94:

Q_S = Vent Stream Flow rate scm/min (scf/min)	a	b	c	d	e	f
$14.2 \leq Q_S \leq 18.8$	18.84466	0.26742	-0.20044	0	0	0.01025
$(501 \leq Q_S \leq 664)$	(41.54494)	(0.016696)	(-0.019194)	(0)	(0)	(0.003803)
$18.8 < Q_S \leq 699$	19.66658	0.26742	-0.25332	0	0	0.01025
$(664 < Q_S \leq 24{,}700)$	(43.35694)	(0.016696)	(-0.024258)	(0)	(0)	(0.003803)
$699 < Q_S \leq 1400$	39.19213	0.29062	-0.25332	0	0	0.01449
$(24{,}700 < Q_S \leq 49{,}000)$	(86.40297)	(0.018145)	(-0.024258)	(0)	(0)	(0.005376)
$1400 < Q_S \leq 2100$	58.71768	0.30511	-0.25332	0	0	0.01775
$(49{,}000 < Q_S < 74{,}000)$	(129.4490)	(0.019050)	(-0.024258)	(0)	(0)	(0.006585)
$2100 < Q_S \leq 2800$	78.24323	0.31582	-0.25332	0	0	0.02049
$(74{,}000 < Q_S \leq 99{,}000)$	(172.4950)	(0.019718)	(-0.024258)	(0)	(0)	(0.007602)
$2800 < Q_S \leq 3500$	97.76879	0.32439	-0.25332	0	0	0.02291
$(99{,}000 < Q_S \leq 120{,}000)$	(215.5411)	(0.020253)	(-0.024258)	(0)	(0)	(0.008500)

DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE < 3.5 (MJ/scm) OR IF NET HEATING VALUE < 94 (Btu/scf):

Q_s = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_s \leq 18.8$	18.84466	0.26742	-0.20044	0	0	0.01025
$(501 \leq Q_s \leq 664)$	(41.54494)	(0.016696)	(-0.019194)	(0)	(0)	(0.003803)
$18.8 < Q_s \leq 699$	19.66658	0.26742	-0.25332	0	0	0.01025
$(664 < Q_s \leq 24{,}700)$	(43.35694)	(0.016696)	(-0.024258)	(0)	(0)	(0.003803)
$699 < Q_s \leq 1400$	39.19213	0.29062	-0.25332	0	0	0.01449
$(24{,}700 < Q_s \leq 49{,}000)$	(86.40297)	(0.018145)	(-0.024258)	(0)	(0)	(0.005376)
$1400 < Q_s \leq 2100$	58.71768	0.30511	-0.25332	0	0	0.01775
$(49{,}000 < Q_s \leq 74{,}000)$	(129.4490)	(0.019050)	(-0.024258)	(0)	(0)	(0.006585)
$2100 < Q_s \leq 2800$	78.24323	0.31582	-0.25332	0	0	0.02049
$(74{,}000 < Q_s \leq 99{,}000)$	(172.4950)	(0.019718)	(-0.024258)	(0)	(0)	(0.007602)
$2800 < Q_s \leq 3500$	97.76879	0.32439	-0.25332	0	0	0.02291
$(99{,}000 < Q_s \leq 120{,}000)$	(215.5411)	(0.020253)	(-0.024258)	(0)	(0)	(0.008500)

DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0 ≤ NET HEATING VALUE (MJ/scm) ≤ 0.48 OR IF 0 ≤ NET HEATING VALUE (Btu/scf) ≤ 13:

Q_s = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_s \leq 1340$	8.54245	0.10555	0.09030	-0.17109	0	0.01025
$(501 \leq Q_s \leq 47{,}300)$	(18.83268)	(0.0065901)	(0.008647)	(-0.00039762)	(0)	(0.003803)
$1340 < Q_s \leq 2690$	16.94386	0.11470	0.09030	-0.17109	0	0.01449
$(47{,}300 < Q_s \leq 95{,}000)$	(37.35443)	(0.0071614)	(0.008647)	(-0.00039762)	(0)	(0.005376)
$2690 < Q_s \leq 4040$	25.34528	0.12042	0.09030	-0.17109	0	0.01775
$(95{,}000 < Q_s \leq 143{,}000)$	(55.87620)	(0.0075185)	(0.008647)	(-0.00039762)	(0)	(0.006585)

DESIGN CATEGORY C. FOR NONHALOGENTED PROCESS VENT STREAMS, IF 0.48 < NET HEATING VALUE (MJ/scm) ≤ 1.9 OR IF 13 < NET HEATING VALUE (Btu/scf) ≤ 51:

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_S \leq 1340$	9.25233	0.06105	0.31937	-0.16181	0	0.01025
$(501 \leq Q_S \leq 47{,}300)$	(20.39769)	(0.003812)	(0.030582)	(-0.00037605)	(0)	(0.003803)
$1340 < Q_S \leq 2690$	18.36363	0.06635	0.31937	-0.16181	0	0.01449
$(47{,}300 < Q_S \leq 95{,}000)$	(40.48446)	(0.004143)	(0.030582)	(-0.00037605)	(0)	(0.005376)
$2690 < Q_S \leq 4040$	27.47492	0.06965	0.31937	-0.16181	0	0.01775
$(95{,}000 < Q_S \leq 143{,}000)$	(60.57121)	(0.004349)	(0.030582)	(-0.00037605)	(0)	(0.006585)

DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9 < NET HEATING VALUE (MJ/scm) ≤ 3.6 OR IF 51 < NET HEATING VALUE (Btu/scf) ≤ 97:

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Q_S \leq 1180$	6.67868	0.06943	0.02582	0	0	0.01025
$(501 \leq Q_S \leq 41{,}700)$	(14.72382)	(0.004335)	(0.002472)	(0)	(0)	(0.003803)
$1180 < Q_S \leq 2370$	13.21633	0.07546	0.02582	0	0	0.01449
$(41{,}700 < Q_S \leq 83{,}700)$	(29.13672)	(0.004711)	(0.002472)	(0)	(0)	(0.005376)
$2370 < Q_S \leq 3550$	19.75398	0.07922	0.02582	0	0	0.01775
$(83{,}700 < Q_S \leq 125{,}000)$	(43.54962)	(0.004946)	(0.002472)	(0)	(0)	(0.006585)

DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE > 3.6 MJ/scm OR IF NET HEATING VALUE > 97 (Btu/scf):

Q_S = Vent Stream Flow rate scm/min(scf/min)	a	b	c	d	e	f
$14.2 \leq Y_S \leq 1180$	6.67868	0	0	-0.00707	0.02220	0.01025
$(501 \leq Y_S \leq 41{,}700)$	(14.72382)	(0)	(0)	(-0.0000164)	(0.0001174)	(0.003803)
$1180 < Y_S \leq 2370$	13.21633	0	0	-0.00707	0.02412	0.01449
$(41{,}700 < Y_S \leq 83{,}700)$	(29.13672)	(0)	(0)	(-0.0000164)	(0.0001276)	(0.005376)
$2370 < Y_S \leq 3550$	19.75398	0	0	-0.00707	0.02533	0.01775
$(83{,}700 < Y_S \leq 125{,}000)$	(43.54962)	(0)	(0)	(-0.0000164)	(0.0001340)	(0.006585)

(ii) Where for a vent stream flow rate that is less than 14.2 scm/min (501 scf/min) at a standard temperature of 20 °C (68 °F):

TRE = TRE index value.

Q_s = 14.2 scm/min (501 scf/min).

H_T = (FLOW) (HVAL)/Q_s.

Where the following inputs are used:

FLOW = Vent stream flow rate, scm/min (scf/min), at a temperature of 20 °C (68 °F).

HVAL = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.

Y_s = Q_s for all vent stream categories listed in Table 1 except for Category E vent streams where $Y_s = Q_sH_T/3.6$.

E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).

a, b, c, d, e, and f are coefficients

The set of coefficients that apply to a vent stream can be obtained from Table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$TRE = \frac{1}{E_{TOC}}\left[a(Q_s) + b(Q_s)^{0.8} + c(Q_s)(H_T) + d(E_{TOC}) + e\right]$$

where:

TRE = TRE index value.
E_{TOC} = Hourly emissions of TOC, kg/hr (lb/hr).
Q_s = Vent stream flow rate, scm/min (scf/min), at a standard temperature of 20 °C (68 °F).
H_T = Vent stream net heating value, MJ/scm (Btu/scf), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg (68 °F and 30 in. Hg), but the standard temperature for determining the volume corresponding to one mole is 20 °C (68 °F) as in the definition of Q_s.
a, b, c, d, and e are coefficients.

The set of coefficients that apply to a vent stream shall be obtained from Table 2.

TABLE 2.—DISTILLATION NSPS TRE COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE

	a	b	c	d	e
H_T < 11.2 MJ/scm	2.25	0.288	−0.193	−0.0051	2.08
(H_T < 301 Btu/scf)	(0.140)	(0.0367)	(−0.000448)	(−0.0051)	(4.59)
H_T ≥ 11.2 MJ/scm	0.309	0.0619	−0.0043	−0.0034	2.08
(H_T ≥ 301 Btu/scf)	(0.0193)	(0.00788)	(−0.0000010)	(−0.0034)	(4.59)

(g) Each owner or operator of an affected facility seeking to comply with § 60.660(c)(4) or § 60.662(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Examples of process changes include changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change to the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by § 60.664 in order to determine compliance with § 60.662(a). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the initial TRE index value is greater than 8.0 and the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with §§ 60.8 and 60.664 and shall comply with §§ 60.663, 60.664 and 60.665. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(h) Any owner or operator subject to the provisions of this subpart seeking to demonstrate compliance with § 60.660(c)(6) shall use Method 2, 2A, 2C, or 2D as appropriate, for determination of volumetric flow rate.

[55 FR 26942, June 29, 1990, as amended at 65 FR 61774, Oct. 17, 2000]

§ 60.665 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.662 shall notify the Administrator of the specific provisions of § 60.662 (§ 60.662 (a), (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.662 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by § 60.664 within 180 days.

(b) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily accessible record of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under § 60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to comply with § 60.662(a), a report containing performance test data need not be submitted, but a report containing the information in § 60.665(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a control device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in § 60.664(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in § 60.664(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(b) through use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.662(c):

(i) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature, of the absorbing liquid measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted), or

(ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is routed and constituted normally, or

(iii) Where a carbon adsorber is the final recovery device in the recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration (and within 15 minutes of completion of any cooling cycle(s)), and duration of the carbon bed steaming cycle (all measured while the vent stream is routed and constituted normally), or

(iv) As an alternative to § 60.665(b)(4) ((i), (ii) or (iii), the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber, measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under § 60.663 (a) and (c) as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where a combustion device is used to comply with § 60.662(a), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) For thermal incinerators, all 3-hour periods of operation during which the average combustion temperature was more than 28 ° C (50 ° F) below the average combustion temperature during the most recent performance test at which compliance with § 60.662(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which the average temperature of the vent stream immediately before the catalyst bed is more than 28 ° C (50 ° F) below the average temperature of the vent stream during the most recent performance test at which compliance with § 60.662(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the device during the most recent performance test at which compliance with § 60.662(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 ° C (50 ° F) below the average combustion temperature during the most recent performance test at which compliance with § 60.662(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr).

(4) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under § 60.662(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep up to date, readily accessible continuous records of the flow indication specified under § 60.663(a)(2), § 60.663(b)(2) and § 60.663(c)(1), as well as up-to-date, readily accessible records of all periods when the vent stream is diverted from the control device or has no flow rate.

(e) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater to comply with § 60.662(a) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State or Federal regulatory requirements.)

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified under § 60.663(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(g) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under § 60.663(e), as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where an owner or operator seeks to comply with § 60.662(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system,

and where an organic compound monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final recovery device in a system, and where an organic compound monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (1 1 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a system, and where an organic compound monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent greater than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and where an organic compound monitoring device is used, all 3-hour periods of operation during which the average organic compound concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(h) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.662(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or a distillation unit;

(2) Any recalculation of the TRE index value performed pursuant to § 60.664(f); and

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.664(d).

(i) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the flow rate cutoff in § 60.660(c)(6) shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.008 scm/min (0.3 scf/min) and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(j) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in § 60.660(c)(5) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located.

(k) Each owner and operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in § 60.7(c) of the General Provisions.

(l) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.660 (c)(4), (c)(5), or (c)(6) or § 60.662 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within

6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under § 60.665 (c) and (g).

(2) All periods recorded under § 60.665(d) when the vent stream is diverted from the control device or has no flow rate.

(3) All periods recorded under § 60.665(e) when the boiler or process heater was not operating.

(4) All periods recorded under § 60.665(f) in which the pilot flame of the flare was absent.

(5) Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in § 60.660(c)(6), including a measurement of the new vent stream flow rate, as recorded under § 60.665(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed with the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and $E_{TOC.}$ The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under the low capacity exemption status in § 60.660(c)(5), the facility must begin compliance with the requirements set forth in § 60.662.

(6) Any change in equipment or process operation, as recorded under paragraph (j) of this section, that increases the design production capacity above the low capacity exemption level in § 60.660(c)(5) and the new capacity resulting from the change for the distillation process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and $E_{TOC.}$ The performance test is subject to the requirements of § 60.8. The facility must begin compliance with the requirements set forth in § 60.660(d) or § 60.662. If the facility chooses to comply with § 60.662, the facility may qualify for an exemption in § 60.660(c)(4) or (6).

(7) Any recalculation of the TRE index value, as recorded under § 60.665(h).

(m) The requirements of § 60.665(l) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with § 60.665(l), provided that they comply with the requirements established by the State.

(n) Each owner or operator that seeks to demonstrate compliance with § 60.660(c)(5) must submit to the Administrator an initial report detailing the design production capacity of the process unit.

(o) Each owner or operator that seeks to demonstrate compliance with § 60.660(c)(6) must submit to the Administrator an initial report including a flow rate measurement using the test methods specified in § 60.664.

(p) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under § 60.662 other than as provided under § 60.663(a), (b), (c) and (d).

[55 FR 26922, June 29, 1990; 55 FR 36932, Sept. 7, 1990, as amended at 60 FR 58237, Nov. 27, 1995; 65 FR 61778, Oct. 17, 2000; 65 FR 78279, Dec. 14, 2000]

§ 60.666 Reconstruction.

For purposes of this subpart ''fixed capital cost of the new components,'' as used in § 60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following December 30, 1983. For purposes of this paragraph, ''commenced'' means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.667 Chemicals affected by subpart NNN.

Chemical name	CAS No.*
Acetaldehyde	75–07–0
Acetaldol	107–89–1
Acetic acid	64–19–7
Acetic anhydride	108–24–7
Acetone	67–64–1
Acetone cyanohydrin	75–86–5
Acetylene	74–86–2
Acrylic acid	79–10–7
Acrylonitrile	107–13–1
Adipic acid	124–04–9
Adiponitrile	111–69–3
Alcohols, C–11 or lower, mixtures	
Alcohols, C–12 or higher, mixtures	
Allyl chloride	107–05–1
Amylene	513–35–9
Amylenes, mixed	
Aniline	62–53–3
Benzene	71–43–2
Benzenesulfonic acid	98–11–3
Benzenesulfonic acid $C_{10\text{-}16}$-alkyl derivatives, sodium salts	68081–81–2
Benzoic acid, tech	65–85–0
Benzyl chloride	100–44–7
Biphenyl	92–52–4
Bisphenol A	80–05–7
Brometone	76–08–4
1,3-Butadiene	106–99–0
Butadiene and butene fractions	
n-Butane	106–97–8
1,4-Butanediol	110–63–4
Butanes, mixed	
1-Butene	106–98–9
2-Butene	25167–67–3
Butenes, mixed	
n-Butyl acetate	123–86–4
Butyl acrylate	141–32–2
n-Butyl alcohol	71–36–3
sec-Butyl alcohol	78–92–2
tert-Butyl alcohol	75–65–0
Butylbenzyl phthalate	85–68–7
Butylene glycol	107–88–0
tert-Butyl hydroperoxide	75–91–2
2-Butyne-1,4-diol	110–65–6
Butyraldehyde	123–72–8
Butyric anhydride	106–31–0
Caprolactam	105–60–2
Carbon disulfide	75–15–0
Carbon tetrabromide	558–13–4
Carbon tetrachloride	56–23–5
Chlorobenzene	108–90–7
2-Chloro-4-(ethylamino)-6-(isopropylamino)-s-triazine	1912–24–9
Chloroform	67–66–3
p-Chloronitrobenzene	100–00–5
Chloroprene	126–99–8
Citric acid	77–92–9
Crotonaldehyde	4170–30–0
Crotonic acid	3724–65–0
Cumene	98–82–8
Cumene hydroperoxide	80–15–9
Cyanuric chloride	108–77–0
Cyclohexane	110–82–7
Cyclohexane, oxidized	68512–15–2
Cyclohexanol	108–93–0
Cyclohexanone	108–94–1
Cyclohexanone oxime	100–64–1
Cyclohexene	110–83–8
1,3-Cyclopentadiene	542–92–7
Cyclopropane	75–19–4
Diacetone alcohol	123–42–2
Dibutanized aromatic concentrate	
1,4-Dichlorobutene	110–57–6
3,4-Dichloro-1-butene	64037–54–3
Dichlorodifluoromethane	75–71–8
Dichlorodimethylsilane	75–78–5
Dichlorofluoromethane	75–43–4
-Dichlorohydrin	96–23–1
Diethanolamine	111–42–2
Diethylbenzene	25340–17–4
Diethylene glycol	111–46–6
Di-n-heptyl-n-nonyl undecyl phthalate	85–68–7
Di-isodecyl phthalate	26761–40–0
Diisononyl phthalate	28553–12–0
Dimethylamine	124–40–3
Dimethyl terephthalate	120–61–6
2,4-Dinitrotoluene	121–14–2
2,4-(and 2,6)-dinitrotoluene	121–14–2 606–20–2
Dioctyl phthalate	117–81–7
Dodecene	25378–22–7
Dodecylbenzene, non linear	
Dodecylbenzenesulfonic acid	27176–87–0
Dodecylbenzenesulfonic acid, sodium salt	25155–30–0
Epichlorohydrin	106–89–8
Ethanol	64–17–5
Ethanolamine	141–43–5
Ethyl acetate	141–78–6
Ethyl acrylate	140–88–5
Ethylbenzene	100–41–4
Ethyl chloride	75–00–3
Ethyl cyanide	107–12–0
Ethylene	74–85–1
Ethylene dibromide	106–93–4
Ethylene dichloride	107–06–2
Ethylene glycol	107–21–1
Ethylene glycol monobutyl	111–76–2
Ethylene glycol monoethyl ether	110–80–5
Ethylene glycol monoethyl ether acetate	111–15–9
Ethylene glycol monomethyl ether	109–86–4
Ethylene oxide	75–21–8
2-Ethylhexanal	26266–68–2
2-Ethylhexyl alcohol	104–76–7
(2-Ethylhexyl) amine	104–75–6
Ethylmethylbenzene	25550–14–5
6-Ethyl-1,2,3,4-tetrahydro 9,10-anthracenedione	15547–17–8
Formaldehyde	50–00–0
Glycerol	56–81–5
n-Heptane	142–82–5
Heptenes (mixed)	
Hexadecyl chloride	
Hexamethylene diamine	124–09–4
Hexamethylene diamine adipate	3323–53–3
Hexamethylenetetramine	100–97–0
Hexane	110–54–3
2-Hexenedinitrile	13042–02–9
3-Hexenedinitrile	1119–85–3
Hydrogen cyanide	74–90–8
Isobutane	75–28–5
Isobutanol	78–83–1
Isobutylene	115–11–7
Isobutyraldehyde	78–84–2
Isodecyl alcohol	25339–17–7
Isooctyl alcohol	26952–21–6
Isopentane	78–78–4
Isophthalic acid	121–91–5
Isoprene	78–79–5
Isopropanol	67–63–0
Ketene	463–51–4
Linear alcohols, ethoxylated, mixed	

Chemical name	CAS No.*
Linear alcohols, ethoxylated, and sulfated, sodium salt, mixed	
Linear alcohols, sulfated, sodium salt, mixed	
Linear alkylbenzene	123–01–3
Magnesium acetate	142–72–3
Maleic anhydride	108–31–6
Melamine	108–78–1
Mesityl oxide	141–79–7
Methacrylonitrile	126–98–7
Methanol	67–56–1
Methylamine	74–89–5
ar-Methylbenzenediamine	25376–45–8
Methyl chloride	74–87–3
Methylene chloride	75–09–2
Methyl ethyl ketone	78–93–3
Methyl iodide	74–88–4
Methyl isobutyl ketone	108–10–1
Methyl methacrylate	80–62–6
2-Methylpentane	107–83–5
1-Methyl-2-pyrrolidone	872–50–4
Methyl tert-butyl ether	
Naphthalene	91–20–3
Nitrobenzene	98–95–3
1-Nonene	27215–95–8
Nonyl alcohol	143–08–8
Nonylphenol	25154–52–3
Nonylphenol, ethoxylated	9016–45–9
Octene	25377–83–7
Oil-soluble petroleum sulfonate, calcium salt	
Oil-soluble petroleum sulfonate, sodium salt	
Pentaerythritol	115–77–5
n-Pentane	109–66–0
3-Pentenenitrile	4635–87–4
Pentenes, mixed	109–67–1
Perchloroethylene	127–18–4
Phenol	108–95–2
1-Phenylethyl hydroperoxide	3071–32–7
Phenylpropane	103–65–1
Phosgene	75–44–5
Phthalic anhydride	85–44–9
Propane	74–98–6
Propionaldehyde	123–38–6
Propionic acid	79–09–4
Propyl alcohol	71–23–8
Propylene	115–07–1
Propylene chlorohydrin	78–89–7
Propylene glycol	57–55–6
Propylene oxide	75–56–9
Sodium cyanide	143–33–9
Sorbitol	50–70–4
Styrene	100–42–5
Terephthalic acid	100–21–0
1,1,2,2-Tetrachloroethane	79–34–5
Tetraethyl lead	78–00–2
Tetrahydrofuran	109–99–9
Tetra (methyl-ethyl) lead	
Tetramethyl lead	75–74–1
Toluene	108–88–3
Toluene-2,4-diamine	95–80–7
Toluene-2,4-(and, 2,6)-diisocyanate (80/20 mixture)	26471–62–5
Tribromomethane	75–25–2
1,1,1-Trichloroethane	71–55–6
1,1,2-Trichloroethane	79–00–5
Trichloroethylene	79–01–6
Trichlorofluoromethane	75–69–4
1,1,2-Trichloro-1,2,2-trifluoroethane	76–13–1
Triethanolamine	102–71–6
Triethylene glycol	112–27–6
Vinyl acetate	108–05–4
Vinyl chloride	75–01–4
Vinylidene chloride	75–35–4
m-Xylene	108–38–3
o-Xylene	95–47–6
p-Xylene	106–42–3
Xylenes (mixed)	1330–20–7
m-Xylenol	576–26–1

*CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[55 FR 26942, June 29, 1990, as amended at 60 FR 58237, 58238, Nov. 27, 1995]

§60.668 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under §111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §60.663(e).

Subpart OOO—Standards of Performance for Nonmetallic Mineral Processing Plants

SOURCE: 51 FR 31337, Aug. 1, 1985, unless otherwise noted.

§60.670 Applicability and designation of affected facility.

(a)(1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station. Also, crushers and grinding mills at hot mix asphalt facilities that reduce the size of nonmetallic minerals embedded in recycled asphalt pavement and subsequent affected facilities up to, but not including, the first storage silo or bin are subject to the provisions of this subpart.

(2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; and stand-alone screening operations at plants without crushers or grinding mills.

(b) An affected facility that is subject to the provisions of subpart F or I or that follows in the plant process any facility subject to the provisions of subparts F or I of this part is not subject to the provisions of this subpart.

(c) Facilities at the following plants are not subject to the provisions of this subpart:

(1) Fixed sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 23 megagrams per hour (25 tons per hour) or less;

(2) Portable sand and gravel plants and crushed stone plants with capacities, as defined in § 60.671, of 136 megagrams per hour (150 tons per hour) or less; and

(3) Common clay plants and pumice plants with capacities, as defined in § 60.671, of 9 megagrams per hour (10 tons per hour) or less.

(d)(1) When an existing facility is replaced by a piece of equipment of equal or smaller size, as defined in § 60.671, having the same function as the existing facility, the new facility is exempt from the provisions of §§ 60.672, 60.674, and 60.675 except as provided for in paragraph (d)(3) of this section.

(2) An owner or operator complying with paragraph (d)(1) of this section shall submit the information required in § 60.676(a).

(3) An owner or operator replacing all existing facilities in a production line with new facilities does not qualify for the exemption described in paragraph (d)(1) of this section and must comply with the provisions of §§ 60.672, 60.674 and 60.675.

(e) An affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after August 31, 1983 is subject to the requirements of this part.

(f) Table 1 of this subpart specifies the provisions of subpart A of this part 60 that apply and those that do not apply to owners and operators of affected facilities subject to this subpart.

TABLE 1—APPLICABILITY OF SUBPART A TO SUBPART OOO

Subpart A reference	Applies to Subpart OOO	Comment
60.1, Applicability	Yes.	
60.2, Definitions	Yes.	
60.3, Units and abbreviations	Yes.	
60.4, Address:		
(a)	Yes.	
(b)	Yes.	
60.5, Determination of construction or modification.	Yes.	
60.6, Review of plans	Yes.	
60.7, Notification and recordkeeping	Yes	Except in (a)(2) report of anticipated date of initial startup is not required (§ 60.676(h)).
60.8, Performance tests	Yes	Except in (d), after 30 days notice for an initially scheduled performance test, any rescheduled performance test requires 7 days notice, not 30 days (§ 60.675(g)).
60.9, Availability of information	Yes.	
60.10, State authority	Yes.	
60.11, Compliance with standards and maintenance requirements.	Yes	Except in (b) under certain conditions (§§ 60.675 (c)(3) and (c)(4)), Method 9 observation may be reduced from 3 hours to 1 hour. Some affected facilities exempted from Method 9 tests (§ 60.675(h)).
60.12, Circumvention	Yes.	
60.13, Monitoring requirements	Yes.	
60.14, Modification	Yes.	
60.15, Reconstruction	Yes.	
60.16, Priority list	Yes.	
60.17, Incorporations by reference	Yes.	
60.18, General control device	No	Flares will not be used to comply with the emission limits.
60.19, General notification and reporting requirements.	Yes.	

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997]

§ 60.671 Definitions.

All terms used in this subpart, but not specifically defined in this section, shall have the meaning given them in the Act and in subpart A of this part.

Bagging operation means the mechanical process by which bags are filled with nonmetallic minerals.

Belt conveyor means a conveying device that transports material from one location to another by means of an endless belt that is carried on a series of idlers and routed around a pulley at each end.

Bucket elevator means a conveying device of nonmetallic minerals consisting of a head and foot assembly which supports and drives an endless single or double strand chain or belt to which buckets are attached.

Building means any frame structure with a roof.

Capacity means the cumulative rated capacity of all initial crushers that are part of the plant.

Capture system means the equipment (including enclosures, hoods, ducts, fans, dampers, etc.) used to capture and transport particulate matter generated by one or more process operations to a control device.

Control device means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more process operations at a nonmetallic mineral processing plant.

Conveying system means a device for transporting materials from one piece of equipment or location to another location within a plant. Conveying systems include but are not limited to the following: Feeders, belt conveyors, bucket elevators and pneumatic systems.

Crusher means a machine used to crush any nonmetallic minerals, and includes, but is not limited to, the following types: jaw, gyratory, cone, roll, rod mill, hammermill, and impactor.

Enclosed truck or railcar loading station means that portion of a nonmetallic mineral processing plant where nonmetallic minerals are loaded by an enclosed conveying system into enclosed trucks or railcars.

Fixed plant means any nonmetallic mineral processing plant at which the processing equipment specified in § 60.670(a) is attached by a cable, chain, turnbuckle, bolt or other means (except electrical connections) to any anchor, slab, or structure including bedrock.

Fugitive emission means particulate matter that is not collected by a capture system and is released to the atmosphere at the point of generation.

Grinding mill means a machine used for the wet or dry fine crushing of any nonmetallic mineral. Grinding mills include, but are not limited to, the following types: hammer, roller, rod, pebble and ball, and fluid energy. The grinding mill includes the air conveying system, air separator, or air classifier, where such systems are used.

Initial crusher means any crusher into which nonmetallic minerals can be fed without prior crushing in the plant.

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals:

(a) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.

(b) Sand and Gravel.

(c) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.

(d) Rock Salt.

(e) Gypsum.

(f) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.

(g) Pumice.

(h) Gilsonite.

(i) Talc and Pyrophyllite.

(j) Boron, including Borax, Kernite, and Colemanite.

(k) Barite.

(l) Fluorospar.

(m) Feldspar.

(n) Diatomite.

(o) Perlite.

(p) Vermiculite.

(q) Mica.

(r) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals except as provided in § 60.670 (b) and (c).

Portable plant means any nonmetallic mineral processing plant that is mounted on any chassis or skids and may be moved by the application of a lifting or pulling force. In addition, there shall be no cable, chain, turnbuckle, bolt or other means (except electrical connections) by which any piece of equipment is attached or clamped to any anchor, slab, or structure, including bedrock that must be removed prior to the application of a lifting or pulling force for the purpose of transporting the unit.

Production line means all affected facilities (crushers, grinding mills, screening operations, bucket elevators, belt conveyors, bagging operations, storage bins, and enclosed truck and railcar loading stations) which are directly connected or are connected together by a conveying system.

Screening operation means a device for separating material according to size by passing undersize material through one or more mesh surfaces (screens) in series, and retaining oversize material on the mesh surfaces (screens).

Size means the rated capacity in tons per hour of a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station; the total surface area of the top screen of a screening operation; the width of a conveyor belt; and the rated capacity in tons of a storage bin.

Stack emission means the particulate matter that is released to the atmosphere from a capture system.

Storage bin means a facility for storage (including surge bins) or nonmetallic minerals prior to further processing or loading.

Transfer point means a point in a conveying operation where the nonmetallic mineral is transferred to or from a belt conveyor except where the nonmetallic mineral is being transferred to a stockpile.

Truck dumping means the unloading of nonmetallic minerals from movable vehicles designed to transport nonmetallic minerals from one location to another. Movable vehicles include but are not limited to: trucks, front end loaders, skip hoists, and railcars.

Vent means an opening through which there is mechanically induced air flow for the purpose of exhausting from a building air carrying particulate matter emissions from one or more affected facilities.

Wet mining operation means a mining or dredging operation designed and operated to extract any nonmetallic mineral regulated under this subpart from deposits existing at or below the water table, where the nonmetallic mineral is saturated with water.

Wet screening operation means a screening operation at a nonmetallic mineral processing plant which removes unwanted material or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water.

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997]

§ 60.672 Standard for particulate matter.

(a) On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any stack emissions which:

(1) Contain particulate matter in excess of 0.05 g/dscm (0.022 gr/dscf); and

(2) Exhibit greater than 7 percent opacity, unless the stack emissions are discharged from an affected facility using a wet scrubbing control device. Facilities using a wet scrubber must comply with the reporting provisions of § 60.676 (c), (d), and (e).

(b) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.11 of this part, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any transfer point on belt conveyors or from any other affected facility any fugitive emissions which exhibit greater than 10 percent opacity, except as provided in paragraphs (c), (d), and (e) of this section.

(c) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any crusher, at which a capture system is not used, fugitive emissions which exhibit greater than 15 percent opacity.

(d) Truck dumping of nonmetallic minerals into any screening operation, feed hopper, or crusher is exempt from the requirements of this section.

(e) If any transfer point on a conveyor belt or any other affected facility is enclosed in a building, then each enclosed affected facility must comply with the emission limits in paragraphs (a), (b) and (c) of this section, or the building enclosing the affected facility or facilities must comply with the following emission limits:

(1) No owner or operator shall cause to be discharged into the atmosphere from any building enclosing any transfer point on a conveyor belt or any other affected facility any visible fugitive emissions except emissions from a vent as defined in § 60.671.

(2) No owner or operator shall cause to be discharged into the atmosphere from any vent of any building enclosing any transfer point on a conveyor belt or any other affected facility emissions which exceed the stack emissions limits in paragraph (a) of this section.

(f) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup as required under § 60.11 of this part, no owner or operator shall cause to be discharged into the atmosphere from any baghouse that controls emissions from only an individual, enclosed storage bin, stack emissions which exhibit greater than 7 percent opacity.

(g) Owners or operators of multiple storage bins with combined stack emissions shall comply with the emission limits in paragraph (a)(1) and (a)(2) of this section.

(h) On and after the sixtieth day after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup, no owner or operator shall cause to be discharged into the atmosphere any visible emissions from:

(1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to the next crusher, grinding mill or storage bin.

(2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, where such screening operations, bucket elevators, and belt conveyors process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

[51 FR 31337, Aug. 1, 1985, as amended at 62 FR 31359, June 9, 1997; 65 FR 61778, Oct. 17, 2000]

§ 60.673 Reconstruction.

(a) The cost of replacement of ore-contact surfaces on processing equipment shall not be considered in calculating either the ‘‘fixed capital cost of the new components’’ or the ‘‘fixed capital cost that would be required to construct a comparable new facility’’ under § 60.15. Ore-contact surfaces are crushing surfaces; screen meshes, bars, and plates; conveyor belts; and elevator buckets.

(b) Under § 60.15, the ‘‘fixed capital cost of the new components’’ includes the fixed capital cost of all depreciable components (except components specified in paragraph (a) of this section) which are or will be replaced pursuant to all continuous programs of component replacement commenced within any 2-year period following August 31, 1983.

§ 60.674 Monitoring of operations.

The owner or operator of any affected facility subject to the provisions of this subpart which uses a wet scrubber to control emissions shall install, calibrate, maintain and operate the following monitoring devices:

(a) A device for the continuous measurement of the pressure loss of the gas stream through the scrubber. The monitoring device must be certified by the manufacturer to be accurate within ±250 pascals ±1 inch water gauge pressure and must be calibrated on an annual basis in accordance with manufacturer's instructions.

(b) A device for the continuous measurement of the scrubbing liquid flow rate to the wet scrubber. The monitoring device must be certified by the manufacturer to be accurate within ±5 percent of design scrubbing liquid flow rate and must be calibrated on an annual basis in accordance with manufacturer's instructions.

§ 60.675 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b). Acceptable alternative methods and procedures are given in paragraph (e) of this section.

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.672(a) as follows:

(1) Method 5 or Method 17 shall be used to determine the particulate matter concentration. The sample volume shall be at least 1.70 dscm (60 dscf). For Method 5, if the gas stream being sampled is at ambient temperature, the sampling probe and filter may be operated without heaters. If the gas stream is above ambient temperature, the sampling probe and filter may be operated at a temperature high enough, but no higher than 121 °C (250 °F), to prevent water condensation on the filter.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity.

(c)(1) In determining compliance with the particulate matter standards in § 60.672 (b) and (c), the owner or operator shall use Method 9 and the procedures in § 60.11, with the following additions:

(i) The minimum distance between the observer and the emission source shall be 4.57 meters (15 feet).

(ii) The observer shall, when possible, select a position that minimizes interference from other fugitive emission sources (e.g., road dust). The required observer position relative to the sun (Method 9, Section 2.1) must be followed.

(iii) For affected facilities using wet dust suppression for particulate matter control, a visible mist is sometimes generated by the spray. The water mist must not be confused with particulate matter emissions and is not to be considered a visible emission. When a water mist of this nature is present, the observation of emissions is to be made at a point in the plume where the mist is no longer visible.

(2) In determining compliance with the opacity of stack emissions from any baghouse that controls emissions only from an individual enclosed storage bin under § 60.672(f) of this subpart, using Method 9, the duration of the Method 9 observations shall be 1 hour (ten 6-minute averages).

(3) When determining compliance with the fugitive emissions standard for any affected facility described under § 60.672(b) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:

(i) There are no individual readings greater than 10 percent opacity; and

(ii) There are no more than 3 readings of 10 percent for the 1-hour period.

(4) When determining compliance with the fugitive emissions standard for any crusher at which a capture system is not used as described under § 60.672(c) of this subpart, the duration of the Method 9 observations may be reduced from 3 hours (thirty 6-minute averages) to 1 hour (ten 6-minute averages) only if the following conditions apply:

(i) There are no individual readings greater than 15 percent opacity; and

(ii) There are no more than 3 readings of 15 percent for the 1-hour period.

(d) In determining compliance with § 60.672(e), the owner or operator shall use Method 22 to determine fugitive emissions. The performance test shall be conducted while all affected facilities inside the building are operating. The performance test for each building shall be at least 75 minutes in duration, with each side of the building and the roof being observed for at least 15 minutes.

(e) The owner or operator may use the following as alternatives to the reference methods and procedures specified in this section:

(1) For the method and procedure of paragraph (c) of this section, if emissions from two or more facilities continuously interfere so that the opacity of fugitive emissions from an individual affected facility cannot be read, either of the following procedures may be used:

(i) Use for the combined emission stream the highest fugitive opacity standard applicable to any of the individual affected facilities contributing to the emissions stream.

(ii) Separate the emissions so that the opacity of emissions from each affected facility can be read.

(f) To comply with § 60.676(d), the owner or operator shall record the measurements as required in § 60.676(c) using the monitoring devices in § 60.674 (a) and (b) during each particulate matter run and shall determine the averages.

(g) If, after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting any rescheduled performance test required in this section, the owner or operator of an affected facility shall submit a notice to the Administrator at least 7 days prior to any rescheduled performance test.

(h) Initial Method 9 performance tests under § 60.11 of this part and § 60.675 of this subpart are not required for:

(1) Wet screening operations and subsequent screening operations, bucket elevators, and belt conveyors that process saturated material in the production line up to, but not including the next crusher, grinding mill or storage bin.

(2) Screening operations, bucket elevators, and belt conveyors in the production line downstream of wet mining operations, that process saturated materials up to the first crusher, grinding mill, or storage bin in the production line.

[54 FR 6680, Feb. 14, 1989, as amended at 62 FR 31360, June 9, 1997]

§ 60.676 Reporting and recordkeeping.

(a) Each owner or operator seeking to comply with § 60.670(d) shall submit to the Administrator the following information about the existing facility being replaced and the replacement piece of equipment.

(1) For a crusher, grinding mill, bucket elevator, bagging operation, or enclosed truck or railcar loading station:

(i) The rated capacity in megagrams or tons per hour of the existing facility being replaced and

(ii) The rated capacity in tons per hour of the replacement equipment.

(2) For a screening operation:

(i) The total surface area of the top screen of the existing screening operation being replaced and

(ii) The total surface area of the top screen of the replacement screening operation.

(3) For a conveyor belt:

(i) The width of the existing belt being replaced and

(ii) The width of the replacement conveyor belt.

(4) For a storage bin:

(i) The rated capacity in megagrams or tons of the existing storage bin being replaced and

(ii) The rated capacity in megagrams or tons of replacement storage bins.

(b) [Reserved]

(c) During the initial performance test of a wet scrubber, and daily thereafter, the owner or operator shall record the measurements of both the change in pressure of the gas stream across the scrubber and the scrubbing liquid flow rate.

(d) After the initial performance test of a wet scrubber, the owner or operator shall submit semiannual reports to the Administrator of occurrences when the measurements of the scrubber pressure loss (or gain) and liquid flow rate differ by more than ±30 percent from the averaged determined during the most recent performance test.

(e) The reports required under paragraph (d) shall be postmarked within 30 days following end of the second and fourth calendar quarters.

(f) The owner or operator of any affected facility shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in § 60.672 of this subpart, including reports of opacity observations made using Method 9 to demonstrate compliance with § 60.672(b), (c), and (f), and reports of observations using Method 22 to demonstrate compliance with § 60.672(e).

(g) The owner or operator of any screening operation, bucket elevator, or belt conveyor that processes saturated material and is subject to § 60.672(h) and subsequently processes unsaturated materials, shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the 10 percent opacity limit in § 60.672(b) and the emission test requirements of § 60.11 and this subpart. Likewise a screening operation, bucket elevator, or belt conveyor that processes unsaturated material but subsequently processes saturated material shall submit a report of this change within 30 days following such change. This screening operation, bucket elevator, or belt conveyor is then subject to the no visible emission limit in § 60.672(h).

(h) The subpart A requirement under § 60.7(a)(2) for notification of the anticipated date of initial startup of an affected facility shall be waived for owners or operators of affected facilities regulated under this subpart.

(i) A notification of the actual date of initial startup of each affected facility shall be submitted to the Administrator.

(1) For a combination of affected facilities in a production line that begin actual initial startup on the same day, a single notification of startup may be submitted by the owner or operator to the Administrator. The notification shall be postmarked within 15 days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available.

(2) For portable aggregate processing plants, the notification of the actual date of initial startup shall include both the home office and the current address or location of the portable plant.

(j) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected facilities within the State will be relieved of the obligation to comply with the reporting requirements of this section, provided that they comply with requirements established by the State.

[51 FR 31337, Aug. 1, 1985, as amended at 54 FR 6680, Feb. 14, 1989; 62 FR 31360, June 9, 1997; 65 FR 61778, Oct. 17, 2000]

Subpart PPP—Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants

SOURCE: 50 FR 7699, Feb. 25, 1985, unless otherwise noted.

§ 60.680 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each rotary spin wool fiberglass insulation manufacturing line.

(b) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after February 7, 1984, is subject to the requirements of this subpart.

§ 60.681 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act and in subpart A of this part.

Glass pull rate means the mass of molten glass utilized in the manufacture of wool fiberglass insulation at a single manufacturing line in a specified time period.

Manufacturing line means the manufacturing equipment comprising the forming section, where molten glass is fiberized and a fiberglass mat is formed; the curing section, where the binder resin in the mat is thermally ''set;'' and the cooling section, where the mat is cooled.

Rotary spin means a process used to produce wool fiberglass insulation by forcing molten glass through numerous small orifices in the side wall of a spinner to form continuous glass fibers that are then broken into discrete lengths by high velocity air flow.

Wool fiberglass insulation means a thermal insulation material composed of glass fibers and made from glass produced or melted at the same facility where the manufacturing line is located.

§ 60.682 Standard for particulate matter.

On and after the date on which the performance test required to be conducted by § 60.8 is completed, no owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any affected facility any gases which contain particulate matter in excess of 5.5 kg/Mg (11.0 1b/ton) of glass pulled.

§ 60.683 Monitoring of operations.

(a) An owner or operator subject to the provisions of this subpart who uses a wet scrubbing control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the gas pressure drop across each scrubber and the scrubbing liquid flow rate to each scrubber. The pressure drop monitor is to be certified by its manufacturer to be accurate within ±250 pascals (±1 inch water gauge) over its operating range, and the flow rate monitor is to be certified by its manufacturer to be accurate within ±5 percent over its operating range.

(b) An owner or operator subject to the provisions of this subpart who uses a wet electrostatic precipitator control device to comply with the mass emission standard shall install, calibrate, maintain, and operate monitoring devices that measure the primary and secondary current (amperes) and voltage in each electrical field and the inlet water flow rate. In addition, the owner or operator shall determine the total residue (total solids) content of the water entering the control device once per day using Method 209A, "Total Residue Dried at 103–105 ° C," in *Standard Methods for the Examination of Water and Wastewater*, 15th Edition, 1980 (incorporated by reference—see § 60.17). Total residue shall be reported as percent by weight. All monitoring devices required under this paragraph are to be certified by their manufacturers to be accurate within ±5 percent over their operating range.

(c) All monitoring devices required under this section are to be recalibrated quarterly in accordance with procedures under § 60.13(b).

§ 60.684 Recordkeeping and reporting requirements.

(a) At 30-minute intervals during each 2-hour test run of each performance test of a wet scrubber control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by § 60.683(a).

(b) At 30-minute intervals during each 2-hour test run of each performance test of a wet electrostatic precipitator control device and at least once every 4 hours thereafter, the owner or operator shall record the measurements required by § 60.683(b), except that the concentration of total residue in the water shall be recorded once during each performance test and once per day thereafter.

(c) Records of the measurements required in paragraphs (a) and (b) of this section must be retained for at least 2 years.

(d) Each owner or operator shall submit written semiannual reports of exceedances of control device operating parameters required to be monitored by paragraphs (a) and (b) of this section and written documentation of, and a report of corrective maintenance required as a result of, quarterly calibrations of the monitoring devices required in § 60.683(c). For the purpose of these reports, exceedances are defined as any monitoring data that are less than 70 percent of the lowest value or greater than 130 percent of the highest value of each operating parameter recorded during the most recent performance test.

(e) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section, provided that they comply with the requirements established by the State.

§ 60.685 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall conduct performance tests while the product with the highest loss on ignition (LOI) expected to be produced by the affected facility is being manufactured.

(c) The owner or operator shall determine compliance with the particulate matter standard in § 60.682 as follows:

(1) The emission rate (E) of particulate matter shall be computed for each run using the following equation:

$$E=(C_t\ Q_{sd})/(P_{avg}\ K)$$

where:

E = emission rate of particulate matter, kg/Mg (lb/ton).

C_t = concentration of particulate matter, g/dscm (gr/dscf).

Q_{sd} = volumetric flow rate of effluent gas, dscm/hr (dscf/hr).

P_{avg} = average glass pull rate, Mg/hr (ton/hr).

K = 1,000 g/kg (7,000 gr/lb).

(2) Method 5E shall be used to determine the particulate matter concentration (C_t) and the volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume shall be at least 120 minutes and 2.55 dscm (90.1 dscf).

(3) The average glass pull rate (P_{avg}) for the manufacturing line shall be the arithmetic average of three glass pull rate (P_i) determinations taken at intervals of at least 30 minutes during each run.

The individual glass pull rates (P_i) shall be computed using the following equation:

$$P_i=K'\ L_s\ W_m\ M\ [1.0-(LOI/100)]$$

where:

P_i=glass pull rate at interval "i", Mg/hr (ton/hr).

L_s=line speed, m/min (ft/min).

W_m=trimmed mat width, m (ft).

M=mat gram weight, g/m^2 (lb/ft^2).

LOI=loss on ignition, weight percent.

K'=conversion factor, 6×10^{-5} (min-Mg)/ (hr-g) [3×10^{-2} (min-ton)/(hr-lb)].

(i) ASTM D2584–68 (Reapproved 1985) or 94 (incorporated by reference—see § 60.17), shall be used to determine the LOI for each run.

(ii) Line speed (L_s), trimmed mat width (W_m), and mat gram weight (M) shall be determined for each run from the process information or from direct measurements.

(d) To comply with § 60.684(d), the owner or operator shall record measurements as required in § 60.684 (a) and (b) using the monitoring devices in § 60.683 (a) and (b) during the particulate matter runs.

[54 FR 6680, Feb. 14, 1989, as amended at 65 FR 61778, Oct. 17, 2000]

Subpart QQQ—Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

SOURCE: 53 FR 47623, Nov. 23, 1988, unless otherwise noted.

§ 60.690 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities located in petroleum refineries for which construction, modification, or reconstruction is commenced after May 4, 1987.

(2) An individual drain system is a separate affected facility.

(3) An oil-water separator is a separate affected facility.

(4) An aggregate facility is a separate affected facility.

(b) Notwithstanding the provisions of 40 CFR 60.14(e)(2), the construction or installation of a new individual drain system shall constitute a modification to an affected facility described in § 60.690(a)(4). For purposes of this paragraph, a new individual drain system shall be limited to all process drains and the first common junction box.

§ 60.691 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of 40 CFR part 60, and the following terms shall have the specific meanings given them.

Active service means that a drain is receiving refinery wastewater from a process unit that will continuously maintain a water seal.

Aggregate facility means an individual drain system together with ancillary downstream sewer lines and oil-water separators, down to and including the secondary oil-water separator, as applicable.

Catch basin means an open basin which serves as a single collection point for stormwater runoff received directly from refinery surfaces and for refinery wastewater from process drains.

Closed vent system means a system that is not open to the atmosphere and that is composed of piping, connections, and, if necessary, flow-inducing devices that transport gas or vapor from an emission source to a control device. If gas or vapor from regulated equipment are routed to a process (e.g., to a petroleum refinery fuel gas system), the process shall not be considered a closed vent system and is not subject to the closed vent system standards.

Completely closed drain system means an individual drain system that is not open to the atmosphere and is equipped and operated with a closed vent system and control device complying with the requirements of § 60.692–5.

Control device means an enclosed combustion device, vapor recovery system or flare.

Fixed roof means a cover that is mounted to a tank or chamber in a stationary manner and which does not move with fluctuations in wastewater levels.

Floating roof means a pontoon-type or double-deck type cover that rests on the liquid surface.

Gas-tight means operated with no detectable emissions.

Individual drain system means all process drains connected to the first common downstream junction box. The term includes all such drains and common junction box, together with their associated sewer lines and other junction boxes, down to the receiving oil-water separator.

Junction box means a manhole or access point to a wastewater sewer system line.

No detectable emissions means less than 500 ppm above background levels, as measured by a detection instrument in accordance with Method 21 in appendix A of 40 CFR part 60.

Non-contact cooling water system means a once-through drain, collection and treatment system designed and operated for collecting cooling water which does not come into contact with hydrocarbons or oily wastewater and which is not recirculated through a cooling tower.

Oil-water separator means wastewater treatment equipment used to separate oil from water consisting of a separation tank, which also includes the forebay and other separator basins, skimmers, weirs, grit chambers, and sludge hoppers. Slop oil facilities, including tanks, are included in this term along with storage vessels and auxiliary equipment located between individual drain systems and the oil-water separator. This term does not include storage vessels or auxiliary equipment which do not come in contact with or store oily wastewater.

Oily wastewater means wastewater generated during the refinery process which contains oil, emulsified oil, or other hydrocarbons. Oily wastewater originates from a variety of refinery processes including cooling water, condensed stripping steam, tank draw-off, and contact process water.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum refinery means any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants, or other products through the distillation of petroleum, or through the redistillation of petroleum, cracking, or reforming unfinished petroleum derivatives.

Sewer line means a lateral, trunk line, branch line, ditch, channel, or other conduit used to convey refinery wastewater to downstream components of a refinery wastewater treatment system. This term does not include buried, below-grade sewer lines.

Slop oil means the floating oil and solids that accumulate on the surface of an oil-water separator.

Storage vessel means any tank, reservoir, or container used for the storage of petroleum liquids, including oily wastewater.

Stormwater sewer system means a drain and collection system designed and operated for the sole purpose of collecting stormwater and which is segregated from the process wastewater collection system.

Wastewater system means any component, piece of equipment, or installation that receives, treats, or processes oily wastewater from petroleum refinery process units.

Water seal controls means a seal pot, p-leg trap, or other type of trap filled with water that has a design capability to create a water barrier between the sewer and the atmosphere.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995]

§ 60.692–1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall comply with the requirements of §§ 60.692–1 to 60.692–5 and with §§ 60.693–1 and 60.693–2, except during periods of startup, shutdown, or malfunction.

(b) Compliance with §§ 60.692–1 to 60.692–5 and with §§ 60.693–1 and 60.693–2 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in § 60.696.

(c) Permission to use alternative means of emission limitation to meet the requirements of §§ 60.692–2 through 60.692–4 may be granted as provided in § 60.694.

(d)(1) Stormwater sewer systems are not subject to the requirements of this subpart.

(2) Ancillary equipment, which is physically separate from the wastewater system and does not come in contact with or store oily wastewater, is not subject to the requirements of this subpart.

(3) Non-contact cooling water systems are not subject to the requirements of this subpart.

(4) An owner or operator shall demonstrate compliance with the exclusions in paragraphs (d)(1), (2), and (3) of this section as provided in § 60.697 (h), (i), and (j).

§ 60.692–2 Standards: Individual drain systems.

(a)(1) Each drain shall be equipped with water seal controls.

(2) Each drain in active service shall be checked by visual or physical inspection initially and monthly thereafter for indications of low water levels or other conditions that would reduce the effectiveness of the water seal controls.

(3) Except as provided in paragraph (a)(4) of this section, each drain out of active service shall be checked by visual or physical inspection initially and weekly thereafter for indications of low water levels or other problems that could result in VOC emissions.

(4) As an alternative to the requirements in paragraph (a)(3) of this section, if an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of service, inspections shall be conducted initially and semiannually to ensure caps or plugs are in place and properly installed.

(5) Whenever low water levels or missing or improperly installed caps or plugs are identified, water shall be added or first efforts at repair shall be made as soon as practicable, but not later than 24 hours after detection, except as provided in § 60.692–6.

(b)(1) Junction boxes shall be equipped with a cover and may have an open vent pipe. The vent pipe shall be at least 90 cm (3 ft) in length and shall not exceed 10.2 cm (4 in) in diameter.

(2) Junction box covers shall have a tight seal around the edge and shall be kept in place at all times, except during inspection and maintenance.

(3) Junction boxes shall be visually inspected initially and semiannually thereafter to ensure that the cover is in place and to ensure that the cover has a tight seal around the edge.

(4) If a broken seal or gap is identified, first effort at repair shall be made as soon as practicable, but not later than 15 calendar days after the broken seal or gap is identified, except as provided in § 60.692–6.

(c)(1) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other

problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in § 60.692–6.

(d) Except as provided in paragraph (e) of this section, each modified or reconstructed individual drain system that has a catch basin in the existing configuration prior to May 4, 1987 shall be exempt from the provisions of this section.

(e) Refinery wastewater routed through new process drains and a new first common downstream junction box, either as part of a new individual drain system or an existing individual drain system, shall not be routed through a downstream catch basin.

§ 60.692–3 Standards: Oil-water separators.

(a) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart shall be equipped and operated with a fixed roof, which meets the following specifications, except as provided in paragraph (d) of this section or in § 60.693–2.

(1) The fixed roof shall be installed to completely cover the separator tank, slop oil tank, storage vessel, or other auxiliary equipment with no separation between the roof and the wall.

(2) The vapor space under a fixed roof shall not be purged unless the vapor is directed to a control device.

(3) If the roof has access doors or openings, such doors or openings shall be gasketed, latched, and kept closed at all times during operation of the separator system, except during inspection and maintenance.

(4) Roof seals, access doors, and other openings shall be checked by visual inspection initially and semiannually thereafter to ensure that no cracks or gaps occur between the roof and wall and that access doors and other openings are closed and gasketed properly.

(5) When a broken seal or gasket or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after it is identified, except as provided in § 60.692–6.

(b) Each oil-water separator tank or auxiliary equipment with a design capacity to treat more than 16 liters per second (250 gallons per minute (gpm)) of refinery wastewater shall, in addition to the requirements in paragraph (a) of this section, be equipped and operated with a closed vent system and control device, which meet the requirements of § 60.692–5, except as provided in paragraph (c) of this section or in § 60.693–2.

(c)(1) Each modified or reconstructed oil-water separator tank with a maximum design capacity to treat less than 38 liters per second (600 gpm) of refinery wastewater which was equipped and operated with a fixed roof covering the entire separator tank or a portion of the separator tank prior to May 4, 1987 shall be exempt from the requirements of paragraph (b) of this section, but shall meet the requirements of paragraph (a) of this section, or may elect to comply with paragraph (c)(2) of this section.

(2) The owner or operator may elect to comply with the requirements of paragraph (a) of this section for the existing fixed roof covering a portion of the separator tank and comply with the requirements for floating roofs in § 60.693–2 for the remainder of the separator tank.

(d) Storage vessels, including slop oil tanks and other auxiliary tanks that are subject to the standards in §§ 60.112, 60.112a, and 60.112b and associated requirements, 40 CFR part 60, subparts K, Ka, or Kb are not subject to the requirements of this section.

(e) Slop oil from an oil-water separator tank and oily wastewater from slop oil handling equipment shall be collected, stored, transported, recycled, reused, or disposed of in an enclosed system. Once slop oil is returned to the process unit or is disposed of, it is no longer within the scope of this subpart. Equipment used in handling slop oil shall be equipped with a fixed roof meeting the requirements of paragraph (a) of this section.

(f) Each oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment that is required to comply with paragraph (a) of this section, and not paragraph (b) of this section, may be equipped with a pressure control valve as necessary for proper system operation. The pressure control valve shall be set at the maximum pressure necessary for proper system operation, but such that the value will not vent continuously.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.692–4 Standards: Aggregate facility.

A new, modified, or reconstructed aggregate facility shall comply with the requirements of §§ 60.692–2 and 60.692–3.

§ 60.692–5 Standards: Closed vent systems and control devices.

(a) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C (1,500 °F).

(b) Vapor recovery systems (for example, condensers and adsorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater.

(c) Flares used to comply with this subpart shall comply with the requirements of 40 CFR 60.18.

(d) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

(e)(1) Closed vent systems shall be designed and operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined during the initial and semiannual inspections by the methods specified in § 60.696.

(2) Closed vent systems shall be purged to direct vapor to the control device.

(3) A flow indicator shall be installed on a vent stream to a control device to ensure that the vapors are being routed to the device.

(4) All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place.

(5) When emissions from a closed system are detected, first efforts at repair to eliminate the emissions shall be made as soon as practicable, but not later than 30 calendar days from the date the emissions are detected, except as provided in § 60.692–6.

§ 60.692–6 Standards: Delay of repair.

(a) Delay of repair of facilities that are subject to the provisions of this subpart will be allowed if the repair is technically impossible without a complete or partial refinery or process unit shutdown.

(b) Repair of such equipment shall occur before the end of the next refinery or process unit shutdown.

§ 60.692–7 Standards: Delay of compliance.

(a) Delay of compliance of modified individual drain systems with ancillary downstream treatment components will be allowed if compliance with the provisions of this subpart cannot be achieved without a refinery or process unit shutdown.

(b) Installation of equipment necessary to comply with the provisions of this subpart shall occur no later than the next scheduled refinery or process unit shutdown.

§ 60.693–1 Alternative standards for individual drain systems.

(a) An owner or operator may elect to construct and operate a completely closed drain system.

(b) Each completely closed drain system shall be equipped and operated with a closed vent system and control device complying with the requirements of § 60.692–5.

(c) An owner or operator must notify the Administrator in the report required in 40 CFR 60.7 that the owner or operator has elected to construct and operate a completely closed drain system.

(d) If an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of § 60.692–2 or § 60.694.

(e)(1) Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(2) The portion of each unburied sewer line shall be visually inspected initially and semiannually thereafter for indication of cracks, gaps, or other problems that could result in VOC emissions.

(3) Whenever cracks, gaps, or other problems are detected, repairs shall be made as soon as practicable, but not later than 15 calendar days after identification, except as provided in § 60.692–6.

§ 60.693–2 Alternative standards for oil-water separators.

(a) An owner or operator may elect to construct and operate a floating roof on an oil-water separator tank, slop oil tank, storage vessel, or other auxiliary equipment subject to the requirements of this subpart which meets the following specifications.

(1) Each floating roof shall be equipped with a closure device between the wall of the separator and the roof edge. The closure device is to consist of a primary seal and a secondary seal.

(i) The primary seal shall be a liquid-mounted seal or a mechanical shoe seal.

(A) A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the separator and the floating roof. A mechanical shoe seal means a metal sheet held vertically against the wall of the separator by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(B) The gap width between the primary seal and the separator wall shall not exceed 3.8 cm (1.5 in.) at any point.

(C) The total gap area between the primary seal and the separator wall shall not exceed 67 cm^2/m (3.2 $in.^2/ft$) of separator wall perimeter.

(ii) The secondary seal shall be above the primary seal and cover the annular space between the floating roof and the wall of the separator.

(A) The gap width between the secondary seal and the separator wall shall not exceed 1.3 cm (0.5 in.) at any point.

(B) The total gap area between the secondary seal and the separator wall shall not exceed 6.7 cm^2/m (0.32 $in.^2/ft$) of separator wall perimeter.

(iii) The maximum gap width and total gap area shall be determined by the methods and procedures specified in § 60.696(d).

(A) Measurement of primary seal gaps shall be performed within 60 calendar days after initial installation of the floating roof and introduction of refinery wastewater and once every 5 years thereafter.

(B) Measurement of secondary seal gaps shall be performed within 60 calendar days of initial introduction of refinery wastewater and once every year thereafter.

(iv) The owner or operator shall make necessary repairs within 30 calendar days of identification of seals not meeting the requirements listed in paragraphs (a)(1) (i) and (ii) of this section.

(2) Except as provided in paragraph (a)(4) of this section, each opening in the roof shall be equipped with a gasketed cover, seal, or lid, which shall be maintained in a closed position at all times, except during inspection and maintenance.

(3) The roof shall be floating on the liquid (i.e., off the roof supports) at all times except during abnormal conditions (i.e., low flow rate).

(4) The floating roof may be equipped with one or more emergency roof drains for removal of stormwater. Each emergency roof drain shall be fitted with a slotted membrane fabric cover that covers at least 90 percent of the drain opening area or a flexible fabric sleeve seal.

(5)(i) Access doors and other openings shall be visually inspected initially and semiannually thereafter to ensure that there is a tight fit around the edges and to identify other problems that could result in VOC emissions.

(ii) When a broken seal or gasket on an access door or other opening is identified, it shall be repaired as soon as practicable, but not later than 30 calendar days after it is identified, except as provided in § 60.692–6.

(b) An owner or operator must notify the Administrator in the report required by 40 CFR 60.7 that the owner or operator has elected to construct and operate a floating roof under paragraph (a) of this section.

(c) For portions of the oil-water separator tank where it is infeasible to construct and operate a floating roof, such as the skimmer mechanism and weirs, a fixed roof meeting the requirements of § 60.692–3(a) shall be installed.

(d) Except as provided in paragraph (c) of this section, if an owner or operator elects to comply with the provisions of this section, then the owner or operator does not need to comply with the provisions of §§ 60.692–3 or 60.694 applicable to the same facilities.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995]

§ 60.694 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in VOC emissions at least equivalent to the reduction in VOC emissions achieved by the applicable requirement in § 60.692, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means for purposes of compliance with that requirement. The notice may condition the permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after notice and an opportunity for a hearing.

(c) Any person seeking permission under this section shall collect, verify, and submit to the Administrator information showing that the alternative means achieves equivalent emission reductions.

§ 60.695 Monitoring of operations.

(a) Each owner or operator subject to the provisions of this subpart shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator.

(1) Where a thermal incinerator is used for VOC emission reduction, a temperature monitoring device equipped with a continuous recorder shall be used to measure the temperature of the gas stream in the combustion zone of the incinerator. The temperature monitoring device shall have an accuracy of ±1 percent of the temperature being measured, expressed in °C, or ±0.5 °C (0.9 °F), whichever is greater.

(2) Where a catalytic incinerator is used for VOC emission reduction, temperature monitoring devices, each equipped with a continuous recorder shall be used to measure the temperature in the gas stream immediately before and after the catalyst bed of the incinerator. The temperature monitoring devices shall have an accuracy of ±1 percent of the temperature being measured, expressed in °C, or ±0.5 °C (0.9 °F), whichever is greater.

(3) Where a carbon adsorber is used for VOC emissions reduction, a monitoring device that continuously indicates and records the VOC concentration level or reading of organics in the exhaust gases of the control device outlet gas stream or inlet and outlet gas stream shall be used.

(i) For a carbon adsorption system that regenerates the carbon bed directly onsite, a monitoring device that continuously indicates and records the volatile organic compound concentration level or reading of organics in the exhaust gases of the control device outlet gas stream or inlet and outlet gas stream shall be used.

(ii) For a carbon adsorption system that does not regenerate the carbon bed directly onsite in the control device (e.g., a carbon canister), the concentration level of the organic compounds in the exhaust vent stream from the carbon adsorption system shall be monitored on a regular schedule, and the existing carbon shall be replaced with fresh carbon immediately when carbon breakthrough is indicated. The device shall be monitored on a daily basis or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is greater. As an alternative to conducting this monitoring, an owner or operator may replace the carbon in the carbon adsorption system with fresh carbon at a regular predetermined time interval that is less than the carbon replacement interval that is determined by the maximum design flow rate and organic concentration in the gas stream vented to the carbon adsorption system.

(4) Where a flare is used for VOC emission reduction, the owner or operator shall comply with the monitoring requirements of 40 CFR 60.18(f)(2).

(b) Where a VOC recovery device other than a carbon adsorber is used to meet the requirements specified in § 60.692–5(a), the owner or operator shall provide to the Administrator information describing the operation of the control device and the process parameter(s) that would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

(c) An alternative operational or process parameter may be monitored if it can be demonstrated that another parameter will ensure that the control device is operated in conformance with these standards and the control device's design specifications.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.696 Performance test methods and procedures and compliance provisions.

(a) Before using any equipment installed in compliance with the requirements of § 60.692–2, § 60.692–3, § 60.692–4, § 60.692–5, or § 60.693, the owner or operator shall inspect such equipment for indications of potential emissions, defects, or other problems that may cause the requirements of this subpart not to be met. Points of inspection shall include, but are not limited to, seals, flanges, joints, gaskets, hatches, caps, and plugs.

(b) The owner or operator of each source that is equipped with a closed vent system and control device as required in § 60.692–5 (other than a flare) is exempt from § 60.8 of the General Provisions and shall use Method 21 to measure the emission concentrations, using 500 ppm as the no detectable emission limit. The instrument shall be calibrated each day before using. The calibration gases shall be:

(1) Zero air (less than 10 ppm of hydrocarbon in air), and

(2) A mixture of either methane or n-hexane and air at a concentration of approximately, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall conduct a performance test initially, and at other times as requested by the Administrator, using the test methods and procedures in § 60.18(f) to determine compliance of flares.

(d) After installing the control equipment required to meet § 60.693–2(a) or whenever sources that have ceased to treat refinery wastewater for a period of 1 year or more are placed back into service, the owner or operator shall determine compliance with the standards in § 60.693–2(a) as follows:

(1) The maximum gap widths and maximum gap areas between the primary seal and the separator wall and between the secondary seal and the separator wall shall be determined individually within 60 calendar days of the initial installation of the floating roof and introduction of refinery wastewater or 60 calendar days after the equipment is placed back into service using the following procedure when the separator is filled to the design operating level and when the roof is floating off the roof supports.

(i) Measure seal gaps around the entire perimeter of the separator in each place where a 0.32 cm (0.125 in.) diameter uniform probe passes freely (without forcing or binding against seal) between the seal and the wall of the separator and measure the gap width and perimetrical distance of each such location.

(ii) The total surface area of each gap described in (d)(1)(i) of this section shall be determined by using probes of various widths to measure accurately the actual distance from the wall to the seal and multiplying each such width by its respective perimetrical distance.

(iii) Add the gap surface area of each gap location for the primary seal and the secondary seal individually, divide the sum for each seal by the nominal perimeter of the separator basin and compare each to the maximum gap area as specified in § 60.693–2.

(2) The gap widths and total gap area shall be determined using the procedure in paragraph (d)(1) of this section according to the following frequency:

(i) For primary seals, once every 5 years.

(ii) For secondary seals, once every year.

§ 60.697 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. All records shall be retained for a period of 2 years after being recorded unless otherwise noted.

(b)(1) For individual drain systems subject to § 60.692–2, the location, date, and corrective action shall be recorded for each drain when the water seal is dry or otherwise breached, when a drain cap or plug is missing or improperly installed, or other problem is identified that could result in VOC emissions, as determined during the initial and periodic visual or physical inspection.

(2) For junction boxes subject to § 60.692–2, the location, date, and corrective action shall be recorded for inspections required by § 60.692–2(b) when a broken seal, gap, or other problem is identified that could result in VOC emissions.

(3) For sewer lines subject to §§ 60.692–2 and 60.693–1(e), the location, date, and corrective action shall be recorded for inspections required by §§ 60.692–2(c) and 60.693–1(e) when a problem is identified that could result in VOC emissions.

(c) For oil-water separators subject to § 60.692–3, the location, date, and corrective action shall be recorded for inspections required by by § 60.692–3(a) when a problem is identified that could result in VOC emissions.

(d) For closed vent systems subject to § 60.692–5 and completely closed drain systems subject to § 60.693–1, the location, date, and corrective action shall be recorded for inspections required by § 60.692–5(e) during which detectable emissions are measured or a problem is identified that could result in VOC emissions.

(e)(1) If an emission point cannot be repaired or corrected without a process unit shutdown, the expected date of a successful repair shall be recorded.

(2) The reason for the delay as specified in § 60.692–6 shall be recorded if an emission point or equipment problem is not repaired or corrected in the specified amount of time.

(3) The signature of the owner or operator (or designee) whose decision it was that repair could not be effected without refinery or process shutdown shall be recorded.

(4) The date of successful repair or corrective action shall be recorded.

(f)(1) A copy of the design specifications for all equipment used to comply with the provisions of this subpart shall be kept for the life of the source in a readily accessible location.

(2) The following information pertaining to the design specifications shall be kept.

(i) Detailed schematics, and piping and instrumentation diagrams.

(ii) The dates and descriptions of any changes in the design specifications.

(3) The following information pertaining to the operation and maintenance of closed drain systems and closed vent systems shall be kept in a readily accessible location.

(i) Documentation demonstrating that the control device will achieve the required control efficiency during maximum loading conditions shall be kept for the life of the facility. This documentation is to include a general description of the gas streams that enter the control device, including flow and volatile organic compound content under varying liquid level conditions (dynamic and static) and manufacturer's design specifications for the control device. If an enclosed combustion device with a minimum residence time of 0.75 seconds and a minimum temperature of 816 °C (1,500 °F) is used to meet the 95-percent requirement, documentation that those conditions exist is sufficient to meet the requirements of this paragraph.

(ii) For a carbon adsorption system that does not regenerate the carbon bed directly onsite in the control device such as a carbon canister, the design analysis shall consider the vent stream composition, constituent concentrations, flow rate, relative humidity, and temperature. The design analysis shall also establish the design exhaust vent stream organic compound concentration level, capacity of carbon bed, type and working capacity of activated carbon used for carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule.

(iii) Periods when the closed vent systems and control devices required in § 60.692 are not operated as designed, including periods when a flare pilot does not have a flame shall be recorded and kept for 2 years after the information is recorded.

(iv) Dates of startup and shutdown of the closed vent system and control devices required in § 60.692 shall be recorded and kept for 2 years after the information is recorded.

(v) The dates of each measurement of detectable emissions required in §§ 60.692, 60.693, or 60.692–5 shall be recorded and kept for 2 years after the information is recorded.

(vi) The background level measured during each detectable emissions measurement shall be recorded and kept for 2 years after the information is recorded.

(vii) The maximum instrument reading measured during each detectable emission measurement shall be recorded and kept for 2 years after the information is recorded.

(viii) Each owner or operator of an affected facility that uses a thermal incinerator shall maintain continuous records of the temperature of the gas stream in the combustion zone of the incinerator and records of all 3-hour periods of operation during which the average temperature of the gas stream in the combustion zone is more than 28 °C (50 °F) below the design combustion zone temperature, and shall keep such records for 2 years after the information is recorded.

(ix) Each owner or operator of an affected facility that uses a catalytic incinerator shall maintain continuous records of the temperature of the gas stream both upstream and downstream of the catalyst bed of the incinerator, records of all 3-hour periods of operation during which the average temperature measured before the catalyst bed is more than 28 °C (50 °F) below the design gas stream temperature, and records of all 3-hour periods during which the average temperature difference across the catalyst bed is less than 80 percent of the design temperature difference, and shall keep such records for 2 years after the information is recorded.

(x) Each owner or operator of an affected facility that uses a carbon adsorber shall maintain continuous records of the VOC concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream and records of all 3-hour periods of operation during which the average VOC concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream, is more than 20 percent greater than the design exhaust gas concentration level, and shall keep such records for 2 years after the information is recorded.

(A) Each owner or operator of an affected facility that uses a carbon adsorber which is regenerated directly onsite shall maintain continuous records of the volatile organic compound concentration level or reading of organics of the control device outlet gas stream or inlet and outlet gas stream and records of all 3-hour periods of operation during which the average volatile organic compound concentration level or reading of organics in the exhaust gases, or inlet and outlet gas stream, is more than 20 percent greater than the design exhaust gas concentration level, and shall keep such records for 2 years after the information is recorded.

(B) If a carbon adsorber that is not regenerated directly onsite in the control device is used, then the owner or operator shall maintain records of dates and times when the control device is monitored, when breakthrough is measured, and shall record the date and time that the existing carbon in the control device is replaced with fresh carbon.

(g) If an owner or operator elects to install a tightly sealed cap or plug over a drain that is out of active service, the owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which indicate the location of such drains.

(h) For stormwater sewer systems subject to the exclusion in § 60.692–1(d)(1), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that no wastewater from any process units or equipment is directly discharged to the stormwater sewer system.

(i) For ancillary equipment subject to the exclusion in § 60.692–1(d)(2), an owner or operator shall keep for the life of a facility in a readily accessible location, plans or specifications which demonsrate that the ancillary equipment does not come in contact with or store oily wastewater.

(j) For non-contact cooling water systems subject to the exclusion in § 60.692–1(d)(3), an owner or operator shall keep for the life of the facility in a readily accessible location, plans or specifications which demonstrate that the cooling water does not contact hydrocarbons or oily wastewater and is not recirculated through a cooling tower.

(k) For oil-water separators subject to § 60.693–2, the location, date, and corrective action shall be recorded for inspections required by §§ 60.693–2(a)(1)(iii)(A) and (B), and shall be maintained for the time period specified in paragraphs (k)(1) and (2) of this section.

(1) For inspections required by § 60.693-2(a)(1)(iii)(A), ten years after the information is recorded.

(2) For inspections required by § 60.693–2(a)(1)(iii)(B), two years after the information is recorded.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43259, Aug. 18, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.698 Reporting requirements.

(a) An owner or operator electing to comply with the provisions of § 60.693 shall notify the Administrator of the alternative standard selected in the report required in § 60.7.

(b)(1) Each owner or operator of a facility subject to this subpart shall submit to the Administrator within 60 days after initial startup a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests of process drains, sewer lines, junction boxes, oil-water separators, and closed vent systems and control devices have been carried out in accordance with these standards. Thereafter, the owner or operator shall submit to the Administrator semiannually a certification that all of the required inspections have been carried out in accordance with these standards.

(2) Each owner or operator of an affected facility that uses a flare shall submit to the Administrator within 60 days after initial startup, as required under § 60.8(a), a report of the results of the performance test required in § 60.696(c).

(c) A report that summarizes all inspections when a water seal was dry or otherwise breached, when a drain cap or plug was missing or improperly installed, or when cracks, gaps, or other problems were identified that could result in VOC emissions, including information about the repairs or corrective action taken, shall be submitted initially and semiannually thereafter to the Administrator.

(d) As applicable, a report shall be submitted semiannually to the Administrator that indicates:

(1) Each 3-hour period of operation during which the average temperature of the gas stream in the combustion zone of a thermal incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design combustion zone temperature,

(2) Each 3-hour period of operation during which the average temperature of the gas stream immediately before the catalyst bed of a catalytic incinerator, as measured by the temperature monitoring device, is more than 28 °C (50 °F) below the design gas stream temperature, and any 3-hour period during which the average temperature difference across the catalyst bed (i.e., the difference between the temperatures of the gas stream immediately before and after the catalyst bed), as measured by the temperature monitoring device, is less than 80 percent of the design temperature difference, or,

(3) Each 3-hour period of operation during which the average VOC concentration level or reading of organics in the exhaust gases from a carbon adsorber is more than 20 percent greater than the design exhaust gas concentration level or reading.

(i) Each 3-hour period of operation during which the average volatile organic compound concentration level or reading of organics in the exhaust gases from a carbon adsorber which is regenerated directly onsite is more than 20 percent greater than the design exhaust gas concentration level or reading.

(ii) Each occurrence when the carbon in a carbon adsorber system that is not regenerated directly onsite in the control device is not replaced at the predetermined interval specified in § 60.695(a)(3)(ii).

(e) If compliance with the provisions of this subpart is delayed pursuant to § 60.692–7, the notification required under 40 CFR 60.7(a)(4) shall include the estimated date of the next scheduled refinery or process unit shutdown after the date of notification and the reason why compliance with the standards is technically impossible without a refinery or process unit shutdown.

[53 FR 47623, Nov. 23, 1985, as amended at 60 FR 43260, Aug. 18, 1995]

§ 60.699 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States:

§ 60.694 Permission to use alternative means of emission limitations.

[53 FR 47623, Nov. 23, 1985]

Subpart RRR—Standards of Performance for Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes

SOURCE: 58 FR 45962, Aug. 31, 1993, unless otherwise noted.

§ 60.700 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each affected facility designated in paragraph (b) of this section that is part of a process unit that produces any of the chemicals listed in § 60.707 as a product, co-product, by-product, or intermediate, except as provided in paragraph (c) of this section.

(b) The affected facility is any of the following for which construction, modification, or reconstruction commenced after June 29, 1990:

(1) Each reactor process not discharging its vent stream into a recovery system.

(2) Each combination of a reactor process and the recovery system into which its vent stream is discharged.

(3) Each combination of two or more reactor processes and the common recovery system into which their vent streams are discharged.

(c) Exemptions from the provisions of paragraph (a) of this section are as follows:

(1) Any reactor process that is designed and operated as a batch operation is not an affected facility.

(2) Each affected facility that has a total resource effectiveness (TRE) index value greater than 8.0 is exempt from all provisions of this subpart except for §§ 60.702(c); 60.704 (d), (e), and (f); and 60.705 (g), (l)(1), (l)(6), and (t).

(3) Each affected facility in a process unit with a total design capacity for all chemicals produced within that unit of less than 1 gigagram per year (1,100

tons per year) is exempt from all provisions of this subpart except for the recordkeeping and reporting requirements in § 60.705 (i), (l)(5), and (n).

(4) Each affected facility operated with a vent stream flow rate less than 0.011 scm/min is exempt from all provisions of this subpart except for the test method and procedure and the recordkeeping and reporting requirements in § 60.704(g) and § 70.705 (h), (l)(4), and (o).

(5) If the vent stream from an affected facility is routed to a distillation unit subject to subpart NNN and has no other releases to the air except for a pressure relief valve, the facility is exempt from all provisions of this subpart except for § 60.705(r).

(6) Any reactor process operating as part of a process unit which produces beverage alcohols, or which uses, contains, and produces no VOC is not an affected facility.

(7) Any reactor process that is subject to the provisions of subpart DDD is not an affected facility.

(8) Each affected facility operated with a concentration of total organic compounds (TOC) (less methane and ethane) in the vent stream less than 300 ppmv as measured by Method 18 or a concentration of TOC in the vent stream less than 150 ppmv as measured by Method 25A is exempt from all provisions of this subpart except for the test method and procedure and the reporting and recordkeeping requirements in § 60.704(h) and paragraphs (j), (l)(8), and (p) of § 60.705.

(d) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators of process vents that are subject to this subpart may choose to comply with the provisions of 40 CFR part 65, subpart D, to satisfy the requirements of §§ 60.702 through 60.705 and 60.708. The provisions of 40 CFR part 65 also satisfy the criteria of paragraphs (c)(2), (4), and (8) of this section. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart D, must also comply with §§ 60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those process vents. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (d)(2) do not apply to owners or operators of process vents complying with 40 CFR part 65, subpart D, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart D, must comply with 40 CFR part 65, subpart A.

(3) *Compliance date.* Owners or operators who choose to comply with 40 CFR part 65, subpart D at initial startup shall comply with paragraphs (d)(1) and (2) of this section for each vent stream on and after the date on which the initial performance test is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first.

(4) *Initial startup notification.* Each owner or operator subject to the provisions of this subpart that chooses to comply with 40 CFR part 65, subpart D, at initial startup shall notify the Administrator of the specific provisions of 40 CFR 65.63(a)(1), (2), or (3), with which the owner or operator has elected to comply. Notification shall be submitted with the notifications of initial startup required by 40 CFR 65.5(b).

(NOTE: The intent of these standards is to minimize emissions of VOC through the application of best demonstrated technology (BDT). The numerical emission limits in these standards are expressed in terms of TOC, measured as TOC less methane and ethane. This emission limit reflects the performance of BDT.)

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 78279, Dec. 14, 2000]

§ 60.701 Definitions.

As used in this subpart, all terms not defined here shall have the meaning given them in the Act and in subpart A of part 60, and the following terms shall have the specific meanings given them.

Batch operation means any noncontinuous reactor process that is not characterized by steady-state conditions and in which reactants are not added and products are not removed simultaneously.

Boiler means any enclosed combustion device that extracts useful energy in the form of steam and is not an incinerator.

By compound means by individual stream components, not carbon equivalents.

Car-seal means a seal that is placed on a device that is used to change the position of a valve (e.g., from opened to closed) in such a way that the position of the valve cannot be changed without breaking the seal.

Combustion device means an individual unit of equipment, such as an incinerator, flare, boiler, or process heater, used for combustion of a vent stream discharged from the process vent.

Continuous recorder means a data recording device recording an instantaneous data value at least once every 15 minutes.

Flame zone means the portion of the combustion chamber in a boiler occupied by the flame envelope.

Flow indicator means a device which indicates whether gas flow is present in a line.

Halogenated vent stream means any vent stream determined to have a total concentration (by volume) of compounds containing halogens of 20 ppmv (by compound) or greater.

Incinerator means an enclosed combustion device that is used for destroying organic compounds. If there is energy recovery, the energy recovery section and the combustion chambers are not of integral design. That is, the energy recovery section and the combustion section are not physically formed into one manufactured or assembled unit but are joined by ducts or connections carrying flue gas.

Primary fuel means the fuel fired through a burner or a number of similar burners. The primary fuel provides the principal heat input to the device, and the amount of fuel is sufficient to sustain operation without the addition of other fuels.

Process heater means a device that transfers heat liberated by burning fuel directly to process streams or to heat transfer liquids other than water.

Process unit means equipment assembled and connected by pipes or ducts to produce, as intermediates or final products, one or more of the chemicals in § 60.707. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient product storage facilities.

Product means any compound or chemical listed in § 60.707 which is produced for sale as a final product as that chemical, or for use in the production of other chemicals or compounds. By-products, co-products, and intermediates are considered to be products.

Reactor processes are unit operations in which one or more chemicals, or reactants other than air, are combined or decomposed in such a way that their molecular structures are altered and one or more new organic compounds are formed.

Recovery device means an individual unit of equipment, such as an absorber, carbon adsorber, or condenser, capable of and used for the purpose of recovering chemicals for use, reuse, or sale.

Recovery system means an individual recovery device or series of such devices applied to the same vent stream.

Relief valve means a valve used only to release an unplanned, nonroutine discharge. A relief valve discharge results from an operator error, a malfunction such as a power failure or equipment failure, or other unexpected cause that requires immediate venting of gas from process equipment in order to avoid safety hazards or equipment damage.

Secondary fuel means a fuel fired through a burner other than a primary fuel burner. The secondary fuel may provide supplementary heat in addition to the heat provided by the primary fuel.

Total organic compounds or TOC means those compounds measured according to the procedures in § 60.704(b)(4). For the purposes of measuring molar composition as required in § 60.704(d)(2)(i) and § 60.704(d)(2)(ii), hourly emission rate as required in § 60.704(d)(5) and § 60.704(e), and TOC concentration as required in § 60.705(b)(4) and § 60.705(f)(4), those compounds which the Administrator has determined do not contribute appreciably to the formation of ozone are to be excluded.

Total resource effectiveness or TRE index value means a measure of the supplemental total resource requirement per unit reduction of TOC associated with a vent stream from an affected reactor process facility, based on vent stream flow rate, emission rate of TOC, net heating value, and corrosion properties (whether or not the vent stream contains halogenated compounds), as quantified by the equation given under § 60.704(e).

Vent stream means any gas stream discharged directly from a reactor process to the atmosphere or indirectly to the atmosphere after diversion through other process equipment. The vent stream excludes relief valve discharges and equipment leaks.

§ 60.702 Standards.

Each owner or operator of any affected facility shall comply with paragraph (a), (b), or (c) of this section for each vent stream on and after the date on which the initial performance test required by § 60.8 and § 60.704 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial start-up, whichever date comes first. Each owner or operator shall either:

(a) Reduce emissions of TOC (less methane and ethane) by 98 weight-percent, or to a TOC (less methane and ethane) concentration of 20 ppmv, on a dry basis corrected to 3 percent oxygen, whichever is less stringent. If a boiler or process heater is used to comply with this paragraph, then the vent stream shall be introduced into the flame zone of the boiler or process heater; or

(b) Combust the emissions in a flare that meets the requirements of § 60.18; or

(c) Maintain a TRE index value greater than 1.0 without use of a VOC emission control device.

§ 60.703 Monitoring of emissions and operations.

(a) The owner or operator of an affected facility that uses an incinerator to seek to comply with the TOC emission limit specified under § 60.702(a) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater.

(i) Where an incinerator other than a catalytic incinerator is used, a temperature monitoring device shall be installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange is encountered.

(ii) Where a catalytic incinerator is used, temperature monitoring devices shall be installed in the gas stream immediately before and after the catalyst bed.

(2) A flow indicator that provides a record of vent stream flow diverted from being routed to the incinerator at least once every 15 minutes for each affected facility, except as provided in paragraph (a)(2)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the incinerator, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a car-seal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(b) The owner or operator of an affected facility that uses a flare to seek to comply with § 60.702(b) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light to indicate the continuous presence of a flame.

(2) A flow indicator that provides a record of vent stream flow diverted from being routed to the flare at least once every 15 minutes for each affected facility, except as provided in paragraph (b)(2)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the flare, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a carseal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(c) The owner or operator of an affected facility that uses a boiler or process heater to seek to comply with § 60.702(a) shall install, calibrate, maintain and operate according to the manufacturer's specifications the following equipment:

(1) A flow indicator that provides a record of vent stream flow diverted from being routed to the boiler or process heater at least once every 15 minutes for each affected facility, except as provided in paragraph (c)(1)(ii) of this section.

(i) The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream from being routed to the boiler or process heater, resulting in its emission to the atmosphere.

(ii) Where the bypass line valve is secured in the closed position with a carseal or a lock-and-key type configuration, a flow indicator is not required. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream is not diverted through the bypass line.

(2) A temperature monitoring device in the firebox equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, for boilers or process heaters of less than 44 MW (150 million Btu/hr) design heat input capacity. Any vent stream introduced with primary fuel into a boiler or process heater is exempt from this requirement.

(d) The owner or operator of an affected facility that seeks to demonstrate compliance with the TRE index value limit specified under § 60.702(c) shall install, calibrate, maintain, and operate according to manufacturer's specifications the following equipment, unless alternative monitoring procedures or requirements are approved for that facility by the Administrator:

(1) Where an absorber is the final recovery device in the recovery system:

(i) A scrubbing liquid temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, and a specific gravity monitoring device having an accuracy of ±0.02 specific gravity units, each equipped with a continuous recorder; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(2) Where a condenser is the final recovery device in the recovery system:

(i) A condenser exit (product side) temperature monitoring device equipped with a continuous recorder and having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(3) Where a carbon adsorber is the final recovery device unit in the recovery system:

(i) An integrating steam flow monitoring device having an accuracy of ±10 percent, and a carbon bed temperature monitoring device having an accuracy of ±1 percent of the temperature being monitored expressed in degrees Celsius or ±0.5 °C, whichever is greater, both equipped with a continuous recorder; or

(ii) An organic monitoring device used to indicate the concentration level of organic compounds exiting the recovery device based on a detection principle such as infra-red, photoionization, or thermal conductivity, each equipped with a continuous recorder.

(e) An owner or operator of an affected facility seeking to demonstrate compliance with the standards specified under § 60.702 with a control device other than an incinerator, boiler, process heater, or flare; or a recovery device other than an absorber, condenser, or carbon adsorber, shall provide to the Administrator information describing the operation of the control device or recovery device and the process parameter(s) which would indicate proper operation and maintenance of the device. The Administrator may request further information and will specify appropriate monitoring procedures or requirements.

§ 60.704 Test methods and procedures.

(a) For the purpose of demonstrating compliance with § 60.702, all affected facilities shall be run at full operating conditions and flow rates during any performance test.

(b) The following methods in Appendix A to this part, except as provided under § 60.8(b), shall be used as reference methods to determine compliance with the emission limit or percent reduction efficiency specified under § 60.702(a).

(1) Method 1 or 1A, as appropriate, for selection of the sampling sites. The control device inlet sampling site for determination of vent stream molar composition or TOC (less methane and ethane) reduction efficiency shall be prior to the inlet of the control device and after the recovery system.

(2) Method 2, 2A, 2C, or 2D, as appropriate, for determination of the gas volumetric flow rates.

(3) The emission rate correction factor, integrated sampling and analysis procedure of Method 3B shall be used to determine the oxygen concentration ($\%O_{2d}$) for the purposes of determining compliance with the 20 ppmv limit. The sampling site shall be the same as that of the TOC samples, and the samples shall be taken during the same time that the TOC samples are taken. The TOC concentration corrected to 3 percent O_2 (Cc) shall be computed using the following equation:

$$C_C = C_{TOC} \frac{17.9}{20.9 - \%O_{2d}}$$

where:

C_c=Concentration of TOC corrected to 3 percent O_2, dry basis, ppm by volume.

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

$\%O_{2d}$=Concentration of O_2, dry basis, percent by volume.

(4) Method 18 to determine the concentration of TOC in the control device outlet and the concentration of TOC in the inlet when the reduction efficiency of the control device is to be determined.

(i) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately 15-minute intervals.

(ii) The emission reduction (R) of TOC (minus methane and ethane) shall be determined using the following equation:

$$R = \frac{E_i - E_o}{E_i} \times 100$$

where:

R=Emission reduction, percent by weight.

E_i=Mass rate of TOC entering the control device, kg TOC/hr.

E_o=Mass rate of TOC discharged to the atmosphere, kg TOC/hr.

(iii) The mass rates of TOC (E_i, E_o) shall be computed using the following equations:

$$E_i = K_2 \sum_{j=1}^{n} C_{ij} M_{ij}\ Q_i$$

$$E_i = K_2 \sum_{j=1}^{n} C_{oj} M_{ij}\ Q_o$$

where:

C_{ij}, C_{oj}=Concentration of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, dry basis, ppm by volume.

M_{ij}, M_{oj}=Molecular weight of sample component "j" of the gas stream at the inlet and outlet of the control device, respectively, g/g-mole (lb/lb-mole).

Q_i, Q_o=Flow rate of gas stream at the inlet and outlet of the control device, respectively, dscm/min (dscf/hr).

K_2=Constant, 2.494×10^{-6} (l/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

(iv) The TOC concentration (C_{TOC}) is the sum of the individual components and shall be computed for each run using the following equation:

$$C_{TOC} = \sum_{j=1}^{n} C_j$$

where:

C_{TOC}=Concentration of TOC (minus methane and ethane), dry basis, ppm by volume.

C_j=Concentration of sample components "j", dry basis, ppm by volume.

n=Number of components in the sample.

(5) The requirement for an initial performance test is waived, in accordance with § 60.8(b), for the following:

(i) When a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used to seek compliance with § 60.702(a).

(ii) When a vent stream is introduced into a boiler or process heater with the primary fuel.

(iii) The Administrator reserves the option to require testing at such other times as may be required, as provided for in section 114 of the Act.

(6) For purposes of complying with the 98 weight-percent reduction in § 60.702(a), if the vent stream entering a boiler or process heater with a design capacity less than 44 MW (150 million Btu/hour) is introduced with the combustion air or as secondary fuel, the weight-percent reduction of TOC (minus methane and ethane) across the combustion device shall be determined by comparing the TOC (minus methane and ethane) in all combusted vent streams, primary fuels, and secondary fuels with the TOC (minus methane and ethane) exiting the combustion device.

(c) When a flare is used to seek to comply with § 60.702(b), the flare shall comply with the requirements of § 60.18.

(d) The following test methods in Appendix A to this part, except as provided under § 60.8(b), shall be used for determining the net heating value of the gas combusted to determine compliance under § 60.702(b) and for determining the process vent stream TRE index value to determine compliance under § 60.700(c)(2) and § 60.702(c).

(1)(i) Method 1 or 1A, as appropriate, for selection of the sampling site. The sampling site for the vent stream flow rate and molar composition determination prescribed in § 60.704 (d)(2) and (d)(3) shall be, except for the situations outlined in paragraph (d)(1)(ii) of this section, prior to the inlet of any control device, prior to any postreactor dilution of the stream with air, and prior to any postreactor introduction of halogenated compounds into the process vent stream. No traverse site selection method is needed for vents smaller than 4 inches in diameter.

(ii) If any gas stream other than the reactor vent stream is normally conducted through the final recovery device:

(A) The sampling site for vent stream flow rate and molar composition shall be prior to the final recovery device and prior to the point at which any nonreactor stream or stream from a nonaffected reactor process is introduced.

(B) The efficiency of the final recovery device is determined by measuring the TOC concentration using Method 18 at the inlet to the final recovery device after the introduction of any vent stream and at the outlet of the final recovery device.

(C) This efficiency of the final recovery device shall be applied to the TOC concentration measured prior to the final recovery device and prior to the introduction of any nonreactor stream or stream from a nonaffected reactor process to determine the concentration of TOC in the reactor process vent stream from the final recovery device. This concentration of TOC is then used to perform the calculations outlined in § 60.704(d) (4) and (5).

(2) The molar composition of the process vent stream shall be determined as follows:

(i) Method 18 to measure the concentration of TOC including those containing halogens.

(ii) ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) to measure the concentration of carbon monoxide and hydrogen.

(iii) Method 4 to measure the content of water vapor.

(3) The volumetric flow rate shall be determined using Method 2, 2A, 2C, or 2D, as appropriate.

(4) The net heating value of the vent stream shall be calculated using the following equation:

$$H_T = K_1 \sum_{j=1}^{n} C_j H_j \quad 1 - B_{ws}$$

where:

H_T=Net heating value of the sample, MJ/scm, where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C, as in the definition of Q_s (vent stream flow rate).

K_1=Constant, 1.740×10^{-7} (l/ppm) (g-mole/scm) (MJ/kcal), where standard temperature for (g-mole/scm) is 20 °C.

C_j=Concentration on a dry basis of compound j in ppm, as measured for organics by Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946–77 or 90 (Reapproved 1994) (incorporation by reference as specified in § 60.17 of this part) as indicated in § 60.704(d)(2).

H_j=Net heat of combustion of compound j, kcal/g-mole, based on combustion at 25 °C and 760 mm Hg. The heats of combustion of vent stream components would be required to be determined using ASTM D2382–76 or 88 or D4809–95 (incorporation by reference as specified in § 60.17 of this part) if published values are not available or cannot be calculated.

B_{ws}=Water vapor content of the vent stream, proportion by volume.

(5) The emission rate of TOC in the vent stream shall be calculated using the following equation:

$$E_{TOC} = K_2 \sum_{j=1}^{n} C_j M_j \, Q_s$$

where:

E_{TOC}=Emission rate of TOC in the sample, kg/hr.

K_2=Constant, 2.494×10^{-6} (l/ppm) (g-mole/scm) (kg/g) (min/hr), where standard temperature for (g-mole/scm) is 20 °C.

C_j=Concentration on a dry basis of compound j in ppm as measured by Method 18 as indicated in § 60.704(d)(2).

M_j=Molecular weight of sample j, g/g-mole.

Q_s=Vent stream flow rate (dscm/min) at a temperature of 20 °C.

(6) The total vent stream concentration (by volume) of compounds containing halogens (ppmv, by compound) shall be summed from the individual concentrations of compounds containing halogens which were measured by Method 18.

(e) For purposes of complying with § 60.700(c)(2) and § 60.702(c), the owner or operator of a facility affected by this subpart shall calculate the TRE index value of the vent stream using the equation for incineration in paragraph (e)(1) of this section for halogenated vent streams. The owner or operator of an affected facility with a nonhalogenated vent stream shall determine the TRE index value by calculating values using both the incinerator equation in (e)(1) of this section and the flare equation in (e)(2) of this section and selecting the lower of the two values.

(1) The equation for calculating the TRE index value of a vent stream controlled by an incinerator is as follows:

$$TRE = \frac{1}{E_{TOC}} \left[a + b(Q_s)^{0.88} + c(Q_s) + d(Q_s)(H_T) + e(Q_s)^{0.88}(H_T)^{0.88} + f(Y_s)^{0.5} \right]$$

(i) Where for a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is greater than or equal to 14.2 scm/min:

TRE=TRE index value.

Q_s=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

H_T=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in the definition of Q_s.

$Y_s=Q_s$ for all vent stream categories listed in Table 1 except for Category E vent streams where $Y_s=(Q_s)(H_T)/3.6$.

E_{TOC}=Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients. The set of coefficients that apply to a vent stream can be obtained from Table 1.

TABLE 1.—TOTAL RESOURCE EFFECTIVENESS COEFFICIENTS FOR VENT STREAMS CONTROLLED BY AN INCINERATOR SUBJECT TO THE NEW SOURCE PERFORMANCE STANDARDS FOR REACTOR PROCESSES

	a	b	c	d	e	f
DESIGN CATEGORY A1. FOR HALOGENATED PROCESS VENT STREAMS, IF 0≤NET HEATING VALUE (MJ/scm)≤3.5: *Q_s=Vent Stream Flow Rate (scm/min)*						
$14.2 \le Q_s \le 18.8$	19.18370	0.27580	0.75762	−0.13064	0	0.01025
$18.8 < Q_s \le 699$	20.00563	0.27580	0.30387	−0.13064	0	0.01025
$699 < Q_s \le 1{,}400$	39.87022	0.29973	0.30387	−0.13064	0	0.01449
$1{,}400 < Q_s \le 2{,}100$	59.73481	0.31467	0.30387	−0.13064	0	0.01775
$2{,}100 < Q_s \le 2{,}800$	79.59941	0.32572	0.30387	−0.13064	0	0.02049
$2{,}800 < Q_s \le 3{,}500$	99.46400	0.33456	0.30387	−0.13064	0	0.02291
DESIGN CATEGORY A2. FOR HALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE (MJ/scm)>3.5: *Q_s=Vent Stream Flow Rate (scm/min)*						
$14.2 < Q_s \le 18.8$	18.84466	0.26742	−0.20044	0	0	0.01025
$18.8 < Q_s \le 699$	19.66658	0.26742	−0.25332	0	0	0.01025
$699 < Q_s \le 1{,}400$	39.19213	0.29062	−0.25332	0	0	0.01449
$1{,}400 < Q_s \le 2{,}100$	58.71768	0.30511	−0.25332	0	0	0.01775
$2{,}100 < Q_s \le 2{,}800$	78.24323	0.31582	−0 25332	0	0	0.02049
$2{,}800 < Q_s \le 3{,}500$	97.76879	0.32439	−0.25332	0	0	0.02291
DESIGN CATEGORY B. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0≤NET HEATING VALUE (MJ/scm)≤0.48: *Q_s=Vent Stream Flow Rate (scm/min)*						
$14.2 \le Q_s \le 1{,}340$	8.54245	0.10555	0.09030	−0.17109	0	0.01025
$1{,}340 < Q_s \le 2{,}690$	16.94386	0.11470	0.09030	−0.17109	0	0.01449
$2{,}690 < Q_s \le 4{,}040$	25.34528	0.12042	0.09030	−0.17109	0	0.01775
DESIGN CATEGORY C. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 0.48<NET HEATING VALUE (MJ/scm)≤1.9: *Q_s=Vent Stream Flow Rate (scm/min)*						
$14.2 \le Q_s \le 1{,}340$	9.25233	0.06105	0.31937	−0.16181	0	0.01025
$1{,}340 < Q_s \le 2{,}690$	18.36363	0.06635	0.31937	−0.16181	0	0.01449
$2{,}690 < Q_s \le 4{,}040$	27.47492	0.06965	0.31937	−0.16181	0	0.01775
DESIGN CATEGORY D. FOR NONHALOGENATED PROCESS VENT STREAMS, IF 1.9<NET HEATING VALUE (MJ/scm)≤3.6: *Q_s=Vent Stream Flow Rate (scm/min)*						
$14.2 \le Q_s \le 1{,}180$	6.67868	0.06943	0.02582	0	0	0.01025
$1{,}180 < Q_s \le 2{,}370$	13.21633	0.07546	0.02582	0	0	0.01449
$2{,}370 < Q_s \le 3{,}550$	19.75398	0.07922	0.02582	0	0	0.01755
DESIGN CATEGORY E. FOR NONHALOGENATED PROCESS VENT STREAMS, IF NET HEATING VALUE (MJ/scm)>3.6: *Y_s=Dilution Flow Rate (scm/min)=(Q_s)* (H_T)/3.6						
$14.2 \le Y_s \le 1{,}180$	6.67868	0	0	−0.00707	0.02220	0.01025
$1{,}180 < Y_s \le 2{,}370$	13.21633	0	0	−0.00707	0.02412	0.01449
$2{,}370 < Y_s \le 3{,}550$	19.75398	0	0	−0.00707	0.02533	0.01755

(ii) For a vent stream flow rate (scm/min) at a standard temperature of 20 °C that is less than 14.2 scm/min:

TRE=TRE index value.

Q_s=14.2 scm/min.

H_T=(FLOW)(HVAL)/14.2

where the following inputs are used:

FLOW=Vent stream flow rate (scm/min), at a standard temperature of 20 °C.

HVAL=Vent stream net heating value (MJ/scm), where the net enthalpy per mole of vent stream is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in definition of Q_s.

Y_s=14.2 scm/min for all vent streams except for Category E vent streams, where $Y_s=(14.2)(H_T)/3.6$.

E_{TOC}=Hourly emissions of TOC reported in kg/hr.

a, b, c, d, e, and f are coefficients. The set of coefficients that apply to a vent stream can be obtained from Table 1.

(2) The equation for calculating the TRE index value of a vent stream controlled by a flare is as follows:

$$\text{TRE} = \frac{1}{E_{TOC}}\left[a(Q_s) + b(Q_s)^{0.8} + c(Q_s)(H_T) + d(E_{TOC}) + e\right]$$

where:

TRE=TRE index value.

E_{TOC}=Hourly emission rate of TOC reported in kg/hr.

Q_s=Vent stream flow rate (scm/min) at a standard temperature of 20 °C.

H_T=Vent stream net heating value (MJ/scm) where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C as in the definition of Q_s.

a, b, c, d, and e are coefficients. The set of coefficients that apply to a vent stream can be obtained from Table 2.

TABLE 2.—TOTAL RESOURCE EFFECTIVENESS COEFFICIENTS FOR VENT STREAMS CONTROLLED BY A FLARE SUBJECT TO THE NEW SOURCE PERFORMANCE STANDARDS FOR REACTOR PROCESSES

	a	b	c	d	e
H_T<11.2 MJ/scm	2.25	0.288	−0.193	−0.0051	2.08
H_T≥11.2 MJ/scm	0.309	0.0619	−0.0043	−0.0034	2.08

(f) Each owner or operator of an affected facility seeking to comply with § 60.700(c)(2) or § 60.702(c) shall recalculate the TRE index value for that affected facility whenever process changes are made. Examples of process changes include changes in production capacity, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. The TRE index value shall be recalculated based on test data, or on best engineering estimates of the effects of the change on the recovery system.

(1) Where the recalculated TRE index value is less than or equal to 1.0, the owner or operator shall notify the Administrator within 1 week of the recalculation and shall conduct a performance test according to the methods and procedures required by § 60.704 in order to determine compliance with § 60.702 (a) or (b). Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(2) Where the recalculated TRE index value is less than or equal to 8.0 but greater than 1.0, the owner or operator shall conduct a performance test in accordance with § 60.8 and § 60.704 and shall comply with § 60.703, § 60.704 and § 60.705. Performance tests must be conducted as soon as possible after the process change but no later than 180 days from the time of the process change.

(g) Any owner or operator subject to the provisions of this subpart seeking to demonstrate compliance with § 60.700(c)(4) shall use Method 2, 2A, 2C, or 2D of appendix A to 40 CFR part 60, as appropriate, for determination of volumetric flow rate.

(h) Each owner or operator seeking to demonstrate that a reactor process vent stream has a TOC concentration for compliance with the low concentration exemption in § 60.700(c)(8) shall conduct an initial test to measure TOC concentration.

(1) The sampling site shall be selected as specified in paragraph (d)(1)(i) of this section.

(2) Method 18 or Method 25A of part 60, appendix A shall be used to measure concentration.

(3) Where Method 18 is used to qualify for the low concentration exclusion in § 60.700(c)(8), the procedures in § 60.704(b)(4) (i) and (iv) shall be used to measure TOC concentration, and the procedures of § 60.704(b)(3) shall be used to correct the TOC concentration to 3 percent oxygen. To qualify for the exclusion, the results must demonstrate that the concentration of TOC, corrected to 3 percent oxygen, is below 300 ppm by volume.

(4) Where Method 25A is used, the following procedures shall be used to calculate ppm by volume TOC concentration, corrected to 3 percent oxygen:

(i) Method 25A shall be used only if a single organic compound is greater than 50 percent of total TOC, by volume, in the reactor process vent stream. This compound shall be the principal organic compound.

(ii) The principal organic compound may be determined by either process knowledge or test data collected using an appropriate EPA Reference Method. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current reactor process vent stream conditions.

(iii) The principal organic compound shall be used as the calibration gas for Method 25A.

(iv) The span value for Method 25A shall be 300 ppmv.

(v) Use of Method 25A is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(vi) The owner or operator shall demonstrate that the concentration of TOC including methane and ethane measured by Method 25A, corrected to 3 percent oxygen, is below 150 ppm by volume to qualify for the low concentration exclusion in § 60.700(c)(8).

(vii) The concentration of TOC shall be corrected to 3 percent oxygen using the procedures and equation in paragraph (b)(3) of this section.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 61778, Oct. 17, 2000]

§ 60.705 Reporting and recordkeeping requirements.

(a) Each owner or operator subject to § 60.702 shall notify the Administrator of the specific provisions of § 60.702 (§ 60.702 (a), (b), or (c)) with which the owner or operator has elected to comply. Notification shall be submitted with the notification of initial start-up required by § 60.7(a)(3). If an owner or operator elects at a later date to use an alternative provision of § 60.702 with which he or she will comply, then the Administrator shall be notified by the owner or operator 90 days before implementing a change and, upon implementing the change, a performance test shall be performed as specified by § 60.704 no later than 180 days from initial start-up.

(b) Each owner or operator subject to the provisions of this subpart shall keep an up-to-date, readily accessible record of the following data measured during each performance test, and also include the following data in the report of the initial performance test required under § 60.8. Where a boiler or process heater with a design heat input capacity of 44 MW (150 million Btu/hour) or greater is used or where the reactor process vent stream is introduced as the primary fuel to any size boiler or process heater to comply with § 60.702(a), a report containing performance test data need not be submitted, but a report containing the information in § 60.705(b)(2)(i) is required. The same data specified in this section shall be submitted in the reports of all subsequently required performance tests where either the emission control efficiency of a combustion device, outlet concentration of TOC, or the TRE index value of a vent stream from a recovery system is determined.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.702(a) through use of either a thermal or catalytic incinerator:

(i) The average firebox temperature of the incinerator (or the average temperature upstream and downstream of the catalyst bed for a catalytic incinerator), measured at least every 15 minutes and averaged over the same time period of the performance testing, and

(ii) The percent reduction of TOC determined as specified in § 60.704(b) achieved by the incinerator, or the concentration of TOC (ppmv, by compound) determined as specified in § 60.704(b) at the outlet of the control device on a dry basis corrected to 3 percent oxygen.

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.702(a) through use of a boiler or process heater:

(i) A description of the location at which the vent stream is introduced into the boiler or process heater, and

(ii) The average combustion temperature of the boiler or process heater with a design heat input capacity of less than 44 MW (150 million Btu/hr) measured at least every 15 minutes and averaged over the same time period of the performance testing.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.702(b) through use of a smokeless flare, flare design (i.e., steam-assisted, air-assisted or nonassisted), all visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations made during the performance test, continuous records of the flare pilot flame monitoring, and records of all periods of operations during which the pilot flame is absent.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.702(c):

(i) Where an absorber is the final recovery device in the recovery system, the exit specific gravity (or alternative parameter which is a measure of the degree of absorbing liquid saturation, if approved by the Administrator), and average exit temperature, of the absorbing liquid measured at least every 15 minutes and averaged over the same time period of the performance testing (both measured while the vent stream is normally routed and constituted); or

(ii) Where a condenser is the final recovery device in the recovery system, the average exit (product side) temperature measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is routed and constituted normally; or

(iii) Where a carbon adsorber is the final recovery device in the recovery system, the total steam mass flow measured at least every 15 minutes and averaged over the same time period of the performance test (full carbon bed cycle), temperature of the carbon bed after regeneration [and within 15 minutes of completion of any cooling cycle(s)], and duration of the carbon bed steaming cycle (all measured while the vent stream is routed and constituted normally); or

(iv) As an alternative to § 60.705(b)(4) (i), (ii) or (iii), the concentration level or reading indicated by the organics monitoring device at the outlet of the absorber, condenser, or carbon adsorber, measured at least every 15 minutes and averaged over the same time period of the performance testing while the vent stream is normally routed and constituted.

(v) All measurements and calculations performed to determine the TRE index value of the vent stream.

(c) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under § 60.703 (a) and (c) as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where a combustion device is used to comply with § 60.702(a), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) For thermal incinerators, all 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.702(a) was determined.

(2) For catalytic incinerators, all 3-hour periods of operation during which the average temperature of the vent stream immediately before the catalyst bed is more than 28 °C (50 °F) below the average temperature of the vent stream during the most recent performance test at which compliance with §60.702(a) was determined. The owner or operator also shall record all 3-hour periods of operation during which the average temperature difference across the catalyst bed is less than 80 percent of the average temperature difference of the bed during the most recent performance test at which compliance with §60.702(a) was determined.

(3) All 3-hour periods of operation during which the average combustion temperature was more than 28 °C (50 °F) below the average combustion temperature during the most recent performance test at which compliance with §60.702(a) was determined for boilers or process heaters with a design heat input capacity of less than 44 MW (150 million Btu/hr) where the vent stream is introduced with the combustion air or as a secondary fuel.

(4) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under §60.702(a).

(d) Each owner or operator subject to the provisions of this subpart shall keep records of the following:

(1) Up-to-date, readily accessible continuous records of the flow indication specified under §60.703(a)(2)(i), §60.703(b)(2)(i) and §60.703(c)(1)(i), as well as up-to-date, readily accessible records of all periods and the duration when the vent stream is diverted from the control device.

(2) Where a seal mechanism is used to comply with §60.703(a)(2)(ii), §60.703(b)(2)(ii), and §60.703(c)(1)(ii), a record of continuous flow is not required. In such cases, the owner or operator shall keep up-to-date, readily accessible records of all monthly visual inspections of the seals as well as readily accessible records of all periods and the duration when the seal mechanism is broken, the bypass line valve position has changed, the serial number of the broken car-seal has changed, or when the key for a lock-and-key type configuration has been checked out.

(e) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the flare pilot flame monitoring specified under §60.703(b), as well as up-to-date, readily accessible records of all periods of operations in which the pilot flame is absent.

(f) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored under §60.703(d), as well as up-to-date, readily accessible records of periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. The Administrator may at any time require a report of these data. Where an owner or operator seeks to comply with §60.702(c), periods of operation during which the parameter boundaries established during the most recent performance tests are exceeded are defined as follows:

(1) Where an absorber is the final recovery device in a recovery system, and where an organic compound monitoring device is not used:

(i) All 3-hour periods of operation during which the average absorbing liquid temperature was more than 11 °C (20 °F) above the average absorbing liquid temperature during the most recent performance test, or

(ii) All 3-hour periods of operation during which the average absorbing liquid specific gravity was more than 0.1 unit above, or more than 0.1 unit below, the average absorbing liquid specific gravity during the most recent performance test (unless monitoring of an alternative parameter, which is a measure of the degree of absorbing liquid saturation, is approved by the Administrator, in which case he will define appropriate parameter boundaries and periods of operation during which they are exceeded).

(2) Where a condenser is the final recovery device in a system, and where an organic compound monitoring device is not used, all 3-hour periods of operation during which the average exit (product side) condenser operating temperature was more than 6 °C (11 °F) above the average exit (product side) operating temperature during the most recent performance test.

(3) Where a carbon adsorber is the final recovery device in a system, and where an organic compound monitoring device is not used:

(i) All carbon bed regeneration cycles during which the total mass steam flow was more than 10 percent below the total mass steam flow during the most recent performance test, or

(ii) All carbon bed regeneration cycles during which the temperature of the carbon bed after regeneration (and after completion of any cooling cycle(s)) was more than 10 percent or 5 °C greater, whichever is less stringent, than the carbon bed temperature (in degrees Celsius) during the most recent performance test.

(4) Where an absorber, condenser, or carbon adsorber is the final recovery device in the recovery system and where an organic compound monitoring device is used, all 3-hour periods of operation during which the average organic compound concentration level or reading of organic compounds in the exhaust gases is more than 20 percent greater than the exhaust gas organic compound concentration level or reading measured by the monitoring device during the most recent performance test.

(g) Each owner or operator of an affected facility subject to the provisions of this subpart and seeking to demonstrate compliance with § 60.702(c) shall keep up-to-date, readily accessible records of:

(1) Any changes in production capacity, feedstock type, or catalyst type, or of any replacement, removal or addition of recovery equipment or reactors;

(2) Any recalculation of the TRE index value performed pursuant to § 60.704(f); and

(3) The results of any performance test performed pursuant to the methods and procedures required by § 60.704(d).

(h) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the flow rate cutoff in § 60.700(c)(4) shall keep up-to-date, readily accessible records to indicate that the vent stream flow rate is less than 0.011 scm/min and of any change in equipment or process operation that increases the operating vent stream flow rate, including a measurement of the new vent stream flow rate.

(i) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the design production capacity provision in § 60.700(c)(3) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the design production capacity of the process unit in which the affected facility is located.

(j) Each owner or operator of an affected facility that seeks to comply with the requirements of this subpart by complying with the low concentration exemption in § 60.700(c)(8) shall keep up-to-date, readily accessible records of any change in equipment or process operation that increases the concentration of the vent stream of the affected facility.

(k) Each owner or operator subject to the provisions of this subpart is exempt from the quarterly reporting requirements contained in § 60.7(c) of the General Provisions.

(l) Each owner or operator that seeks to comply with the requirements of this subpart by complying with the requirements of § 60.700 (c)(2), (c)(3), or (c)(4) or § 60.702 shall submit to the Administrator semiannual reports of the following recorded information. The initial report shall be submitted within 6 months after the initial start-up date.

(1) Exceedances of monitored parameters recorded under § 60.705 (c), (f), and (g).

(2) All periods and duration recorded under § 60.705(d) when the vent stream is diverted from the control device to the atmosphere.

(3) All periods recorded under § 60.705(f) in which the pilot flame of the flare was absent.

(4) Any change in equipment or process operation that increases the operating vent stream flow rate above the low flow exemption level in § 60.700(c)(4), including a measurement of the new vent stream flow rate, as recorded under § 60.705(i). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to verify the recalculated flow value and to obtain the vent stream characteristics of heating value and $E_{TOC.}$ The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under any of the exemption provisions listed in § 60.700(c), except for the total resource effectiveness index greater than 8.0 exemption in § 60.700(c)(2), the facility must begin compliance with the requirements set forth in § 60.702.

(5) Any change in equipment or process operation, as recorded under paragraph (i) of this section, that increases the design production capacity above the low capacity exemption level in § 60.700(c)(3) and the new capacity resulting from the change for the reactor process unit containing the affected facility. These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. A performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and $E_{TOC.}$ The performance test is subject to the requirements of § 60.8. The facility must begin compliance with the requirements set forth in § 60.702 or § 60.700(d). If the facility chooses to comply with § 60.702, the facility may qualify for an exemption under § 60.700(c)(2), (4), or (8).

(6) Any recalculation of the TRE index value, as recorded under § 60.705(g).

(7) All periods recorded under § 60.705(d) in which the seal mechanism is broken or the by-pass line valve position has changed. A record of the serial number of the car-seal or a record to show that the key to unlock the bypass line valve was checked out must be maintained to demonstrate the period, the duration, and frequency in which the bypass line was operated.

(8) Any change in equipment or process operation that increases the vent stream concentration above the low concentration exemption level in § 60.700(c)(8), including a measurement of the new vent stream concentration, as recorded under § 60.705(j). These must be reported as soon as possible after the change and no later than 180 days after the change. These reports may be submitted either in conjunction with semiannual reports or as a single separate report. If the vent stream concentration is above 300 ppmv as measured using Method 18 or above 150 ppmv as measured using Method 25A, a performance test must be completed within the same time period to obtain the vent stream flow rate, heating value, and $E_{TOC.}$ The performance test is subject to the requirements of § 60.8 of the General Provisions. Unless the facility qualifies for an exemption under any of the exemption provisions listed in § 60.700(c), except for the TRE index greater than 8.0 exemption in § 60.700(c)(2), the facility must begin compliance with the requirements set forth in § 60.702.

(m) The requirements of § 60.705(l) remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with § 60.705(l), provided that they comply with the requirements established by the State.

(n) Each owner or operator that seeks to demonstrate compliance with § 60.700(c)(3) must submit to the Administrator an initial report detailing the design production capacity of the process unit.

(o) Each owner or operator that seeks to demonstrate compliance with § 60.700(c)(4) must submit to the Administrator an initial report including a flow rate measurement using the test methods specified in § 60.704.

(p) Each owner or operator that seeks to demonstrate compliance with § 60.700(c)(8) must submit to the Administrator an initial report including a concentration measurement using the test method specified in § 60.704.

(q) The Administrator will specify appropriate reporting and recordkeeping requirements where the owner or operator of an affected facility complies with the standards specified under § 60.702 other than as provided under § 60.703 (a), (b), (c), and (d).

(r) Each owner or operator whose reactor process vent stream is routed to a distillation unit subject to subpart NNN and who seeks to demonstrate compliance with § 60.700(c)(5) shall submit to the Administrator a process design description as part of the initial report. This process design description must be retained for the life of the process. No other records or reports would be required unless process changes are made.

(s) Each owner or operator who seeks to demonstrate compliance with § 60.702 (a) or (b) using a control device must maintain on file a schematic diagram of the affected vent streams, collection system(s), fuel systems, control devices, and bypass systems as part of the initial report. This schematic diagram must be retained for the life of the system.

(t) Each owner or operator that seeks to demonstrate compliance with § 60.700(c)(2) must maintain a record of the initial test for determining the total resource effectiveness index and the results of the initial total resource effectiveness index calculation.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995; 65 FR 78279, Dec. 14, 2000]

§ 60.706 Reconstruction.

(a) For purposes of this subpart "fixed capital cost of the new components," as used in § 60.15, includes the fixed capital cost of all depreciable components which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following June 29, 1990. For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

(b) [Reserved]

§ 60.707 Chemicals affected by subpart RRR.

Chemical	CAS No.[1]
Acetaldehyde	75–07–0
Acetic acid	64–19–7
Acetic anhydride	108–24–7
Acetone	67–64–1
Acetone cyanohydrin	75–86–5
Acetylene	74–86–2
Acrylic acid	79–10–7
Acrylonitrile	107–13–1
Adipic acid	124–04–9
Adiponitrile	111–69–3
Alcohols, C–11 or lower, mixtures.	
Alcohols, C–12 or higher, mixtures.	
Alcohols, C–12 or higher, unmixed.	
Allyl chloride	107–05–1
Amylene	513–35–9
Amylenes, mixed.	
Aniline	62–53–3
Benzene	71–43–2
Benzenesulfonic acid	98–11–3
Benzenesulfonic acid C_{10-16}-alkyl derivatives, sodium salts	68081–81–2
Benzyl chloride	100–44–7
Bisphenol A	80–05–7
Brometone	76–08–4
1,3-Butadiene	106–99–0
Butadiene and butene fractions.	
n-Butane	106–97–8
1,4-Butanediol	110–63–4
Butanes, mixed.	
1-Butene	106–98–9
2-Butene	25167–67–3
Butenes, mixed.	
n-Butyl acetate	123–86–4
Butyl acrylate	141–32–2
n-Butyl alcohol	71–36–3
sec-Butyl alcohol	78–92–2
tert-Butyl alcohol	75–65–0
Butylbenzyl phthalate	85–68–7
tert-Butyl hydroperoxide	75–91–2
2-Butyne-1,4-diol	110–65–6
Butyraldehyde	123–72–8
Butyric anhydride	106–31–0
Caprolactam	105–60–2
Carbon disulfide	75–15–0
Carbon tetrachloride	56–23–5
Chloroacetic acid	79–11–8
Chlorobenzene	108–90–7
Chlorodifluoromethane	75–45–6
Chloroform	67–66–3
p-Chloronitrobenzene	100–00–5
Citric acid	77–92–9

Chemical	CAS No.[1]
Cumene	98–82–8
Cumene hydroperoxide	80–15–9
Cyanuric chloride	108–77–0
Cyclohexane	110–82–7
Cyclohexane, oxidized	68512–15–2
Cyclohexanol	108–93–0
Cyclohexanone	108–94–1
Cyclohexanone oxime	100–64–1
Cyclohexene	110–83–8
Cyclopropane	75–19–4
Diacetone alcohol	123–42–2
1,4-Dichlorobutene	110–57–6
3,4-Dichloro-1-butene	64037–54–3
Dichlorodifluoromethane	75–71–8
Dichlorodimethylsilane	75–78–5
Dichlorofluoromethane	75–43–4
Diethanolamine	111–42–2
Diethylbenzene	25340–17–4
Diethylene glycol	111–46–6
Di-isodecyl phthalate	26761–40–0
Dimethyl terephthalate	120–61–6
2,4-(and 2,6)-dinitrotoluene	121–14–2 606–20–2
Dioctyl phthalate	117–81–7
Dodecene	25378–22–7
Dodecylbenzene, nonlinear.	
Dodecylbenzenesulfonic acid	27176–87–0
Dodecylbenzenesulfonic acid, sodium salt	25155–30–0
Epichlorohydrin	106–89–8
Ethanol	64–17–5
Ethanolamine	141–43–5
Ethyl acetate	141–78–6
Ethyl acrylate	140–88–5
Ethylbenzene	100–41–4
Ethyl chloride	75–00–3
Ethylene	74–85–1
Ethylene dibromide	106–93–4
Ethylene dichloride	107–06–2
Ethylene glycol	107–21–1
Ethylene glycol monobutyl ether	111–76–2
Ethylene glycol monoethyl ether acetate	111–15–9
Ethylene glycol monomethyl ether	109–86–4
Ethylene oxide	75–21–8
2-Ethylhexyl alcohol	104–76–7
(2-Ethylhexyl) amine	104–75–6
6-Ethyl-1,2,3,4-tetrahydro 9,10-anthracenedione	15547–17–8
Formaldehyde	50–00–0
Glycerol	56–81–5
n-Heptane	142–82–5
Heptenes (mixed).	
Hexamethylene diamine	124–09–4
Hexamethylene diamine adipate	3323–53–3
Hexamethylenetetramine	100–97–0
Hexane	110–54–3
Isobutane	75–28–5
Isobutanol	78–83–1
Isobutylene	115–11–7
Isobutyraldehyde	78–84–2
Isopentane	78–78–4
Isoprene	78–79–5
Isopropanol	67–63–0
Ketene	463–51–4
Linear alcohols, ethoxylated, mixed.	
Linear alcohols, ethoxylated, and sulfated, sodium salt, mixed.	
Linear alcohols, sulfated, sodium salt, mixed.	
Linear alkylbenzene	123–01–3
Maleic anhydride	108–31–6
Mesityl oxide	141–79–7
Methanol	67–56–1
Methylamine	74–39–5
ar-Methylbenzenediamine	25376–45–8
Methyl chloride	74–87–3
Methylene chloride	75–09–2
Methyl ethyl ketone	78–93–3
Methyl isobutyl ketone	108–10–1
Methyl methacrylate	80–62–6
1-Methyl-2-pyrrolidone	872–50–4
Methyl tert-butyl ether.	
Naphthalene	91–20–3
Nitrobenzene	98–95–3
1-Nonene	27215–95–8
Nonyl alcohol	143–08–8
Nonylphenol	25154–52–3
Nonylphenol, ethoxylated	9016–45–9
Octene	25377–83–7
Oil-soluble petroleum sulfonate, calcium salt.	
Pentaerythritol	115–77–5
3-Pentenenitrile	4635–87–4
Pentenes, mixed	109–67–1
Perchloroethylene	127–18–4
Phenol	108–95–2
1-Phenylethyl hydroperoxide	3071–32–7
Phenylpropane	103–65–1
Phosgene	75–44–5
Phthalic anhydride	85–44–9
Propane	74–98–6
Propionaldehyde	123–38–6
Propyl alcohol	71–23–8
Propylene	115–07–1
Propylene glycol	57–55–6
Propylene oxide	75–56–9
Sorbitol	50–70–4
Styrene	100–42–5
Terephthalic acid	100–21–0
Tetraethyl lead	78–00–2
Tetrahydrofuran	109–99–9
Tetra (methyl-ethyl) lead.	
Tetramethyl lead	75–74–1
Toluene	108–88–3
Toluene-2,4-diamine	95–80–7
Toluene-2,4-(and, 2,6)-diisocyanate (80/20 mixture)	26471–62–5
1,1,1-Trichloroethane	71–55–6
1,1,2-Trichloroethane	79–00–5
Trichloroethylene	79–01–6
Trichlorofluoromethane	75–69–4
1,1,2-Trichloro-1,2,2-trifluoroethane	76–13–1
Triethanolamine	102–71–6
Triethylene glycol	112–27–6
Vinyl acetate	108–05–4
Vinyl chloride	75–01–4
Vinylidene chloride	75–35–4
m-Xylene	108–38–3
o-Xylene	95–47–6
p-Xylene	106–42–3
Xylenes (mixed)	1330–20–7

[1] CAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

[58 FR 45962, Aug. 31, 1993, as amended at 60 FR 58238, Nov. 27, 1995]

§ 60.708 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: § 60.703(e).

Subpart SSS—Standards of Performance for Magnetic Tape Coating Facilities

SOURCE: 53 FR 38914, Oct. 3, 1988, unless otherwise noted.

§ 60.710 Applicability and designation of affected facility.

(a) The affected facilities to which the provisions of this subpart apply are:

(1) Each coating operation; and

(2) Each piece of coating mix preparation equipment.

(b) Any new coating operation that utilizes less than 38 m^3 of solvent or any modified or reconstructed coating operation that utilizes less than 370 m^3 of solvent for the manufacture of magnetic tape per calendar year is subject only to the requirements of §§ 60.714(a), 60.717(b), and 60.717(c). If the amount of solvent utilized for the manufacture of magnetic tape equals or exceeds these amounts in any calendar year, the facility is subject to § 60.712 and all other sections of this subpart. Once a facility has become subject to § 60.712 and all other sections of this subpart, it will remain subject to those requirements regardless of changes in annual solvent utilization.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 22, 1986.

§ 60.711 Definitions, symbols, and cross reference tables.

(a) All terms used in this subpart that are not defined below have the meaning given to them in the Act and in subpart A of this part.

(1) *Base film* means the substrate that is coated to produce magnetic tape.

(2) *Capture system* means any device or combination of devices that contains or collects an airborne pollutant and directs it into a duct.

(3) *Coating applicator* means any apparatus used to apply a coating to a continuous base film.

(4) *Coating mix preparation equipment* means all mills, mixers, holding tanks, polishing tanks, and other equipment used in the preparation of the magnetic coating formulation but does not include those mills that do not emit VOC because they are closed, sealed, and operated under pressure.

(5) *Coating operation* means any coating applicator, flashoff area, and drying oven located between a base film unwind station and a base film rewind station that coat a continuous base film to produce magnetic tape.

(6) *Common emission control device* means a control device controlling emissions from the coating operation as well as from another emission source within the plant.

(7) *Concurrent* means construction of a control device is commenced or completed within the period beginning 6 months prior to the date construction of affected coating mix preparation equipment commences and ending 2 years after the date construction of affected coating mix preparation equipment is completed.

(8) *Control device* means any apparatus that reduces the quantity of a pollutant emitted to the air.

(9) *Cover* means, with respect to coating mix preparation equipment, a device that lies over the equipment opening to prevent VOC from escaping and that meets the requirements found in § 60.712(c)(1)–(5).

(10) *Drying oven* means a chamber in which heat is used to bake, cure, polymerize, or dry a surface coating.

(11) *Equivalent diameter* means four times the area of an opening divided by its perimeter.

(12) *Flashoff area* means the portion of a coating operation between the coating applicator and the drying oven where solvent begins to evaporate from the coated base film.

(13) *Magnetic tape* means any flexible substrate that is covered on one or both sides with a coating containing magnetic particles and that is used for audio or video recording or information storage.

(14) *Natural draft opening* means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft across such an opening is

a consequence of the difference in pressures on either side of the wall containing the opening.

(15) *Nominal 1-month period* means a calendar month or, if established prior to the performance test in a statement submitted with notification of anticipated startup pursuant to 40 CFR 60.7(a)(2), a similar monthly time period (e.g., 30-day month or accounting month).

(16) *Temporary enclosure* means a total enclosure that is constructed for the sole purpose of measuring the fugitive emissions from an affected facility. A temporary enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on the performance of the permanent capture system. A temporary enclosure will be assumed to achieve total capture of fugitive VOC emissions if it conforms to the requirements found in § 60.713(b)(5)(i) and if all natural draft openings are at least four duct or hood equivalent diameters away from each exhaust duct or hood. Alternatively, the owner or operator may apply to the Administrator for approval of a temporary enclosure on a case-by-case basis.

(17) *Total enclosure* means a structure that is constructed around a source of emissions so that all VOC emissions are collected and exhausted through a stack or duct. With a total enclosure, there will be no fugitive emissions, only stack emissions. The only openings in a total enclosure are forced makeup air and exhaust ducts and any natural draft openings such as those that allow raw materials to enter and exit the enclosure for processing. All access doors or windows are closed during routine operation of the enclosed source. Brief, occasional openings of such doors or windows to accommodate process equipment adjustments are acceptable, but, if such openings are routine or if an access door remains open during the entire operation, the access door must be considered a natural draft opening. The average inward face velocity across the natural draft openings of the enclosure must be calculated including the area of such access doors. The drying oven itself may be part of the total enclosure. A permanent enclosure that meets the requirements found in § 60.713(b)(5)(i) is assumed to be a total enclosure. The owner or operator of a permanent enclosure that does not meet the requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. Such approval shall be granted upon a demonstration to the satisfaction of the Administrator that all VOC emissions are contained and vented to the control device.

(18) *Utilize* refers to the use of solvent that is delivered to coating mix preparation equipment for the purpose of formulating coatings to be applied on an affected coating operation and any other solvent (e.g., dilution solvent) that is added at any point in the manufacturing process.

(19) *VOC content of the coating applied* means the product of Method 24 VOC analyses or formulation data (if the data are demonstrated to be equivalent to Method 24 results) and the total volume of coating fed to the coating applicator. This quantity is intended to include all VOC that actually are emitted from the coating operation in the gaseous phase. Thus, for purposes of the liquid-liquid VOC material balance in § 60.713(b)(1), any VOC (including dilution solvent) added to the coatings must be accounted for, and any VOC contained in waste coatings or retained in the final product may be measured and subtracted from the total. (These adjustments are not necessary for the gaseous emission test compliance provisions of § 60.713(b).)

(20) *Volatile Organic Compounds* or *VOC* means any organic compounds that participate in atmospheric photochemical reactions or that are measured by Method 18, 24, 25, or 25A or an equivalent or alternative method as defined in 40 CFR 60.2.

(b) The nomenclature used in this subpart has the following meaning:

(1) A_k=the area of each natural draft opening (k) in a total enclosure, in square meters.

(2) C_{aj}=the concentration of VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

(3) C_{bi}=the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

(4) C_{di}=the concentration of VOC in each gas stream (i) entering the emission control

device from the affected coating operation, in parts per million by volume.

(5) C_{fk}=the concentration of VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in parts per million by volume.

(6) C_{gv}=the concentration of VOC in the gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For the purposes of calculating the efficiency of the individual adsorber vessel, C_{gv} may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts.

(7) C_{hv}=the concentration of VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

(8) E=the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

(9) F=the VOC emission capture efficiency of the VOC capture system achieved for the duration of the emission test (expressed as a fraction).

(10) FV=the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

(11) G=the calculated weighted average mass of VOC per volume of coating solids (in kilograms per liter) applied each nominal 1-month period.

(12) H_v=the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

(13) H_{sys}=the carbon adsorption system efficiency calculated when each adsorber vessel has an individual exhaust stack.

(14) L_{si}=the volume fraction of solids in each coating (i) applied during a nominal 1-month period as determined from the facility's formulation records.

(15) M_{ci}=the total mass in kilograms of each coating (i) applied at an affected coating operation during a nominal 1-month period as determined from facility records. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the mass of the coating has been determined.

(16) M_r=the total mass in kilograms of VOC recovered for a nominal 1-month period.

(17) Q_{aj}=the volumetric flow rate of each gas stream (j) exiting the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(18) Q_{bi}=the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(19) Q_{di}=the volumetric flow rate of each gas stream (i) entering the emission control device from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(20) Q_{fk}=the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(21) Q_{gv}=the volumetric flow rate of the gas stream entering each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration. For purposes of calculating the efficiency of the individual adsorber vessel, the value of Q_{gv} can be assumed to equal the value of Q_{hv} measured for that adsorber vessel.

(22) Q_{hv}=the volumetric flow rate of the gas stream exiting each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

(23) Q_{ini}=the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct, in standard cubic meters per hour (wet basis).

(24) Q_{outj}=the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood, in standard cubic meters per hour (wet basis).

(25) R=the overall VOC emission reduction achieved for the duration of the emission test (expressed as a percentage).

(26) RS_i=the total mass (kg) of VOC retained in the coated base film after oven drying for a given magnetic tape product.

(27) V_{ci}=the total volume in liters of each coating (i) applied during a nominal 1-month period as determined from facility records.

(28) W_{oi}=the weight fraction of VOC in each coating (i) applied at an affected coating operation during a nominal 1-month period as determined by Method 24. This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the weight fraction of VOC in the coating has been determined.

(c) Tables 1a and 1b present a cross reference of the affected facility status and the relevant section(s) of the regulation.

TABLE 1A—CROSS REFERENCE [a] [b]

Status	Standard [c]	Compliance provisions [d]—§ 60.713
A. Coating operation alone:		
New	§ 60.712(a): Recover or destroy at least 93 percent of the VOC applied	(b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (c), (d)
Modified or reconstructed:		
1. If at least 90 percent of the VOC applied is recovered or destroyed prior to modification/reconstruction.	§ 60.712(b)(1): (i) Maintain demonstrated level of VOC control or 93 percent, whichever is lower. (ii) If the VOC control device is subsequently replaced, the new control device must be at least 95 percent efficient, a demonstration must be made that the overall level of VOC control is at least as high as required with the old control device (90 to 93 percent) and, if the demonstrated level is higher than the old level, maintain the higher level of control (up to 93 percent).	(a)(1), (a)(3), (b)(1), (b)(2), (b)(3), (b)(4), (c), (d)
2. If existing coating operation has a total enclosure vented to a control device that is at least 92 percent efficient.	§ 60.712(b)(2): (i) Continue to vent all VOC emissions to the control device and maintain control efficiency at or above the demonstrated level or 95 percent, whichever is lower. (ii) If the VOC control device is subsequently replaced, the new control device must be at least 95 percent efficient and all VOC emissions must be vented from the total enclosure to the new control device.	(a)(2), (b)(5), (c), (d)
3. If existing coating operation is not in the previous two categories.	§ 60.712(b)(3): Recover or destroy at least 93 percent of the VOC applied	(b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (c), (d)
B. Coating mix preparation equipment alone:		
New:		
1. With concurrent construction of new VOC control device (other than a condenser) on the coating operation.	§ 60.712(c): Install and use covers and vent to a control device that is at least 95 percent efficient [e].	(b)(6)
2. Without concurrent construction of new VOC control device on the coating operation *or* with concurrent construction of a condenser.	§ 60.712 (d)(1) *or* (d)(2): Install and use covers and vent to a control device *or* install and use covers [e].	(b)(7), (b)(8)
Modified or reconstructed	§ 60.712 (d)(1) *or* (d)(2): Install and use covers and vent to a control device *or* install and use covers [e].	(b)(7), (b)(8)
C. Both coating operation and coating mix preparation equipment: New and modified or reconstructed.	§ 60.712(e): In lieu of standards in § 60.712(a)–(d), use coatings containing a maximum of 0.20 kg VOC per liter of coating solids.	(b)(9)

[a] This table is presented for the convenience of the user and is not intended to supercede the language of the regulation. For the details of the requirements, refer to the text of the regulation.

[b] Refer to Part B to determine which subsections of §§ 60.714, 60.715, and 60.717 correspond to each compliance provision (§ 60.713).

[c] As per § 60.710(b), any new coating operation with solvent utilization <38 m^3/yr or any modified or reconstructed coating operation with solvent utilization <370 m^3/yr is exempt from the VOC standards (§ 60.712). Such coating operations are subject only to §§ 60.714(a), 60.717(b), and 60.717(c). However, should a coating operation once exceed the applicable annual solvent utilization cutoff, that coating operation shall be subject to the VOC standards (§ 60.712) and all other sections of the subpart. Once this has occurred, the coating operation shall remain subject to those requirements regardless of changes in annual solvent utilization.

[d] As applicable.

[e] Section 60.716 permits the use of an alternative means of VOC emission limitation that achieves an equivalent or greater VOC emission reduction.

TABLE 1B—CROSS REFERENCE

Compliance provisions [a]—§60.713	Test methods—§ 60.715	Category/equipment [b]	Installation of monitoring devices and recordkeeping—§ 60.714	Reporting and monitoring requirements [c]—§ 60.717
A. Coating operation alone:				
(b)(1)—When emissions from only the affected coating operation are controlled by a solvent recovery device, perform a liquid-liquid VOC material balance.	(a)		(b), (i), (k)	(a), (d)(1), (e), (h), (i)
(b)(2)—When emissions from only the affected coating operation are controlled by an incinerator or when a common emission control device (other than a carbon adsorption system with individual exhaust stacks for each adsorber vessel) is used to control emissions from an affected coating operation as well as from other sources of VOC, perform a gaseous emission test.	(b)–(g)	General	(i), (k)	(a), (e), (h), (i)
		CA	(c)	(d)(3), (d)(4)
		CO	(d)	(d)(5)
		TI	(e)	(d)(6)
		CI	(f)	(d)(7)
		PE, TE	(g)	(d)(8)
(b)(3)—When emissions from both the affected coating operation and from other sources of VOC are controlled by a carbon adsorption system with individual exhaust stacks for each adsorber vessel, perform a gaseous emission test.	(b)–(g)	General	(i), (k)	(a), (e), (h), (i)
		CA	(c)	(d)(3), (d)(4)
		PE, TE	(g)	(d)(8)
(b)(4)—When emissions from more than one affected coating operation are vented through the same duct to a control device also controlling emissions from nonaffected sources that are vented separately from the affected coating operations, consider the combined affected coating operations as a single emission source and conduct a compliance test described in § 60.713(b)(2) or (3).	(b)–(g)	General	(i), (k)	(a), (e), (h), (i)
		CA	(c)	(d)(3), (d)(4)
		CO	(d)	(d)(5)
		TI	(e)	(d)(6)
		CI	(f)	(d)(7)
		PE, TE	(g)	(d)(8)
(b)(5)—Alternative to § 60.713(b)(1)–(4): Demonstrate that a total enclosure is installed around the coating operation and that all VOC emissions are vented to a control device with the specified efficiency.	(b)–(g)	General	(i), (k)	(a), (e) (h), (i)
		CA	(c)	(d)(3), (d)(4)
		CO	(d)	(d)(5)
		TI	(e)	(d)(6)
		CI	(f)	(d)(7)
		TE	(h)	(d)(8)
B. Coating mix preparation equipment alone:				
(b)(6)—Demonstrate that covers meeting the requirements of § 60.712(c)(1)–(5) are installed and used properly; procedures detailing the proper use of covers are posted; the mix equipment is vented to a control device; and the control device efficiency is greater than or equal to 95 percent.	(b)–(g)	General	(k)	(a), (e), (h), (i)
		CA	(c)	(d)(3), (d)(4)
		TI	(e)	(d)(6)
		CI	(f)	(d)(7)
(b)(7)—Demonstrate that covers meeting the requirements of § 60.712(c)(1)–(5) are installed and used properly; procedures detailing the proper use of covers are posted; and the mix equipment is vented to a control device.				
(b)(8)—Demonstrate that covers meeting the requirement of § 60.712(c)(1)–(5) are installed and used properly and that procedures detailing the proper use of the covers are posted.				
C. Both coating operation and coating mix preparation equipment: (b)(9)—Determine that weighted average mass of VOC in the coating per volume of coating solids applied for each month.	(a)		(i), (j) (k)	(d)(2), (e), (g), (h), (i)

[a] Section 60.713(a) specifies the procedures to be used prior to modification/reconstruction to establish the applicability of the VOC standards in § 60.712(b)(1) and (2) for modified/reconstructed coating operations. Section 60.713(a)(1) requires the use of the procedures of § 60.713(b)(1), (2), (3), or (4) to demonstrate prior to modification/reconstruction that 90 percent of the applied VOC is recovered or destroyed. Section 60.713(a)(2) requires the use of procedures of §60.713(b)(5) to demonstrate prior to modification/reconstruction that the coating operation has a total enclosure vented to a control device that is at least 92 percent efficient. Sections 60.713(c) and (d) do not have corresponding test methods, monitoring, reporting, or recordkeeping requirements.

[b] TI = thermal incinerator; CI = catalytic incinerator; CA = carbon adsorber; CO = condenser; PE = partial enclosure; TE = total enclosure.

[c] See § 60.717(f) for additional reporting requirements when coating mix preparation equipment is constructed at a time when no coating operation is being constructed. See § 60.717(g) for addition reporting requirements when coating mix preparation equipment is constructed at the same time as an affected coating operation.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988; 53 FR 49822, Dec. 9, 1988]

§60.712 Standards for volatile organic compounds.

Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by §60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated or 180 days after initial startup, whichever date comes first.

(a) Each owner or operator shall control emissions from a new coating operation by recovering or destroying at least 93 percent of the VOC content of the coating applied at the coating applicator.

(b) Each owner or operator of a modified or reconstructed coating operation shall meet the appropriate standard set out in (b)(1), (2), or (3) of this section.

(1) For coating operations demonstrated prior to modification or reconstruction pursuant to §60.713(a)(1) to have emissions controlled by the recovery or destruction of at least 90 percent of the VOC content of the coating applied at the coating applicator.

(i) Subject to the provisions of (b)(1)(ii) of this section, each owner or operator shall continue to control emissions from the coating operation to at least the demonstrated level or 93 percent, whichever is lower.

(ii) If the VOC control device in use during the emission reduction demonstration made pursuant to §60.713(a)(1) is subsequently replaced, each owner or operator shall:

(A) Install a control device that is at least 95 percent efficient; and

(B) Control emissions from the coating operation to at least the level determined pursuant to §60.713(a)(3)(ii).

(2) For coating operations demonstrated prior to modification or reconstruction pursuant to §60.713(a)(2) to have a total enclosure installed around the coating operation and all VOC emissions ventilated to a control device that is at least 92 percent efficient.

(i) Subject to the provisions of (b)(2)(ii) of this section, each owner or operator shall continue to ventilate all VOC emissions from the total enclosure to the control device and maintain control device efficiency at or above the demonstrated level or 95 percent, whichever is lower.

(ii) If the VOC control device in use during the control device efficiency demonstration made pursuant to §60.713(a)(2) is subsequently replaced, each owner or operator shall install a VOC control device that is at least 95 percent efficient and ventilate all VOC emissions from the total enclosure to the control device.

(3) For coating operations not subject to paragraph (b)(1) or (2) of this section, each owner or operator shall control emissions from the coating operation by recovering or destroying at least 93 percent of the VOC content of the coating applied at the coating applicator.

(c) Each owner or operator constructing new coating mix preparation equipment with concurrent construction of a new VOC control device (other than a condenser) on a magnetic tape coating operation shall control emissions from the coating mix preparation equipment by installing and using a cover on each piece of equipment and venting the equipment to a 95 percent efficient control device. Each cover shall meet the following specifications:

(1) Cover shall be closed at all times except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with cover in place. Such activities shall be carried out through ports of the minimum practical size.

(2) Cover shall extend at least 2 cm beyond the outer rim of the opening or shall be attached to the rim;

(3) Cover shall be of such design and construction that contact is maintained between cover and rim along the entire perimeter;

(4) Any breach in the cover (such as an opening for insertion of a mixer shaft or port for addition of ingredients) shall be covered consistent with (c)(2) and (3) of this section when not actively in use. An opening sufficient to allow safe clearance for a mixer shaft is acceptable during those periods when the shaft is in place; and

(5) A polyethylene or nonpermanent cover may be used provided it meets

the requirements of (c)(2), (3), and (4) of this section. Such a cover shall not be reused after once being removed.

(d) Each owner or operator of affected coating mix preparation equipment not subject to § 60.712(c) shall control emissions from the coating mix preparation equipment by either:

(1) Installing and using a cover that meets the specifications in paragraphs (c)(1)–(5) of this section and venting VOC emissions from the equipment to a VOC control device; or

(2) Installing and using a cover that meets the specifications in paragraphs (c)(1)–(5) of this section.

(e) In lieu of complying with § 60.712(a) through (d), each owner or operator may use coatings that contain a maximum of 0.20 kg of VOC per liter of coating solids as calculated on a weighted average basis for each nominal 1-month period.

§ 60.713 Compliance provisions.

(a) Applicability of § 60.712(b)(1) and (2) (standards for modified or reconstructed coating operations) and determination of control level required in § 60.712(b)(1)(ii)(B).

(1) To establish applicability of § 60.712(b)(1), each owner or operator must demonstrate, prior to modification or reconstruction, that at least 90 percent of the VOC content of the coating applied at the coating applicator is recovered or destroyed. Such demonstration shall be made using the procedures of paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section, as appropriate.

(2) To establish applicability of § 60.712(b)(2), each owner or operator must demonstrate, prior to modification or reconstruction, that a total enclosure is installed around the existing coating operation and that all VOC emissions are ventilated to a control device that is at least 92 percent efficient. Such demonstration shall be made using the procedures of § 60.713(b)(5).

(3) To determine the level of control required in § 60.712(b)(1)(ii)(B), the owner or operator must demonstrate:

(i) That the VOC control device subsequently installed is at least 95 percent efficient. Such demonstration shall be made using Equation (2) specified in paragraph (b)(2)(iv) of this section or Equations (4) and (5) specified in paragraphs (b)(3)(iv) and (v) of this section, as applicable, and the test methods and procedures specified in § 60.715(b)–(g); and

(ii) That the overall level of control after the VOC control device is installed is at least as high as the level demonstrated prior to modification or reconstruction pursuant to paragraph (a)(1) of this section. Such demonstrations shall be made using the procedures of paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section, as appropriate. The required overall level of control subsequent to this demonstration shall be the level so demonstrated or 93 percent, whichever is lower.

(b) Compliance demonstrations for § 60.712(a), (b)(1), (b)(2), (b)(3), (c), (d), and (e).

(1) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when emissions from only the affected coating operations are controlled by a dedicated solvent recovery device, each owner or operator of the affected coating operation shall perform a liquid-liquid VOC material balance over each and every nominal 1-month period. When demonstrating compliance by this procedure, § 60.8(f) of the General Provisions does not apply. The amount of liquid VOC applied and recovered shall be determined as discussed in paragraph (b)(1)(iii) of this section. The overall VOC emission reduction (R) is calculated using the following equation:

$$R = \frac{M_r}{\sum_{i=1}^{n} [W_{oi} M_{ci} - RS_i]} \times 100$$

(Equation 1)

(i) The value of RS_i is zero unless the owner or operator submits the following information to the Administrator for approval of a measured value of RS_i that is greater than zero:

(A) Measurement techniques; and

(B) Documentation that the measured value of RS_i exceeds zero.

(ii) The measurement techniques of paragraph (b)(1)(i)(A) of this section shall be submitted to the Administrator for approval with the notification of anticipated startup required under §60.7(a)(2) of the General Provisions.

(iii) Each owner or operator demonstrating compliance by the test method described in paragraph (b)(1) of this section shall:

(A) Measure the amount of coating applied at the coating applicator;

(B) Determine the VOC content of all coatings applied using the test method specified in §60.715(a);

(C) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of VOC recovered by the solvent recovery device over each nominal 1-month period. The device shall be certified by the manufacturer to be accurate to within ±2.0 percent;

(D) Measure the amount of VOC recovered; and

(E) Calculate the overall VOC emission reduction (R) for each and every nominal 1-month period using Equation 1.

(iv) For facilities subject to §60.712 (a) or (b)(3), compliance is demonstrated if the value of R is equal to or greater than 93 percent.

(v) Subject to the provisions of (b)(1)(vi) of this section, for facilities subject to §60.712(b)(1), compliance is demonstrated if the value of R is equal to or greater than the percent reduction demonstrated pursuant to §60.713(a)(1) prior to modification or reconstruction or 93 percent whichever is lower.

(vi) For facilities subject to §60.712(b)(1)(ii), compliance is demonstrated if the value of E (control device efficiency) is greater than or equal to 0.95 and if the value of R is equal to or greater than the percent reduction demonstrated pursuant to §60.713(a)(3) or 93 percent, whichever is lower.

(2) To demonstrate compliance with §60.712(a), (b)(1), or (b)(3) (standards for coating operations) when the emissions from only an affected coating operation are controlled by a dedicated incinerator or when a common emission control device (other than a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel) is used to control emissions from an affected coating operation as well as from other sources of VOC, each owner or operator of an affected coating operation shall perform a gaseous emission test using the following procedures:

(i) Construct the overall VOC emission reduction system so that all volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in §60.715(b) through (g);

(ii) Determine capture efficiency from the coating operation by capturing, venting, and measuring all VOC emissions from the operation. During a performance test, the owner or operator of an affected coating operation located in an area with other sources of VOC shall isolate the coating operation emissions from all other sources of VOC by one of the following methods:

(A) Build a temporary enclosure (see §60.711(a)(16)) around the affected coating operation; or

(B) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected coating operation through any building ventilation system and other room exhausts such as drying ovens. All ventilation air must be vented through stacks suitable for testing;

(iii) Operate the emission control device with all emission sources connected and operating;

(iv) Determine the efficiency (E) of the control device using the following equation:

$$E = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{p} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi}}$$

(Equation 2)

(v) Determine the efficiency (F) of the VOC capture system using the following equation:

$$F = \frac{\sum_{i=1}^{n} Q_{di}C_{di}}{\sum_{i=1}^{n} Q_{di}C_{di} + \sum_{k=1}^{p} Q_{fk}C_{fk}}$$

(Equation 3)

(vi) For each affected coating operation subject to § 60.712(a) or (b)(3), compliance is demonstrated if the product of (E)×(F) is equal to or greater than 0.93.

(vii) For each affected coating operation subject to § 60.712(b)(1)(i), compliance is demonstrated if the product of (E)×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(1) prior to modification or reconstruction or 0.93, whichever is lower.

(viii) For each affected coating operation subject to § 60.712(b)(1)(ii), compliance is demonstrated if the value of E is greater than or equal to 0.95 and if the product of (E)×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(3) or 0.93, whichever is lower.

(3) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel is used to control emissions from an affected coating operation as well as from other sources of VOC, each owner or operator of an affected coating operation shall perform a gaseous emission test using the following procedures:

(i) Construct the overall VOC emission reduction system so that each volumetric flow rate and the total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.715(b) through (g);

(ii) Assure that all VOC emissions from the coating operation are segregated from other VOC sources and that the emissions can be captured for measurement, as described in § 60.713(b)(2)(ii)(A) and (B);

(iii) Operate the emission control device with all emission sources connected and operating;

(iv) Determine the efficiency (H_v) of each individual adsorber vessel (v) using the following equation:

$$H_v = \frac{Q_{gv}C_{gv} - Q_{hv}C_{hv}}{Q_{gv}C_{gv}}$$

(Equation 4)

(v) Determine the efficiency of the carbon adsorption system (H_{sys}) by computing the average efficiency of the adsorber vessels as weighted by the volumetric flow rate (Q_{hv}) of each individual adsorber vessel (v) using the following equation:

$$H_{sys} = \frac{\sum_{v=1}^{q} H_v Q_{hv}}{\sum_{v=1}^{q} Q_{hv}}$$

(Equation 5)

(vi) Determine the efficiency (F) of the VOC capture system using Equation (3).

(vii) For the affected coating operation subject to § 60.712(a) or (b)(3), compliance is demonstrated if the product of (H_{sys})×(F) is equal to or greater than 0.93.

(viii) For the affected coating operation subject to § 60.712(b)(1)(i), compliance is demonstrated if the product of (H_{sys})×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(1) prior to modification or reconstruction or 0.93, whichever is lower.

(ix) For each affected coating operation subject to § 60.712(b)(1)(ii), compliance is demonstrated if the value of H_{sys} is greater than or equal to 0.95 and if the product of (H_{sys})×(F) is equal to or greater than the fractional reduction demonstrated pursuant to § 60.713(a)(3) or 0.93, whichever is lower.

(4) To demonstrate compliance with § 60.712(a), (b)(1), or (b)(3) (standards for coating operations) when the VOC emissions from more than one affected coating operation are collected by a common capture system and are vented through a common duct to a control

device that is also controlling emissions from nonaffected sources and the emissions from the nonaffected sources are vented separately from the affected coating operations, the owner or operator may:

(i) Consider the combined affected coating operations as a single emission source; and

(ii) Conduct a compliance test on this single source by the methods described in §60.713(b)(2) or (3), as applicable.

(5) An alternative method of demonstrating compliance with §60.712(a) or (b)(3) (standards for coating operations) and the sole method of demonstrating compliance with §60.712(b)(2) (standards for modified or reconstructed coating operations) is the installation of a total enclosure around the coating operation and the ventilation of all VOC emissions from the total enclosure to a control device with the efficiency specified in paragraph (b)(5)(iii)(A) or (B) of this section, as applicable. If this method is selected, the compliance test methods described in paragraphs (b)(1), (b)(2), (b)(3), and (b)(4) of this section are not required. Instead, each owner or operator of an affected coating operation shall:

(i) Demonstrate that a total enclosure is installed. An enclosure that meets the requirements in paragraphs (b)(5)(i)(A) through (D) of this section shall be assumed to be a total enclosure. The owner or operator of an enclosed coating operation that does not meet the requirements may apply to the Administrator for approval of the enclosure as a total enclosure on a case-by-case basis. The enclosure shall be considered a total enclosure if it is demonstrated to the satisfaction of the Administrator that all VOC emissions from the affected coating operation are contained and vented to the control device. The requirements for automatic approval are as follows:

(A) Total area of all natural draft openings shall not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(B) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening;

(C) Average inward face velocity across all natural draft openings (FV) shall be a minimum of 3,600 meters per hour as determined by the following procedures:

(*1*) Construct all forced makeup air ducts and all exhaust ducts so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in §60.715(c) and (d). Volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(*2*) Determine FV by the following equation:

$$FV = \frac{\sum_{j=1}^{n} Q_{out\ j} - \sum_{i=1}^{p} Q_{in\ i}}{\sum_{k=1}^{q} A_k}$$

(Equation 6)

(D) The air passing through all natural draft openings shall flow into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward flow of air shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the volumetric flow rate tests required to determine FV are carried out. If FV is greater than 9,000 meters per hour, the direction of airflow through the natural draft openings shall be presumed to be inward at all times without verification.

(ii) Determine the control device efficiency using Equation (2) or Equations (4) and (5), as applicable, and the test methods and procedures specified in §60.715(b) through (g).

(iii) Compliance is demonstrated if the installation of a total enclosure is demonstrated and the value of E determined from Equation (2) (or the value of H_{sys} determined from Equations (4) and (5), as applicable) is equal to or greater than the required efficiency as specified below:

(A) For coating operations subject to the standards of §60.712(a), (b)(2)(ii), and (b)(3), 0.95 (95 percent); or

(B) For coating operations subject to the standards of § 60.712(b)(2)(i), the value of E determined from Equation (2) (or the value of H_{sys} determined from Equations (4) and (5), as applicable) pursuant to § 60.713(a)(2) prior to modification or reconstruction or 0.95 (95 percent), whichever is lower.

(6) To demonstrate compliance with § 60.712(c) (standard for new mix equipment with concurrent construction of a control device), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(i) Covers satisfying the requirements of § 60.712(c)(1)–(5) have been installed and are being used properly;

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used;

(iii) The coating mix preparation equipment is vented to a control device; and

(iv) The control device efficiency (E or H_{sys}, as applicable) determined using Equation (2) or Equations (4) and (5), respectively, and the test methods and procedures specified in § 60.715(b)–(g) is equal to or greater than 0.95.

(7) To demonstrate compliance with § 60.712(d)(1) (standard for mix equipment), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(i) Covers satisfying the requirements of § 60.712(c)(1)–(5) have been installed and are being used properly;

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used; and

(iii) The coating mix preparation equipment is vented to a control device.

(8) To demonstrate compliance with § 60.712(d)(2) (standard for mix equipment), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that both:

(i) Covers satisfying the requirements of § 60.712(c)(1)–(5) have been installed and are being used properly; and

(ii) Procedures detailing the proper use of covers, as specified in § 60.712(c)(1), have been posted in all areas where affected coating mix preparation equipment is used.

(9) To determine compliance with § 60.712(e) (high-solids coatings alternative standard), each owner or operator of an affected facility shall determine the weighted average mass of VOC contained in the coating per volume of coating solids applied for each and every nominal 1-month period according to the following procedures:

(i) Determine the weight fraction of VOC in each coating applied using Method 24 as specified in § 60.715(a);

(ii) Determine the volume of coating solids in each coating applied from the facility records; and

(iii) Compute the weighted average by the following equation:

$$G = \frac{\sum_{i=1}^{n} W_{oi} M_{ci}}{\sum_{i=1}^{n} L_{si} V_{ci}}$$

(Equation 7)

(iv) For each affected facility where the value of G is less than or equal to 0.20 kilogram of VOC per liter of coating solids applied, the facility is in compliance.

(c) Startups and shutdowns are normal operation for this source category. Emissions from these operations are to be included when determining if the standards for coating operations specified in § 60.712(a) and (b) are being attained.

(d) If a control device other than a carbon adsorber, condenser, or incinerator is used to control emissions from an affected facility, the necessary operating specifications for that device must be obtained from the Administrator. An example of such a device is a flare.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988]

§ 60.714 Installation of monitoring devices and recordkeeping.

All monitoring devices required under the provisions of this section shall be installed and calibrated, according to the manufacturer's specifications, prior to the initial performance tests in locations such that representative values of the monitored parameters will be obtained. The parameters to be monitored shall be continuously measured and recorded during all performance tests.

(a) Each owner or operator of an affected coating operation that utilizes less solvent annually than the applicable cutoff provided in § 60.710(b) and that is not subject to § 60.712 (standards for coating operations) shall maintain records of actual solvent use.

(b) Each owner or operator of an affected coating operation demonstrating compliance by the test method described in § 60.713(b)(1) (liquid material balance) shall maintain records of all the following for each and every nominal 1-month period:

(1) Amount of coating applied at the applicator;

(2) Results of the reference test method specified in § 60.715(a) for determining the VOC content of all coatings applied;

(3) Amount VOC recovered; and

(4) Calculation of the percent VOC recovered.

(c) Each owner or operator of an affected coating operation or affected coating mix preparation equipment controlled by a carbon adsorption system and demonstrating compliance by the procedures described in § 60.713(b)(2), (3), (4), (5), or (6) (which include control device efficiency determinations) shall carry out the monitoring and recordkeeping provisions of paragraph (c)(1) or (2) of this section, as appropriate.

(1) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in either the control device outlet gas stream or in both the control device inlet and outlet gas streams. The outlet gas stream would be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.717(d)(3). The inlet and outlet gas streams would be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.717(d)(4).

(2) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in the outlet gas stream for a minimum of one complete adsorption cycle per day for each adsorber vessel. The owner or operator may also monitor and record the concentration level of organic compounds in the common carbon adsorption system inlet gas stream or in each individual carbon adsorber vessel inlet stream. The outlet gas streams alone would be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in § 60.717(d)(3). In this case, the owner or operator shall compute daily a 3-day rolling average concentration level of organics in the outlet gas stream from each individual adsorber vessel. The inlet and outlet gas streams would be monitored if the percent control device efficiency is used as the basis for reporting, as described in § 60.717(d)(4). In this case, the owner or operator shall compute daily a 3-day rolling average efficiency for each individual adsorber vessel.

(d) Each owner or operator of an affected coating operation controlled by a condensation system and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), or (5) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the temperature of the condenser exhaust stream.

(e) Each owner or operator of an affected coating operation or affected coating mix preparation equipment controlled by a thermal incinerator and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), (5), or (6) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the combustion temperature of the incinerator. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(f) Each owner or operator of an affected coating operation or affected coating mix preparation equipment controlled by a catalytic incinerator and demonstrating compliance by the procedures described in § 60.713(b)(2), (4), (5), or (6) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(g) Each owner or operator of an affected coating operation demonstrating compliance pursuant to § 60.713(b)(2), (3), or (4) (which include VOC capture system efficiency determinations) shall submit a monitoring plan for the VOC capture system to the Administrator for approval along with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions. This plan shall identify the parameter to be monitored as an indicator of VOC capture system performance (e.g., the amperage to the exhaust fans or duct flow rates) and the method for monitoring the chosen parameter. The owner or operator shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the value of the chosen parameter.

(h) Each owner or operator of an affected coating operation who uses the equipment alternative described in § 60.713(b)(5) to demonstrate compliance shall follow the procedures described in paragraph (g) of this section to establish a monitoring plan for the total enclosure.

(i) Each owner or operator of an affected coating operation shall record time periods of coating operations when an emission control device is not in use.

(j) Each owner or operator of an affected coating operation or affected coating mix preparation equipment complying with § 60.712(e) shall maintain records of the monthly weighted average mass of VOC contained in the coating per volume of coating solids applied for each coating, as described in § 60.713(b)(9)(i) through (iv).

(k) Records of the measurements and calculations required in §§ 60.713 and 60.714 must be retained for at least 2 years following the date of the measurements and calculations.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

[53 FR 38914, Oct. 3, 1988, as amended at 64 FR 7467, Feb. 12, 1999]

§ 60.715 Test methods and procedures.

Methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance as follows:

(a) Method 24 is used to determine the VOC content in coatings. If it is demonstrated to the satisfaction of the Administrator that plant coating formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern. For Method 24, the coating sample must be a 1-liter sample taken into a 1-liter container at a location and time such that the sample will be representative of the coating applied to the base film (i.e., the sample shall include any dilution solvent or other VOC added during the manufacturing process). The container must be tightly sealed immediately after the sample is taken. Any solvent or other VOC added after the sample is taken must be measured and accounted for in the calculations that use Method 24 results.

(b) Method 18, 25, or 25A, as appropriate to the conditions at the site, is used to determine VOC concentration. The owner or operator shall submit notice of the intended test method to the Administrator for approval along with the notification of the performance test required under § 60.8(d) of the General Provisions. Method selection shall be based on consideration of the diversity of organic species present and their total concentration and on consideration of the potential presence of interfering gases. Except as indicated in paragraphs (b)(1) and (2) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(1) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual adsorber vessels pursuant to § 60.713(b)(2), (4), (5), or (6), the test shall consist of three separate runs, each coinciding with one or more complete sequences through the adsorption cycles of all the individual adsorber vessels.

(2) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel pursuant to § 60.713(b)(3), (4), (5), or (6), each adsorber vessel shall be tested individually. The test for each adsorber vessel shall consist of three separate runs. Each run shall coincide with one or more complete adsorption cycles.

(c) Method 1 or 1A is used for sample and velocity traverses.

(d) Method 2, 2A, 2C, or 2D is used for velocity and volumetric flow rates.

(e) Method 3 is used for gas analysis.

(f) Method 4 is used for stack gas moisture.

(g) Methods 2, 2A, 2C, 2D, 3, and 4 shall be performed, as applicable, at least twice during each test period.

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988]

§ 60.716 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of VOC from any emission point subject to § 60.712(c) or (d) (standards for mix equipment) at least equivalent to that required by § 60.712 (c) or (d), respectively, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means. The notice may condition permission on requirements related to the operation and maintenance of the alternative means.

(b) Any notice under paragraph (a) of this section shall be published only after public notice and an opportunity for a public hearing.

(c) Any person seeking permission under this section shall submit either results from an emission test that documents the collection and measurement of all VOC emissions from a given control device or an engineering evaluation that documents the determination of such emissions.

§ 60.717 Reporting and monitoring requirements.

(a) For all affected coating operations subject to § 60.712(a), (b)(1), (b)(2), or (b)(3) and all affected coating mix preparation equipment subject to § 60.712(c), the performance test data and results shall be submitted to the Administrator as specified in § 60.8(a) of the General Provisions (40 CFR part 60, subpart A). In addition, the average values of the monitored parameters measured at least every 15 minutes and averaged over the period of the performance test shall be submitted with the results of all performance tests.

(b) Each owner or operator of an affected coating operation claiming to utilize less than the applicable volume of solvent specified in § 60.710(b) in the first calendar year of operation shall submit to the Administrator, with the notification of projected startup, a material flow chart indicating projected solvent use. The owner or operator shall also submit actual solvent use records at the end of the initial calendar year.

(c) Each owner or operator of an affected coating operation initially utilizing less than the applicable volume of solvent specified in § 60.710(b) per calendar year shall report the first calendar year in which actual annual solvent use exceeds the applicable volume.

(d) Each owner or operator of an affected coating operation, or affected coating mix preparation equipment subject to § 60.712(c), shall submit semiannual reports to the Administrator documenting the following:

(1) The 1-month amount of VOC contained in the coating, the VOC recovered, and the percent emission reduction for months of noncompliance for any affected coating operation demonstrating compliance by the performance test method described in § 60.713(b)(1) (liquid material balance);

(2) The VOC contained in the coatings for the manufacture of magnetic tape for any 1-month period during which the weighted average solvent content (G) of the coatings exceeded 0.20 kilogram per liter of coating solids for those affected facilities complying with § 60.712(e) (high-solids coatings alternative standard);

(3) For those affected facilities monitoring only the carbon adsorption system outlet concentration levels of organic compounds, the periods (during actual coating operations) specified in paragraph (d)(3)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average value of the concentration level of organic compounds in the common outlet gas stream is more than 20 percent greater than the average value measured during the most recent performance test that demonstrated compliance.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the concentration level of organic compounds in the individual outlet gas stream is more than 20 percent greater than the average value for that adsorber vessel measured during the most recent performance test that demonstrated compliance.

(4) For those affected facilities monitoring both the carbon adsorption system inlet and outlet concentration levels of organic compounds, the periods (during actual coating operations), specified in (d)(4)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average carbon adsorption system efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.713(b)(2) or (4), the value of E determined using Equation (2) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(A) or § 60.713(b)(6), 0.95 (95 percent).

(C) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(B), the required value of E determined using Equation (2) pursuant to § 60.713(a)(2) prior to modification or reconstruction or 0.95 (95 percent), whichever is lower.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.713(b)(3) or (4), the value of H_v determined using Equation (4) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(A) or § 60.713(b)(6), 0.95 (95 percent).

(C) For those affected facilities demonstrating compliance pursuant to § 60.713(b)(5)(iii)(B), the value of H_v determined using Equation 4 pursuant to § 60.713(a)(2) prior to modification or reconstruction.

(5) All 3-hour periods (during actual coating operations) during which the average exhaust temperature is 5 or more Celsius degrees above the average temperature measured during the most recent performance test that demonstrated compliance for those affected facilities monitoring condenser exhaust gas temperature;

(6) All 3-hour periods (during actual coating operations) during which the average combustion temperature is more than 28 Celsius degrees below the average combustion temperature during the most recent performance test that demonstrated compliance for those affected facilities monitoring thermal incinerator combustion gas temperature;

(7) All 3-hour periods (during actual coating operations) during which the average gas temperature immediately before the catalyst bed is more than 28 Celsius degrees below the average gas temperature during the most recent performance test that demonstrated compliance and all 3-hour periods (during actual coating operations) during which the average gas temperature difference across the catalyst bed is less than 80 percent of the average gas temperature difference during the most recent performance test that demonstrated compliance for those affected facilities monitoring catalytic incinerator catalyst bed temperature; and

(8) All 3-hour periods (during actual coating operations) during which the average total enclosure or VOC capture system monitoring device readings vary by 5 percent or more from the average value measured during the most recent performance test that demonstrated compliance for those affected facilities monitoring a total enclosure pursuant to §60.714(h) or VOC capture system pursuant to §60.714(g).

(e) Each owner or operator of an affected coating operation, or affected coating mix preparation equipment subject to §60.712(c), not required to submit reports under §60.717(d) because no reportable periods have occurred shall submit semiannual reports so affirming.

(f) Each owner or operator of affected coating mix preparation equipment that is constructed at a time when no affected coating operation is being constructed shall:

(1) Be exempt from the reporting requirements specified in §60.7(a)(1), (2), and (4); and

(2) Submit the notification of actual startup specified in §60.7(a)(3).

(g) The owner or operator of affected coating mix preparation equipment that is constructed at the same time as an affected coating operation shall include the affected coating mix preparation equipment in all the reporting requirements for the affected coating operation specified in §60.7(a)(1) through (4).

(h) The reports required under paragraphs (b) through (e) of this section shall be postmarked within 30 days of the end of the reporting period.

(i) The requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In this event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

[53 FR 38914, Oct. 3, 1988; 53 FR 43799, Oct. 28, 1988, as amended at 53 FR 47955, Nov. 29, 1988; 64 FR 7467, Feb. 12, 1999]

§ 60.718 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States:

§60.711(a)(16)
§60.713(b)(1)(i)
§60.713(b)(1)(ii)
§60.713(b)(5)(i)
§60.713(d)
§60.715(a)
§60.716

[53 FR 38914, Oct. 3, 1988; 53 FR 47955, Nov. 29, 1988]

Subpart TTT—Standards of Performance for Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines

SOURCE: 53 FR 2676, Jan. 29, 1988, unless otherwise noted.

§ 60.720 Applicability and designation of affected facility.

(a) The provisions of this subpart apply to each spray booth in which plastic parts for use in the manufacture of business machines receive prime coats, color coats, texture coats, or touch-up coats.

(b) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after January 8, 1986.

§ 60.721 Definitions.

(a) As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

Business machine means a device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission, such as:

(1) Products classified as typewriters under SIC Code 3572;

(2) Products classified as electronic computing devices under SIC Code 3573;

(3) Products classified as calculating and accounting machines under SIC Code 3574;

(4) Products classified as telephone and telegraph equipment under SIC Code 3661;

(5) Products classified as office machines, not elsewhere classified, under SIC Code 3579; and

(6) Photocopy machines, a subcategory of products classified as photographic equipment under SIC code 3861.

Coating operation means the use of a spray booth for the application of a single type of coating (e.g., prime coat); the use of the same spray booth for the application of another type of coating (e.g., texture coat) constitutes a separate coating operation for which compliance determinations are performed separately.

Coating solids applied means the coating solids that adhere to the surface of the plastic business machine part being coated.

Color coat means the coat applied to a part that affects the color and gloss of the part, not including the prime coat or texture coat. This definition includes fog coating, but does not include conductive sensitizers or electromagnetic interference/radio frequency interference shielding coatings.

Conductive sensitizer means a coating applied to a plastic substrate to render it conductive for purposes of electrostatic application of subsequent prime, color, texture, or touch-up coats.

Electromagnetic interference/radio frequency interference (EMI/RFI) shielding coating means a conductive coating that is applied to a plastic substrate to attenuate EMI/RFI signals.

Fog coating (also known as mist coating and uniforming) means a thin coating applied to plastic parts that have molded-in color or texture or both to improve color uniformity.

Nominal 1-month period means either a calendar month, 30-day month, accounting month, or similar monthly time period that is established prior to the performance test (i.e., in a statement submitted with notification of anticipated actual startup pursuant to 40 CFR 60.7(2)).

Plastic parts means panels, housings, bases, covers, and other business machine components formed of synthetic polymers.

Prime coat means the initial coat applied to a part when more than one coating is applied, not including conductive sensitizers or electromagnetic interference/radio frequency interference shielding coatings.

Spray booth means the structure housing automatic or manual spray application equipment where a coating is applied to plastic parts for business machines.

Texture coat means the rough coat that is characterized by discrete, raised spots on the exterior surface of the part. This definition does not include conductive sensitizers or EMI/RFI shielding coatings.

Touch-up coat means the coat applied to correct any imperfections in the finish after color or texture coats have been applied. This definition does not include conductive sensitizers or EMI/RFI shielding coatings.

Transfer efficiency means the ratio of the amount of coating solids deposited onto the surface of a plastic business machine part to the total amount of coating solids used.

VOC emissions means the mass of VOC's emitted from the surface coating of plastic parts for business machines expressed as kilograms of VOC's per liter of coating solids applied (i.e., deposited on the surface).

(b) All symbols used in this subpart not defined below are given meaning in the Act or subpart A of this part.

D_c=density of each coating as received (kilograms per liter)
D_d=density of each diluent VOC (kilograms per liter)
L_c=the volume of each coating consumed, as received (liters)
L_d=the volume of each diluent VOC added to coatings (liters)
L_s=the volume of coating solids consumed (liters)
M_d=the mass of diluent VOC's consumed (kilograms)
M_o=the mass of VOC's in coatings consumed, as received (kilograms)
N=the volume-weighted average mass of VOC emissions to the atmosphere per unit volume of coating solids applied (kilograms per liter)
T=the transfer efficiency for each type of application equipment used at a coating operation (fraction)
T_{avg}=the volume-weighted average transfer efficiency for a coating operation (fraction)
V_s=the proportion of solids in each coating, as received (fraction by volume)
W_o=the proportion of VOC's in each coating, as received (fraction by weight)

[53 FR 2676, Jan. 29, 1988, as amended at 54 FR 25459, June 15, 1989]

§ 60.722 Standards for volatile organic compounds.

(a) Each owner or operator of any affected facility which is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test, required by §§ 60.8 and 60.723 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated, or 180 days after the initial startup, whichever date comes first. No affected facility shall cause the discharge into the atmosphere in excess of:

(1) 1.5 kilograms of VOC's per liter of coating solids applied from prime coating of plastic parts for business machines.

(2) 1.5 kilograms of VOC's per liter of coating solids applied from color coating of plastic parts for business machines.

(3) 2.3 kilograms of VOC's per liter of coating solids applied from texture coating of plastic parts for business machines.

(4) 2.3 kilograms of VOC's per liter of coatings solids applied from touch-up coating of plastic parts for business machines.

(b) All VOC emissions that are caused by coatings applied in each affected facility, regardless of the actual point of discharge of emissions into the atmosphere, shall be included in determining compliance with the emission limits in paragraph (a) of this section.

§ 60.723 Performance tests and compliance provisions.

(a) Section 60.8 (d) and (f) do not apply to the performance test procedures required by this section.

(b) The owner or operator of an affected facility shall conduct an initial performance test as required under § 60.8(a) and thereafter a performance test each nominal 1-month period for each affected facility according to the procedures in this section.

(1) The owner or operator shall determine the composition of coatings by analysis of each coating, as received, using Method 24, from data that have been determined by the coating manufacturer using Method 24, or by other methods approved by the Administrator.

(2) The owner or operator shall determine the volume of coating and the mass of VOC used for dilution of coatings from company records during each nominal 1-month period. If a common coating distribution system serves more than one affected facility or serves both affected and nonaffected spray booths, the owner or operator shall estimate the volume of coatings used at each facility by using procedures approved by the Administrator.

(i) The owner or operator shall calculate the volume-weighted average mass of VOC's in coatings emitted per unit volume of coating solids applied (N) at each coating operation [i.e., for each type of coating (prime, color, texture, and touch-up) used] during each nominal 1-month period for each affected facility. Each 1-month calculation is considered a performance test. Except as provided in paragraph (b)(2)(iii) of this section, N will be determined by the following procedures:

(A) Calculate the mass of VOC's used (M_o+M_d) for each coating operation during each nominal 1-month period for each affected facility by the following equation:

$$M_o + M_d = \sum_{i=1}^{n} L_{ci} D_{ci} W_{oi} + \sum_{j=1}^{m} L_{dj} D_{dj}$$

where n is the number of coatings of each type used during each nominal 1-month period and m is the number of different diluent VOC's used during each nominal 1-month period. (Σ L_{dj} D_{dj} will be 0 if no VOC's are added to the coatings, as received.)

(B) Calculate the total volume of coating solids consumed (L_s) in each nominal 1-month period for each coating operation for each affected facility by the following equation:

$$L_s = \sum_{i=1}^{n} L_{ci} V_{si}$$

where n is the number of coatings of each type used during each nominal 1-month period.

(C) Select the appropriate transfer efficiency (T) from Table 1 for each type of coating applications equipment used at each coating operation. If the owner or operator can demonstrate to the satisfaction of the Administrator that transfer efficiencies other than those shown are appropriate, the Administrator will approve their use on a case-by-case basis. Transfer efficiency values for application methods not listed below shall be approved by the Administrator on a case-by-case basis. An owner or operator must submit sufficient data for the Administrator to judge the validity of the transfer efficiency claims.

(D) Where more than one application method is used within a single coating operation, the owner or operator shall determine the volume of each coating applied by each method through a means acceptable to the Administrator and compute the volume-weighted average transfer efficiency by the following equation:

$$T_{avg} = \frac{\sum_{i=1}^{n} \sum_{k=1}^{p} L_{cik} V_{sik} T_k}{L_s}$$

TABLE 1—TRANSFER EFFICIENCIES

Application methods	Transfer efficiency	Type of coating
Air atomized spray	0.25	Prime, color, texture, touch-up, and fog coats.
Air-assistd airless spray.	.40	Prime and color coats.
Electrostatic air spray	.40	Do.

where n is the number of coatings of each type used and p is the number of application methods used.

(E) Calculate the volume-weighted average mass of VOC's emitted per unit volume of coating solids applied (N) during each nominal 1-month period for each coating operation for each affected facility by the folowing equation:

$$N = \frac{M_o + M_d}{L_s T_{avg}}$$

(T_{avg}=T when only one type of coating operation occurs).

(ii) Where the volume-weighted average mass of VOC's emitted to the atmosphere per unit volume of coating solids applied (N) is less than or equal to 1.5 kilograms per liter for prime coats, is less than or equal to 1.5 kilograms per liter for color coats, is less than or equal to 2.3 kilograms per liter for texture coats, and is less than or equal to 2.3 kilograms per liter for touch-up coats, the affected facility is in compliance.

(iii) If each individual coating used by an affected facility has a VOC content (kg VOC/l of solids), as received, which when divided by the lowest transfer efficiency at which the coating is applied for each coating operation results in a value equal to or less than 1.5 kilograms per liter for prime and color coats and equal to or less than 2.3 kilograms per liter for texture and touch-up coats, the affected facility is in compliance provided that no VOC's are added to the coatings during distribution or application.

(iv) If an affected facility uses add-on controls to control VOC emissions and if the owner or operator can demonstrate to the Administrator that the volume-weighted average mass of VOC's emitted to the atmosphere during each nominal 1-month period per unit volume of coating solids applied (N) is within each of the applicable limits expressed in paragraph (b)(2)(ii) of this section because of this equipment, the affected facility is in compliance. In such cases, compliance will be determined by the Administrator or a case-by-case basis.

[53 FR 2676, Jan. 29, 1988, as amended at 65 FR 61778, Oct. 17, 2000]

§ 60.724 Reporting and recordkeeping requirements.

(a) The reporting requirements of § 60.8(a) apply only to the initial performance test. Each owner or operator subject to the provisions of this subpart shall include the following data in the report of the initial performance test required under § 60.8(a):

(1) Except as provided for in paragraph (a)(2) of this section, the volume-weighted average mass of VOC's emitted to the atmosphere per volume of applied coating solids (N) for the initial nominal 1-month period for each coating operation from each affected facility.

(2) For each affected facility where compliance is determined under the provisions of § 60.723(b)(2)(iii), a list of the coatings used during the initial nominal 1-month period, the VOC content of each coating calculated from data determined using Method 24, and the lowest transfer efficiency at which each coating is applied during the initial nominal 1-month period.

(b) Following the initial report, each owner or operator shall:

(1) Report the volume-weighted average mass of VOC's per unit volume of coating solids applied for each coating operation for each affected facility during each nominal 1-month period in which the facility is not in compliance with the applicable emission limits specified in § 60.722. Reports of noncompliance shall be submitted on a quarterly basis, occurring every 3 months following the initial report; and

(2) Submit statements that each affected facility has been in compliance with the applicable emission limits specified in § 60.722 during each nominal

1-month period. Statements of compliance shall be submitted on a semiannual basis.

(c) These reports shall be postmarked not later than 10 days after the end of the periods specified in § 60.724(b)(1) and § 60.724(b)(2).

(d) Each owner or operator subject to the provisions of this subpart shall maintain at the source, for a period of at least 2 years, records of all data and calculations used to determine monthly VOC emissions from each coating operation for each affected facility as specified in 40 CFR 60.7(d).

(e) Reporting and recordkeeping requirements for facilities using add-on controls will be determined by the Administrator on a case-by-case basis.

[53 FR 2676, Jan. 29, 1988, as amended at 65 FR 61778, Oct. 17, 2000]

§ 60.725 Test methods and procedures.

(a) The reference methods in appendix A to this part except as provided under § 60.8(b) shall be used to determine compliance with § 60.722 as follows:

(1) Method 24 for determination of VOC content of each coating as received.

(2) For Method 24, the sample must be at least a 1-liter sample in a 1-liter container.

(b) Other methods may be used to determine the VOC content of each coating if approved by the Administrator before testing.

§ 60.726 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to the States:

Section 60.723(b)(1)
Section 60.723(b)(2)(i)(C)
Section 60.723(b)(2)(iv)
Section 60.724(e)
Section 60.725(b)

[53 FR 2676, Jan. 29, 1988, as amended at 53 FR 19300, May 27, 1988]

Subpart UUU—Standards of Performance for Calciners and Dryers in Mineral Industries

SOURCE: 57 FR 44503, Sept. 28, 1992, unless otherwise noted.

§ 60.730 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each calciner and dryer at a mineral processing plant. Feed and product conveyors are not considered part of the affected facility. For the brick and related clay products industry, only the calcining and drying of raw materials prior to firing of the brick are covered.

(b) An affected facility that is subject to the provisions of subpart LL, Metallic Mineral Processing Plants, is not subject to the provisions of this subpart. Also, the following processes and process units used at mineral processing plants are not subject to the provisions of this subpart: vertical shaft kilns in the magnesium compounds industry; the chlorination-oxidation process in the titanium dioxide industry; coating kilns, mixers, and aerators in the roofing granules industry; and tunnel kilns, tunnel dryers, apron dryers, and grinding equipment that also dries the process material used in any of the 17 mineral industries (as defined in § 60.731, ''Mineral processing plant'').

(c) The owner or operator of any facility under paragraph (a) of this section that commences construction, modification, or reconstruction after April 23, 1986, is subject to the requirements of this subpart.

§ 60.731 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Calciner means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces and multiple hearth furnaces.

Control device means the air pollution control equipment used to reduce particulate matter emissions released to the atmosphere from one or more affected facilities.

Dryer means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.

Installed in series means a calciner and dryer installed such that the exhaust gases from one flow through the other and then the combined exhaust gases are discharged to the atmosphere.

Mineral processing plant means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

§60.732 Standards for particulate matter.

Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by §60.8 is completed, but not later than 180 days after the initial startup, whichever date comes first. No emissions shall be discharged into the atmosphere from any affected facility that:

(a) Contains particulate matter in excess of 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series and in excess of 0.057 g/dscm (0.025 gr/dscf) for dryers; and

(b) Exhibits greater than 10 percent opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device.

[57 FR 44503, Sept. 28, 1992, as amended at 65 FR 61778, Oct. 17, 2000]

§60.733 Reconstruction.

The cost of replacement of equipment subject to high temperatures and abrasion on processing equipment shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital cost that would be required to construct a comparable new facility" under §60.15. Calciner and dryer equipment subject to high temperatures and abrasion are: end seals, flights, and refractory lining.

§60.734 Monitoring of emissions and operations.

(a) With the exception of the process units described in paragraphs (b), (c), and (d) of this section, the owner or operator of an affected facility subject to the provisions of this subpart who uses a dry control device to comply with the mass emission standard shall install, calibrate, maintain, and operate a continuous monitoring system to measure and record the opacity of emissions discharged into the atmosphere from the control device.

(b) In lieu of a continuous opacity monitoring system, the owner or operator of a ball clay vibrating grate dryer, a bentonite rotary dryer, a diatomite flash dryer, a diatomite rotary calciner, a feldspar rotary dryer, a fire clay rotary dryer, an industrial sand fluid bed dryer, a kaolin rotary calciner, a perlite rotary dryer, a roofing granules fluid bed dryer, a roofing granules rotary dryer, a talc rotary calciner, a titanium dioxide spray dryer, a titanium dioxide fluid bed dryer, a vermiculite fluid bed dryer, or a vermiculite rotary dryer who uses a dry control device may have a certified visible emissions observer measure and record three 6-minute averages of the opacity of visible emissions to the atmosphere each day of operation in accordance with Method 9 of appendix A of part 60.

(c) The owner or operator of a ball clay rotary dryer, a diatomite rotary dryer, a feldspar fluid bed dryer, a fuller's earth rotary dryer, a gypsum rotary dryer, a gypsum flash calciner, gypsum kettle calciner, an industrial sand rotary dryer, a kaolin rotary dryer, a kaolin multiple hearth furnace, a perlite expansion furnace, a talc flash dryer, a talc rotary dryer, a titanium dioxide direct or indirect rotary dryer or a vermiculite expansion furnace who uses a dry control device is exempt from the monitoring requirements of this section.

(d) The owner or operator of an affected facility subject to the provisions of this subpart who uses a wet scrubber to comply with the mass emission standard for any affected facility shall install, calibrate, maintain, and operate monitoring devices that continuously measure and record the pressure loss of the gas stream through the scrubber and the scrubbing liquid flow rate to the scrubber. The pressure loss monitoring device must be certified by the manufacturer to be accurate within 5 percent of water column gauge pressure at the level of operation. The liquid flow rate monitoring device must be certified by the manufacturer to be accurate within 5 percent of design scrubbing liquid flow rate.

§ 60.735 Recordkeeping and reporting requirements.

(a) Records of the measurements required in § 60.734 of this subpart shall be retained for at least 2 years.

(b) Each owner or operator who uses a wet scrubber to comply with § 60.732 shall determine and record once each day, from the recordings of the monitoring devices in § 60.734(d), an arithmetic average over a 2-hour period of both the change in pressure of the gas stream across the scrubber and the flowrate of the scrubbing liquid.

(c) Each owner or operator shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by § 60.734 of this subpart. For the purpose of these reports, exceedances are defined as follows:

(1) All 6-minute periods during which the average opacity from dry control devices is greater than 10 percent; or

(2) Any daily 2-hour average of the wet scrubber pressure drop determined as described in § 60.735(b) that is less than 90 percent of the average value recorded according to § 60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard; or

(3) Each daily wet scrubber liquid flow rate recorded as described in § 60.735(b) that is less than 80 percent or greater than 120 percent of the average value recorded according to § 60.736(c) during the most recent performance test that demonstrated compliance with the particulate matter standard.

(d) The requirements of this section remain in force until and unless the Agency, in delegating enforcement authority to a State under section 111(c) of the Clean Air Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected facilities within the State will be relieved of the obligation to comply with this section provided that they comply with the requirements established by the State.

[57 FR 44503, Sept. 28, 1992, as amended at 58 FR 40591, July 29, 1993]

§ 60.736 Test methods and procedures.

(a) In conducting the performance tests required in § 60.8, the owner or operator shall use the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in § 60.8(b).

(b) The owner or operator shall determine compliance with the particulate matter standards in § 60.732 as follows:

(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.

(2) Method 9 and the procedures in § 60.11 shall be used to determine opacity from stack emissions.

(c) During the initial performance test of a wet scrubber, the owner or operator shall use the monitoring devices of § 60.734(d) to determine the average change in pressure of the gas stream across the scrubber and the average flowrate of the scrubber liquid during each of the particulate matter runs. The arithmetic averages of the three runs shall be used as the baseline average values for the purposes of § 60.735(c).

§ 60.737 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: No restrictions.

Subpart VVV—Standards of Performance for Polymeric Coating of Supporting Substrates Facilities

SOURCE: 54 FR 37551, Sept. 11, 1989, unless otherwise noted.

§60.740 Applicability and designation of affected facility.

(a) The affected facility to which the provisions of this subpart apply is each coating operation and any onsite coating mix preparation equipment used to prepare coatings for the polymeric coating of supporting substrates.

(b) Any affected facility for which the amount of VOC used is less than 95 Mg per 12-month period is subject only to the requirements of §§60.744(b), 60.747(b), and 60.747(c). If the amount of VOC used is 95 Mg or greater per 12-month period, the facility is subject to all the requirements of this subpart. Once a facility has become subject to the requirements of this subpart, it will remain subject to those requirements regardless of changes in annual VOC use.

(c) This subpart applies to any affected facility for which construction, modification, or reconstruction begins after April 30, 1987, except for the facilities specified in paragraph (d) of this section.

(d) This subpart does not apply to the following:

(1) Coating mix preparation equipment used to manufacture coatings at one plant for shipment to another plant for use in an affected facility (coating operation) or for sale to another company for use in an affected facility (coating operation);

(2) Coating mix preparation equipment or coating operations during those times they are used to prepare or apply waterborne coatings so long as the VOC content of the coating does not exceed 9 percent by weight of the volatile fraction;

(3) Web coating operations that print an image on the surface of the substrate or any coating applied on the same printing line that applies the image.

§60.741 Definitions, symbols, and cross-reference tables.

(a) All terms used in this subpart not defined below have the meaning given to them in the Act and in subpart A of this part.

Coating applicator means any apparatus used to apply a coating to a continuous substrate.

Coating mix preparation equipment means all mixing vessels in which solvent and other materials are blended to prepare polymeric coatings.

Coating operation means any coating applicator(s), flashoff area(s), and drying oven(s) located between a substrate unwind station and a rewind station that coats a continuous web to produce a substrate with a polymeric coating. Should the coating process not employ a rewind station, the end of the coating operation is after the last drying oven in the process.

Common emission control device means a device controlling emissions from an affected coating operation as well as from any other emission source.

Concurrent means the period of time in which construction of an emission control device serving an affected facility is commenced or completed, beginning 6 months prior to the date that construction of the affected facility commences and ending 2 years after the date that construction of the affected facility is completed.

Control device means any apparatus that reduces the quantity of a pollutant emitted to the air.

Cover means, with respect to coating mix preparation equipment, a device that fits over the equipment opening to prevent emissions of volatile organic compounds (VOC) from escaping.

Drying oven means a chamber within which heat is used to dry a surface coating; drying may be the only process or one of multiple processes performed in the chamber.

Equivalent diameter means four times the area of an opening divided by its perimeter.

Flashoff area means the portion of a coating operation between the coating applicator and the drying oven where VOC begins to evaporate from the coated substrate.

Natural draft opening means any opening in a room, building, or total enclosure that remains open during operation of the facility and that is not connected to a duct in which a fan is installed. The rate and direction of the natural draft across such an opening is a consequence of the difference in pressures on either side of the wall or barrier containing the opening.

Nominal 1-month period means a calendar month or, if established prior to the performance test in a statement submitted with notification of anticipated startup pursuant to 40 CFR 60.7(a)(2), a similar monthly time period (e.g., 30-day month or accounting month).

Onsite coating mix preparation equipment means those pieces of coating mix preparation equipment located at the same plant as the coating operation they serve.

Polymeric coating of supporting substrates means a web coating process that applies elastomers, polymers, or prepolymers to a supporting web other than paper, plastic film, metallic foil, or metal coil.

Substrate means the surface to which a coating is applied.

Temporary enclosure means a total enclosure that is constructed for the sole purpose of measuring the fugitive VOC emissions from an affected facility.

Total enclosure means a structure that is constructed around a source of emissions and operated so that all VOC emissions are collected and exhausted through a stack or duct. With a total enclosure, there will be no fugitive emissions, only stack emissions. The drying oven itself may be part of the total enclosure.

Vapor capture system means any device or combination of devices designed to contain, collect, and route solvent vapors released from the coating mix preparation equipment or coating operation.

VOC in the applied coating means the product of Method 24 VOC analyses or formulation data (if those data are demonstrated to be equivalent to Method 24 results) and the total volume of coating fed to the coating applicator.

VOC used means the amount of VOC delivered to the coating mix preparation equipment of the affected facility (including any contained in premixed coatings or other coating ingredients prepared off the plant site) for the formulation of polymeric coatings to be applied to supporting substrates at the coating operation, plus any solvent added after initial formulation is complete (e.g., dilution solvent added at the coating operation). If premixed coatings that require no mixing at the plant site are used, ''VOC used'' means the amount of VOC delivered to the coating applicator(s) of the affected facility.

Volatile organic compounds or *VOC* means any organic compounds that participate in atmospheric photochemical reactions; or that are measured by a reference method, an equivalent method, an alternative method, or that are determined by procedures specified under any subpart.

Waterborne coating means a coating which contains more than 5 weight percent water in its volatile fraction.

Web coating means the coating of products, such as fabric, paper, plastic film, metallic foil, metal coil, cord, and yarn, that are flexible enough to be unrolled from a large roll; and coated as a continuous substrate by methods including, but not limited to, knife coating, roll coating, dip coating, impregnation, rotogravure, and extrusion.

(b) The nomenclature used in this subpart has the following meaning:

A_k=the area of each natural draft opening (k) in a total enclosure, in square meters.

C_{aj}=the concentration of VOC in each gas stream (j) exiting the emission control device, in parts per million by volume.

C_{bi}=the concentration of VOC in each gas stream (i) entering the emission control device, in parts per million by volume.

C_{di}=the concentration of VOC in each gas stream (i) entering the emission control device from the affected coating operation, in parts per million by volume.

C_{fk}=the concentration of VOC in each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in parts per million by volume.

C_{gv}=the concentration of VOC in the gas stream entering each individual carbon adsorber vessel (v), in parts per million by volume. For purposes of calculating the efficiency of the individual adsorber vessel, C_{gv} may be measured in the carbon adsorption system's common inlet duct prior to the branching of individual inlet ducts.

C_{hv}=the concentration of VOC in the gas stream exiting each individual carbon adsorber vessel (v), in parts per million by volume.

E=the control device efficiency achieved for the duration of the emission test (expressed as a fraction).

F=the VOC emission capture efficiency of the vapor capture system achieved for the duration of the emission test (expressed as a fraction).

FV=the average inward face velocity across all natural draft openings in a total enclosure, in meters per hour.

H_v=the individual carbon adsorber vessel (v) efficiency achieved for the duration of the emission test (expressed as a fraction).

H_{sys}=the carbon adsorption system efficiency calculated when each adsorber vessel has an individual exhaust stack.

M_{ci}=the total mass (kg) of each coating (i) applied to the substrate at an affected coating operation during a nominal 1-month period as determined from facility records.

M_r=the total mass (kg) of VOC recovered for a nominal 1-month period.

Q_{aj}=the volumetric flow rate of each gas stream (j) exiting the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

Q_{bi}=the volumetric flow rate of each gas stream (i) entering the emission control device, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

Q_{di}=the volumetric flow rate of each gas stream (i) entering the emission control device from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

Q_{fk}=the volumetric flow rate of each uncontrolled gas stream (k) emitted directly to the atmosphere from the affected coating operation, in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

Q_{gv}=the volumetric flow rate of the gas stream entering each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration. For purposes of calculating the efficiency of the individual adsorber vessel, the value of Q_{gv} can be assumed to equal the value of Q_{hv} measured for that adsorber vessel.

Q_{hv}=the volumetric flow rate of the gas stream exiting each individual carbon adsorber vessel (v), in dry standard cubic meters per hour when Method 18 or 25 is used to measure VOC concentration or in standard cubic meters per hour (wet basis) when Method 25A is used to measure VOC concentration.

$Q_{in\,i}$=the volumetric flow rate of each gas stream (i) entering the total enclosure through a forced makeup air duct, in standard cubic meters per hour (wet basis).

$Q_{out\,j}$=the volumetric flow rate of each gas stream (j) exiting the total enclosure through an exhaust duct or hood, in standard cubic meters per hour (wet basis).

R=the overall VOC emission reduction achieved for the duration of the emission test (expressed as a fraction).

RS_i=the total mass (kg) of VOC retained on the coated substrate after oven drying or contained in waste coating for a given combination of coating and substrate.

W_{oi}=the weight fraction of VOC in each coating (i) applied at an affected coating operation during a nominal 1-month period as determined by Method 24.

(c) Tables 1a and 1b present a cross reference of the affected facility status and the relevant section(s) of the regulation.

TABLE 1A—CROSS REFERENCE[a] [b]

Status	Standard	Compliance provisions §60.743
A. Coating operation:		
1. If projected VOC use is <95 Mg/yr.	§60.740(b): Monitor VOC use	Not applicable.
2. If projected VOC use is ≥95 Mg/yr.	§60.742(b)(1): Reduce VOC emissions to the atmosphere from the coating operation by at least 90 percent; or.	(a)(1), (a)(2), (a)(3), or (a)(4);
	§60.742(b)(2): Install, operate, and maintain a total enclosure around the coating operation and vent the captured VOC emissions from the total enclosure to a control device that is at least 95 percent efficient.	(b), (e).

Table 1a—Cross Reference[a] [b]—Continued

Status	Standard	Compliance provisions § 60.743
B. Coating mix preparation equipment:		
1. If projected VOC use is ≥95 Mg/yr but <130 Mg/yr.	§ 60.742(c)(3): (i) Install, operate, and maintain a cover on each piece of affected equipment; or (ii) install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions to a VOC control device.	(d), (e).
2. If projected VOC use is ≥130 Mg/yr but there is no concurrent construction of a control device.	§ 60.742(c)(2): (i) Install, operate, and maintain a cover on each piece of affected equipment; or (ii) install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions to a VOC control device.	(d).
3. If projected VOC use is ≥130 Mg/yr and there is concurrent construction of a control device.	§ 60.742(c)(1): Install, operate, and maintain a cover on each piece of affected equipment and vent VOC emissions from the covered equipment to a 95 percent efficient control device while preparation of the coating is taking place within the vessel.	(c), (e).

[a] This table is presented for the convenience of the user and is not intended to supersede the language of the regulation. For the details of the requirements, refer to the text of the regulation.

[b] Refer to Table 1b to determine which subsections of §§ 60.744, 60.745, and 60.747 correspond to each compliance provision (§ 60.743).

Table 1b—Cross Reference

Compliance provisions—§ 60.743	Test methods—§ 60.745	Category/equipment[a]	Monitoring requirements—§ 60.744	Reporting and recordkeeping requirements—§ 60.747
A. Coating operation:				
(a)(1)—Gaseous emission test for coating operations not using carbon adsorption beds with individual exhausts.	(b)–(g)	General, CA, CO, TI, CI, PE, TE.	(a), (i), (j), (k), (c)(1), (d), (e), (f), (g).	(a), (d)(7), (f), (g), (h), (d)(1)(i), (d)(2)(i), (d)(3), (d)(4), (d)(5), (d)(6).
(a)(2)—Gaseous emission test for coating operations using carbon adsorption beds with individual exhausts.	(b)–(g)	General, CA, PE, TE	(a), (i), (j), (k), (c)(2), (g).	(a), (d)(7), (f), (g), (h), (d)(1)(ii), (d)(2)(ii), (d)(6).
(a)(3)—Monthly liquid material balance—can be used only when a VOC recovery device controls only those emissions from one affected coating operation.	(a)	VOC recovery	(i), (k)	(e), (f), (g), (h).
(a)(4)—Short-term (3 to 7 day) liquid material balance—may be used as an alternative to (a)(3).	(a)	General, CA, CO, PE, TE.	(a), (i), (j), (k), (c)(1), (c)(2), (d), (g).	(a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(3), (d)(6).
(b)—Alternative standard for coating operation—demonstrate use of approved total enclosure and emissions vented to a 95 percent efficient control device.	(b)–(g)	General, CA, CO, TI, CI, PE, TE.	(a), (i), (j), (k), (c)(1), (c)(2), (d), (e), (f), (h).	(a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(3), (d)(4), (d)(5), (d)(6).
B. Coating mix preparation equipment:				
(c)—Standard for equipment servicing a coating operation with concurrent construction of a control device that uses at least 130 Mg/yr of VOC—demonstrate that covers meeting specifications are installed and used properly; procedures detailing proper use are posted; the mix equipment is vented to a 95 percent efficient control device.	(b)–(g)	General, CA, TI, CI	(a), (i), (j), (k), (c)(1), (c)(2), (e), (f).	(a), (d)(7), (f), (g), (h), (d)(1), (d)(2), (d)(4), (d)(5).

TABLE 1B—CROSS REFERENCE—Continued

Compliance provisions—§60.743	Test methods—§60.745	Category/equipment[a]	Monitoring requirements—§60.744	Reporting and recordkeeping requirements—§60.747
(d)—Standard for equipment servicing a coating operation that does not have concurrent construction of a control device but uses at least 130 Mg/yr of VOC or for equipment servicing a coating operation that uses <130 Mg/yr but ≥95 Mg/yr of VOC—demonstrate that covers meeting specifications are installed and used properly; procedures detailing proper use are posted; the mix equipment is vented to a control device (optional).	No other requirements apply.	....	....	

[a] CA=carbon adsorber; CO=condenser; TI=thermal incinerator; CI=catalytic incinerator; PE=partial enclosure; TE=total enclosure.

§60.742 Standards for volatile organic compounds.

(a) Each owner or operator of an affected facility that is subject to the requirements of this subpart shall comply with the emissions limitations set forth in this section on and after the date on which the initial performance test required by §60.8 is completed, but not later than 60 days after achieving the maximum production rate at which the affected facility will be operated or 180 days after initial startup, whichever date comes first.

(b) For the coating operation, each owner or operator of an affected facility shall either:

(1) Reduce VOC emissions to the atmosphere from the coating operation by at least 90 percent (''emission reduction'' standard); or

(2) Install, operate, and maintain a total enclosure around the coating operation and vent the captured VOC emissions from the total enclosure to a control device that is at least 95 percent effecient (alternative standard).

(c) For the onsite coating mix preparation equipment of an affected facility, the owner or operator shall comply with the following requirements, as applicable:

(1) For an affected facility that has concurrent construction of a control device and uses at least 130 Mg of VOC per 12-month period, the owner or operator shall install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions from the covered mix equipment to a 95 percent efficient control device while preparation of the coating is taking place within the vessel.

(2) For an affected facility that does not have concurrent construction of a control device but uses at least 130 Mg of VOC per 12-month period, the owner or operator shall either:

(i) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment; or

(ii) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions to a VOC control device.

(3) For an affected facility that uses at least 95 Mg but less than 130 Mg of VOC per 12-month period, the owner or operator shall either.

(i) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment; or

(ii) Install, operate, and maintain a cover on each piece of affected coating mix preparation equipment and vent VOC emissions to a VOC control device.

§60.743 Compliance provisions.

(a) To demonstrate compliance with the emission reduction standard for coating operations specified in §60.742(b)(1), the owner or operator of the affected facility shall use one of the following methods.

(1) *Gaseous emission test for coating operations not using carbon adsorption beds with individual exhausts*. This method is

applicable when the emissions from any affected coating operation are controlled by a control device other than a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel. The owner or operator using this method shall comply with the following procedures:

(i) Construct the vapor capture system and control device so that all gaseous volumetric flow rates and total VOC emissions can be accurately determined by the applicable test methods and procedures specified in § 60.745(b) through (g);

(ii) Determine capture efficiency from the coating operation by capturing, venting, and measuring all VOC emissions from the coating operation. During a performance test, the owner or operator of an affected coating operation located in an area with other sources of VOC shall isolate the coating operation emissions from all other sources of VOC by one of the following methods:

(A) Build a temporary enclosure, as defined in § 60.741(a) and conforming to the requirements of § 60.743(b)(1), around the affected coating operation. The temporary enclosure must be constructed and ventilated (through stacks suitable for testing) so that it has minimal impact on performance of the capture system; or

(B) Shut down all other sources of VOC and continue to exhaust fugitive emissions from the affected coating operation through any building ventilation system and other room exhausts such as those on drying ovens. All such ventilation air must be vented through stacks suitable for testing because the VOC content in each must be determined.

(iii) Operate the emission control device with all emission sources connected and operating.

(iv) Determine the efficiency (E) of the control device by Equation 1:

$$E = \frac{\sum_{i=1}^{n} Q_{bi}C_{bi} - \sum_{j=1}^{n} Q_{aj}C_{aj}}{\sum_{i=1}^{n} Q_{bi}C_{bi}} \qquad \text{(Equation 1)}$$

(v) Determine the efficiency (F) of the vapor capture system by Equation 2:

$$F = \frac{\sum_{i=1}^{n} Q_{di}C_{di}}{\sum_{i=1}^{n} Q_{di}C_{di} + \sum_{k=1}^{p} Q_{fk}C_{fk}} \qquad \text{(Equation 2)}$$

(vi) For each affected coating operation subject to § 60.742(b)(1) (emission reduction standard for coating operations), compliance is demonstrated if the product of (E)x(F) is equal to or greater than 0.90.

(2) *Gaseous emission test for coating operations using carbon adsorption beds with individual exhausts.* This method is

applicable when emissions from any affected coating operation are controlled by a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel. The owner or operator using this method shall comply with the following procedures:

(i) Construct the vapor capture system and control device so that each volumetric flow rate and the total VOC emissions can be accurately determined by the applicable test methods and procedures specified in §60.745 (b) through (g);

(ii) Assure that all VOC emissions from the coating operation are segregated from other VOC sources and that the emissions can be captured for measurement, as described in §60.743(a)(1)(ii) (A) and (B);

(iii) Operate the emission control device with all emission sources connected and operating;

(iv) Determine the efficiency (H_v) of each individual adsorber vessel (v) using Equation 3:

$$H_v = \frac{Q_{gv}C_{gv} - Q_{hv}C_{hv}}{Q_{gv}C_{gv}} \qquad \text{(Equation 3)}$$

(v) Determine the efficiency of the carbon adsorption system (H_{sys}) by computing the average efficiency of the adsorber vessels as weighted by the volumetric flow rate (Q_{hv}) of each individual adsorber vessel (v) using Equation 4:

$$H_{sys} = \frac{\sum_{v=1}^{g} H_v Q_{hv}}{\sum_{v=1}^{g} Q_{hv}} \qquad \text{(Equation 4)}$$

(vi) Determine the efficiency (F) of the vapor capture system using Equation (2).

(vii) For each affected coating operation subject to §60.742(b)(1) (emission reduction standard for coating operations), compliance is demonstrated if the product of (H_{sys})x(F) is equal to or greater than 0.90.

(3) *Monthly liquid material balance.* This method can be used only when a VOC recovery device controls only those emissions from one affected coating operation. It may not be used if the VOC recovery device controls emissions from any other VOC emission sources. When demonstrating compliance by this method, §60.8(f) (Performance Tests) of this part does not apply. The owner or operator using this method shall comply with the following procedures to determine the VOC emission reduction for each nominal 1-month period:

(i) Measure the amount of coating applied at the coating applicator. This quantity shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the amount of coating has been determined;

(ii) Determine the VOC content of all coatings applied using the test method specified in §60.745(a). This value shall be determined at a time and location in the process after all ingredients (including any dilution solvent) have been added to the coating, or appropriate adjustments shall be made to account for any ingredients added after the VOC content in the coating has been determined;

(iii) Install, calibrate, maintain, and operate, according to the manufacturer's specifications, a device that indicates the cumulative amount of VOC recovered by the control device over each nominal 1-month period. The device shall be certified by the manufacturer to be accurate to within ±2.0 percent;

(iv) Measure the amount of VOC recovered; and

(v) Calculate the overall VOC emission reduction (R) for each and every nominal 1-month period using Equation 5. Emissions during startups and shutdowns are to be included when determining R because startups and shutdowns are part of normal operation for this source category.

$$R = \frac{M_r}{\sum_{i=1}^{n} [W_{oi} M_{ci} - RS_i]} \qquad \text{(Equation 5)}$$

If the value of R is equal to or greater than 0.90, compliance with § 60.742(b)(1) is demonstrated.

(A) The value of RS_i is zero unless the owner or operator submits the following information to the Administrator for approval of a measured value of RS_i that is greater than zero but less than or equal to 6 percent by weight of the liquid VOC applied:

(*1*) Measurement techniques; and

(*2*) Documentation that the measured value of RS_i exceeds zero but is less than or equal to 6 percent by weight of the liquid VOC applied.

(B) For those facilities not subject to paragraph (a)(3)(v)(A) of this section, the value of RS_i is zero unless the owner or operator submits the following information to the Administrator for approval of a measured value of RS_i that is greater than 6 percent by weight of the liquid VOC applied.

(*1*) Measurement techniques;

(*2*) Documentation that the measured value of RS_i exceeds 6 percent by weight of the liquid VOC applied; and

(*3*) Either documentation of customer specifications requiring higher values or documentation that the desired properties of the product make it necessary for RS_i to exceed 6 percent by weight of the liquid VOC applied and that such properties cannot be achieved by other means.

(C) The measurement techniques of paragraphs (a)(3)(v)(A)(*1*) and (a)(3)(v)(B)(*1*) of this section shall be submitted to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2).

(vi) The point at which M_r is to be measured shall be established when the compliance procedures are approved. The presumptive point of measurement shall be prior to separation/ purification; a point after separation/purification may be adopted for enhanced convenience or accuracy.

(4) *Short-term liquid material balance.* This method may be used as an alternative to the monthly liquid material balance described in paragraph (a)(3) of this section. The owner or operator using this method shall comply with the following procedures to determine VOC emission reduction for a 3- to 7-day period and shall continuously monitor VOC emissions as specified in § 60.744.

(i) Use the procedures described in paragraphs (a)(3) (i) through (vi) of this section to determine the overall emission reduction, R. Compliance is demonstrated if the value of R is equal to or greater than 0.90.

(ii) The number of days for the performance test (3 to 7) is to be based on the affected facility's representative performance consistent with the requirements of § 60.8(c). Data demonstrating that the chosen test period is representative shall be submitted to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2).

(b) Each owner or operator of an affected coating operation subject to the standard specified in § 60.742(b)(2) (alternative standard for coating operations) shall:

(1) Demonstrate that a total enclosure is installed. The total enclosure shall either be approved by the Administrator in accordance with the provisions of § 60.746, or meet the requirements in paragraphs (b)(1) (i) through (vi) of this section, as follows:

(i) The only openings in the enclosure are forced makeup air and exhaust ducts and natural draft openings such as those through which raw materials enter and exist the coating operation;

(ii) Total area of all natural draft openings does not exceed 5 percent of the total surface area of the total enclosure's walls, floor, and ceiling;

(iii) All access doors and windows are closed during normal operation of the enclosed coating operation, except for brief, occasional openings to accommodate process equipment adjustments. If such openings are frequent, or if the access door or window remains open for a significant amount of time during the process operation, it must be considered a natural draft opening. Access doors used routinely by workers to enter and exit the enclosed area shall be equipped with automatic closure devices;

(iv) Average inward face velocity (FV) across all natural draft openings is a minimum of 3,600 meters per hour as determined by the following procedures:

(A) Construct all forced makeup air ducts and all exhaust ducts so that the volumetric flow rate in each can be accurately determined by the test methods and procedures specified in § 60.745 (c) and (d). Volumetric flow rates shall be calculated without the adjustment normally made for moisture content; and

(B) Determine FV by Equation 6:

$$FV = \frac{\sum_{j=1}^{n} Q_{out\ j} - \sum_{i=1}^{p} Q_{in\ i}}{\sum_{k=1}^{q} A_k} \qquad \text{(Equation 6)}$$

(v) The air passing through all natural draft openings flows into the enclosure continuously. If FV is less than or equal to 9,000 meters per hour, the continuous inward airflow shall be verified by continuous observation using smoke tubes, streamers, tracer gases, or other means approved by the Administrator over the period that the volumetric flow rate tests required to determine FV are carried out. If FV is greater than 9,000 meters per hour, the direction of airflow thourgh the natural draft openings shall be presumed to be inward at all times without verification.

(vi) All sources of emissions within the enclosure shall be a minimum of four equivalent diameters away from each natural draft opening.

(2) Determine the control device efficiency using Equation (1) or Equations (3) and (4), as applicable, and the test methods and procedures specified in § 60.745 (b) through (g).

(3) Compliance is demonstrated if the installation of a total enclosure is demonstrated and the value of E determined from Equation (1) or the value of H_{sys} determined from Equations (3) and (4), as applicable, is equal to or greater than 0.95.

(c) To demonstrate compliance with § 60.742(c)(1) (standard for coating mix preparation equipment servicing a coating operation with concurrent construction of a control device that uses at least 130 Mg per year of VOC), each owner or operator of affected coating mix preparation equipment shall demonstrate that:

(1) Covers meeting the following specifications have been installed and are being used properly:

(i) Cover shall be closed at all times except when adding ingredients, withdrawing samples, transferring the contents, or making visual inspection when such activities cannot be carried out with cover in place. Such activities shall be carried out through ports of the minimum practical size;

(ii) Cover shall extend at least 2 centimeters beyond the outer rim of the opening or shall be attached to the rim;

(iii) Cover shall be of such design and construction that contact is maintained between cover and rim along the entire perimeter;

(iv) Any breach in the cover (such as a slit for insertion of a mixer shaft or port for addition of ingredients) shall be covered consistent with paragraphs (c)(1) (i), (ii), and (iii) of this section when not actively in use. An opening sufficient to allow safe clearance for a mixer shaft is acceptable during those periods when the shaft is in place; and

(v) A polyehtylene or nonpermanent cover may be used provided it meets the requirements of paragraphs (c)(1) (ii), (iii), and (iv) of this section. Such a cover shall not be reused after once being removed.

(2) Procedures detailing the proper use of covers, as specified in paragraph (c)(1)(i) of this section, have been posted in all areas where affected coatings mix preparation equipment is used;

(3) The coating mix preparation equipment is vented to a control device while preparation of the coating is taking place within the vessel; and

(4) The control device efficiency (E or H_{sys}, as applicable) determined using Equation (1) or Equations (3) and (4), respectively, and the test methods and procedures specified in § 60.745 (b) through (g) is equal to or greater than 0.95.

(d) To demonstrate compliance with § 60.742(c)(2) (standard for coating mix preparation equipment servicing a coating operation that does not have concurrent construction of a control device but uses at least 130 Mg of VOC per year) or § 60.742(c)(3) (standard for coating mix preparation equipment servicing a coating operation that uses at least 95 Mg but less than 130 Mg of VOC per year), each owner or operator of affected coating mix preparation equipment shall demonstrate upon inspection that:

(1) Covers satisfying the specifications in paragraphs (c)(1) (i) through (v) of this section have been installed and are being properly operated and maintained; and

(2) Procedures detailing the proper use of covers, as specified in paragraph (c)(1)(i) of this section, have been posted in all areas where affected coating mix preparation equipment is used.

(3) Owners or operators meeting the standard specified in § 60.742 (c)(2)(ii) or (c)(3)(ii) shall also demonstrate that the coating mix preparation equipment is vented to a control device.

(e) If a control device other than a carbon adsorber, condenser, or incinerator is used to control emissions from an affected facility, the necessary operating specifications for that device must be approved by the Administrator. An example of such a device is a flare.

§ 60.744 Monitoring requirements.

(a) Each owner or operator of an affected facility shall install and calibrate all monitoring devices required under the provisions of this section according to the manufacturer's specifications, prior to the initial performance test in locations such that representative values of the monitored parameters will be obtained. The parameters to be monitored shall be continuously measured and recorded during each performance test.

(b) Each owner or operator of an affected facility that uses less than 95 Mg of VOC per year and each owner or operator of an affected facility subject to the provisions specified in § 60.742(c)(3) shall:

(1) Make semiannual estimates of the projected annual amount of VOC to be

used for the manufacture of polymeric coated substrate at the affected coating operation in that year; and

(2) Maintain records of actual VOC use.

(c) Each owner or operator of an affected facility controlled by a carbon adsorption system and demonstrating compliance by the procedures described in §60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) or §60.743(a)(4) (short-term liquid material balance) shall carry out the monitoring provisions of paragraph (c)(1) or (2) of this section, as appropriate.

(1) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in either the control device outlet gas stream or in both the control device inlet and outlet gas streams. The outlet gas stream shall be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in §60.747(d)(1)(i). The inlet and outlet gas streams shall be monitored if the percent control device efficiency is used as the basis for reporting, as described in §60.747(d)(2)(i).

(2) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the concentration level of organic compounds in the outlet gas stream for a minimum of one complete adsorption cycle per day for each adsorber vessel. The owner or operator may also monitor and record the concentration level of organic compounds in the common carbon adsorption system inlet gas stream or in each individual carbon adsorber vessel inlet stream. The outlet gas streams shall be monitored if the percent increase in the concentration level of organic compounds is used as the basis for reporting, as described in §60.747(d)(1)(ii). In this case, the owner or operator shall compute daily a 3-day rolling average concentration level of organics in the outlet gas stream from each individual adsorber vessel. The inlet and outlet gas streams shall be monitored if the percent control device efficiency is used as the basis for reporting, as described in §60.747(d)(2)(ii). In this case, the owner or operator shall compute daily a 3-day rolling average efficiency for each individual adsorber vessel.

(d) Each owner or operator of an affected facility controlled by a condensation system and demonstrating compliance by the test methods described in §60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) or §60.743(a)(4) (short-term liquid material balance) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the temperature of the condenser exhaust stream.

(e) Each owner or operator of an affected facility controlled by a thermal incinerator and demonstrating compliance by the test methods described in §60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the combustion temperature of the incinerator. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(f) Each owner or operator of an affected facility controlled by a catalytic incinerator and demonstrating compliance by the test methods described in §60.743 (a)(1), (2), (b), or (c) (which include control device efficiency determinations) shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the gas temperature both upstream and downstream of the catalyst bed. The monitoring device shall have an accuracy within ±1 percent of the temperature being measured in Celsius degrees.

(g) Each owner or operator of an affected facility who demonstrates compliance by the test methods described in §60.743(a)(1) or (2) (which include vapor capture system efficiency determinations) or § 60.743(a)(4) (short-term liquid material balance) shall submit a monitoring plan for the vapor capture system to the Administrator for approval with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions. This plan shall identify the parameter to be monitored as an indicator of vapor capture system performance (e.g., the amperage to the exhaust fans or duct flow rates) and the method for monitoring the chosen parameter. The owner or operator shall install, calibrate, maintain, and operate, according to the manufacturer's specifications, a monitoring device that continuously indicates and records the value of the chosen parameter.

(h) Each owner or operator of an affected facility who demonstrates compliance as described in § 60.743(b) shall follow the procedures described in paragraph (g) of this section to establish a monitoring system for the total enclosure.

(i) Each owner or operator of an affected facility shall record time periods of mixing or coating operations when the emission control device is malfunctioning or not in use.

(j) Each owner or operator of an affected facility shall record time periods of mixing or coating operations when each monitoring device is malfunctioning or not in use.

(k) Records of the measurements and calculations required in § 60.743 and § 60.744 must be retained for at least 2 years following the date of the measurements and calculations.

§ 60.745 Test methods and procedures.

Methods in appendix A of this part, except as provided under § 60.8(b), shall be used to determine compliance as follows:

(a) Method 24 is used to determine the VOC content in coatings. If it is demonstrated to the satisfaction of the Administrator that coating formulation data are equivalent to Method 24 results, formulation data may be used. In the event of any inconsistency between a Method 24 test and a facility's formulation data, the Method 24 test will govern. For Method 24, the coating sample must be a 1-liter sample collected in a 1-liter container at a point in the process where the sample will be representative of the coating applied to the substrate (i.e., the sample shall include any dilution solvent or other VOC added during the manufacturing process). The container must be tightly sealed immediately after the sample is collected. Any solvent or other VOC added after the sample is taken must be measured and accounted for in the calculations that use Method 24 results.

(b) Method 25 shall be used to determine VOC concentrations from incinerator gas streams. Alternative Methods (18 or 25A), may be used as explained in the applicability section of Method 25 in cases where use of Method 25 is demonstrated to be technically infeasible. The owner or operator shall submit notice of the intended test method to the Administrator for approval along with the notification of the performance test required under § 60.8(d) of the General Provisions. Except as indicated in paragraphs (b)(1) and (b)(2) of this section, the test shall consist of three separate runs, each lasting a minimum of 30 minutes.

(1) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with a common exhaust stack for all the individual adsorber vessels pursuant to § 60.743 (a)(1), (b), or (c), the test shall consist of three separate runs, each coinciding with one or more complete system rotations through the adsorption cycles of all the individual adsorber vessels.

(2) When the method is to be used in the determination of the efficiency of a fixed-bed carbon adsorption system with individual exhaust stacks for each adsorber vessel pursuant to § 60.743 (a)(2), (b), or (c), each adsorber vessel shall be tested individually. Each test shall consist of three separate runs, each coinciding with one or more complete adsorption cycles.

(c) Method 1 or 1A is used for sample and velocity traverses;

(d) Method 2, 2A, 2C, or 2D is used for velocity and volumetric flow rates;

(e) Method 3 is used for gas analysis;

(f) Method 4 is used for stack gas moisture;

(g) Methods 2, 2A, 2C, or 2D; 3; and 4 shall be performed, as applicable, at least twice during each test run.

§ 60.746 Permission to use alternative means of emission limitation.

(a) If, in the Administrator's judgment, an alternative means of emission limitation will achieve a reduction in emissions of VOC from any emission point subject to § 60.742(c) at least equivalent to that required by § 60.742(b)(2) or § 60.742(c), respectively, the Administrator will publish in the FEDERAL REGISTER a notice permitting the use of the alternative means. The Administrator may condition permission on requirements that may be necessary to ensure operation and maintenance to achieve the same emission reduction as specified in § 60.742(b)(2) or § 60.742(c), respectively.

(b) Any notice under paragraph (a) of this section shall be published only after public notice and an opportunity for a public hearing.

(c) Any person seeking permission under this section shall submit to the Administrator either results from an emission test that accurately collects and measures all VOC emissions from a given control device or an engineering evaluation that accurately determines such emissions.

§ 60.747 Reporting and recordkeeping requirements.

(a) For each affected facility subject to the requirements of § 60.742(b) and (c), the owner or operator shall submit the performance test data and results to the Administrator as specified in § 60.8(a) of this part. In addition, the average values of the monitored parameters measured at least every 15 minutes and averaged over the period of the performance test shall be submitted with the results of all performance tests.

(b) Each owner or operator of an affected facility subject to the provisions specified in § 60.742(c)(3) and claiming to use less than 130 Mg of VOC in the first year of operation and each owner or operator of an affected facility claiming to use less than 95 Mg of VOC in the first year of operation shall submit to the Administrator, with the notification of anticipated startup required under § 60.7(a)(2) of the General Provisions, a material flow chart indicating projected VOC use. The owner or operator shall also submit actual VOC use records at the end of the initial year.

(c) Each owner or operator of an affected facility subject to the provisions of § 60.742(c)(3) and initially using less than 130 Mg of VOC per year and each owner or operator of an affected facility initially using less than 95 Mg of VOC per year shall:

(1) Record semiannual estimates of projected VOC use and actual 12-month VOC use;

(2) Report the first semiannual estimate in which projected annual VOC use exceeds the applicable cutoff; and

(3) Report the first 12-month period in which the actual VOC use exceeds the applicable cutoff.

(d) Each owner or operator of an affected facility demonstrating compliance by the methods described in § 60.743(a)(1), (2), (4), (b), or (c) shall maintain records and submit quarterly reports to the Administrator documenting the following:

(1) For those affected facilities monitoring only the carbon adsorption system outlet concentration levels of organic compounds, the periods (during actual coating operations) specified in paragraph (d)(1)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive system rotations through the adsorption cycles of all the individual adsorber vessels during which the average value of the concentration level of organic compounds in the common outlet gas stream is more than 20 percent greater than the average value measured during the most recent performance test that demonstrated compliance.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel when the concentration level of organic compounds in the individual outlet gas stream is more than 20 percent greater than the average value for that adsorber vessel measured during the most recent performance test that demonstrated compliance.

(2) For those affected facilities monitoring both the carbon adsorption system inlet and outlet concentration levels of organic compounds, the periods (during actual coating operations), specified in paragraph (d)(2)(i) or (ii) of this section, as applicable.

(i) For carbon adsorption systems with a common exhaust stack for all the individual adsorber vessels, all periods of three consecutive adsorption cycles of all the individual adsorber vessels during which the average carbon adsorption system efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.743(a)(1), the value of E determined using Equation (1) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance by the performance test described in § 60.743(a)(4), the average value of the system efficiency measured with the monitor during the most recent performance test that demonstrated compliance.

(C) For those affected facilities demonstrating compliance pursuant to § 60.743(b) or (c), 0.95.

(ii) For carbon adsorption systems with individual exhaust stacks for each adsorber vessel, all 3-day rolling averages for each adsorber vessel during which the average carbon adsorber vessel efficiency falls below the applicable level as follows:

(A) For those affected facilities demonstrating compliance by the performance test method described in § 60.743(a)(2), (b), or (c), the value of H_v determined using Equation (3) during the most recent performance test that demonstrated compliance.

(B) For those affected facilities demonstrating compliance by the performance test described in § 60.743(a)(4), the average efficiency for that adsorber vessel measured with the monitor during the most recent performance test that demonstrated compliance.

(3) For those affected facilities monitoring condenser exhaust gas temperature, all 3-hour periods (during actual coating operations) during which the average exhaust temperature is 5 or more Celsius degrees above the average temperature measured during the most recent performance test that demonstrated compliance;

(4) For those affected facilities monitoring thermal incinerator combustion gas temperature, all 3-hour periods (during actual coating operations) during which the average combustion temperature of the device is more than 28 Celsius degrees below the average combustion temperature of the device during the most recent performance test that demonstrated compliance;

(5) For those affected facilities monitoring catalytic incinerator catalyst bed temperature, all 3-hour periods (during actual coating operations) during which the average gas temperature immediately before the catalyst bed is more than 28 Celsius degrees below the average gas temperature during the most recent performance test that demonstrated compliance and all 3-hour periods (during actual coating operations) during which the average gas temperature difference across the catalyst bed is less than 80 percent of the average gas temperature difference during the most recent performance test that demonstrated compliance;

(6) For each affected facility monitoring a total enclosure pursuant to § 60.744(h) or vapor capture system pursuant to § 60.744(g), all 3-hour periods (during actual coating operations) during which the average total enclosure or vapor capture system monitor readings vary by 5 percent or more from the average value measured during the most recent performance test that demonstrated compliance.

(7) Each owner or operator of an affected coating operation not required to submit reports under paragraphs (d)(1) through (6) of this section because no reportable periods have occurred shall submit semiannual statements clarifying this fact.

(e) Each owner or operator of an affected coating operation, demonstrating compliance by the test methods described in § 60.743(a)(3) (liquid-liquid material balance) shall submit the following:

(1) For months of compliance, semiannual reports to the Administrator

stating that the affected coating operation was in compliance for each 1-month period; and

(2) For months of noncompliance, quarterly reports to the Administrator documenting the 1-month amount of VOC contained in the coatings, the 1-month amount of VOC recovered, and the percent emission reduction for each month.

(f) Each owner or operator of an affected coating operation, either by itself or with associated coating mix preparation equipment, shall submit the following with the reports required under paragraphs (d) and (e) of this section:

(1) All periods during actual mixing or coating operations when a required monitoring device (if any) was malfunctioning or not operating; and

(2) All periods during actual mixing or coating operations when the control device was malfunctioning or not operating.

(g) The reports required under paragraphs (b), (c), (d), and (e) of this section shall be postmarked within 30 days of the end of the reporting period.

(h) Records required in §60.747 must be retained for at least 2 years.

(i) The requirements of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In this event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

§60.748 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities that will not be delegated to States: §§60.743(a)(3)(v) (A) and (B); 60.743(e); 60.745(a); 60.746.

Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills

SOURCE: 61 FR 9919, Mar. 12, 1996, unless otherwise noted.

§60.750 Applicability, designation of affected facility, and delegation of authority.

(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with Subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.

(b) The following authorities shall be retained by the Administrator and not transferred to the State: §60.754(a)(5).

(c) Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification for purposes of this subpart.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

§60.751 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

Active collection system means a gas collection system that uses gas mover equipment.

Active landfill means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

Closed landfill means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under §60.7(a)(4). Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.

Closure means that point in time when a landfill becomes a closed landfill.

Commercial solid waste means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

Controlled landfill means any landfill at which collection and control systems are required under this subpart as a result of the nonmethane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with § 60.752(b)(2)(i).

Design capacity means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site specific density, which must be recalculated annually.

Disposal facility means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

Emission rate cutoff means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

Enclosed combustor means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

Flare means an open combustor without enclosure or shroud.

Gas mover equipment means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

Household waste means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

Industrial solid waste means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of this title. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Interior well means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under § 257.2 of this title.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

Modification means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.

Municipal solid waste landfill or *MSW landfill* means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (§ 257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

Municipal solid waste landfill emissions or *MSW landfill emissions* means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

NMOC means nonmethane organic compounds, as measured according to the provisions of § 60.754.

Nondegradable waste means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

Passive collection system means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

Sludge means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.

Solid waste means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 et seq.).

Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this part.

Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9262, Feb. 24, 1999]

§ 60.752 Standards for air emissions from municipal solid waste landfills.

(a) Each owner or operator of an MSW landfill having a design capacity less than 2.5 million megagrams by mass or 2.5 million cubic meters by volume shall submit an initial design capacity report to the Administrator as provided in § 60.757(a). The landfill may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report. Submittal of the initial design capacity report shall fulfill the requirements of this subpart except as provided for in paragraphs (a)(1) and (a)(2) of this section.

(1) The owner or operator shall submit to the Administrator an amended design capacity report, as provided for in § 60.757(a)(3).

(2) When an increase in the maximum design capacity of a landfill exempted from the provisions of § 60.752(b) through § 60.759 of this subpart on the basis of the design capacity exemption in paragraph (a) of this section results in a revised maximum design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, the owner or operator shall comply with the provision of paragraph (b) of this section.

(b) Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, shall either comply with paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in § 60.754. The NMOC emission rate shall be recalculated annually, except as provided in § 60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.

(1) If the calculated NMOC emission rate is less than 50 megagrams per year, the owner or operator shall:

(i) Submit an annual emission report to the Administrator, except as provided for in § 60.757(b)(1)(ii); and

(ii) Recalculate the NMOC emission rate annually using the procedures specified in § 60.754(a)(1) until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed.

(A) If the NMOC emission rate, upon recalculation required in paragraph (b)(1)(ii) of this section, is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system in compliance with paragraph (b)(2) of this section.

(B) If the landfill is permanently closed, a closure notification shall be submitted to the Administrator as provided for in § 60.757(d).

(2) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

(i) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:

(A) The collection and control system as described in the plan shall meet the design requirements of paragraph (b)(2)(ii) of this section.

(B) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§ 60.753 through 60.758 proposed by the owner or operator.

(C) The collection and control system design plan shall either conform with specifications for active collection systems in § 60.759 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to § 60.759.

(D) The Administrator shall review the information submitted under paragraphs (b)(2)(i) (A),(B) and (C) of this section and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.

(ii) Install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(A) or (B) and (b)(2)(iii) of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in § 60.757(c)(1) or (2).

(A) An active collection system shall:

(*1*) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;

(*2*) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of:

(*i*) 5 years or more if active; or

(*ii*) 2 years or more if closed or at final grade.

(*3*) Collect gas at a sufficient extraction rate;

(*4*) Be designed to minimize off-site migration of subsurface gas.

(B) A passive collection system shall:

(*1*) Comply with the provisions specified in paragraphs (b)(2)(ii)(A)(*1*), (*2*), and (2)(ii)(A)(*4*) of this section.

(*2*) Be installed with liners on the bottom and all sides in all areas in which gas is to be collected. The liners shall be installed as required under § 258.40.

(iii) Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of this section.

(A) An open flare designed and operated in accordance with § 60.18;

(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in § 60.754(d).

(*1*) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

(*2*) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in § 60.756;

(C) Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of paragraph (b)(2)(iii) (A) or (B) of this section.

(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of §§ 60.753, 60.755 and 60.756.

(v) The collection and control system may be capped or removed provided that all the conditions of paragraphs (b)(2)(v) (A), (B), and (C) of this section are met:

(A) The landfill shall be a closed landfill as defined in § 60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in § 60.757(d);

(B) The collection and control system shall have been in operation a minimum of 15 years; and

(C) Following the procedures specified in § 60.754(b) of this subpart, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.

(c) For purposes of obtaining an operating permit under title V of the Act, the owner or operator of a MSW landfill subject to this subpart with a design capacity less than 2.5 million megagrams or 2.5 million cubic meters is not subject to the requirement to obtain an operating permit for the landfill under part 70 or 71 of this chapter, unless the landfill is otherwise subject to either part 70 or 71. For purposes of submitting a timely application for an operating permit under part 70 or 71, the owner or operator of a MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters, and not otherwise subject to either part 70 or 71, becomes subject to the requirements of §§ 70.5(a)(1)(i) or 71.5(a)(1)(i) of this chapter, regardless of when the design capacity report is actually submitted, no later than:

(1) June 10, 1996 for MSW landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996;

(2) Ninety days after the date of commenced construction, modification, or reconstruction for MSW landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement for a control system under paragraph (b)(2) of this section; or

(2) The owner or operator meets the conditions for control system removal specified in paragraph (b)(2)(v) of this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000]

§ 60.753 Operational standards for collection and control systems.

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of § 60.752(b)(2)(ii) of this subpart shall:

(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade;

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

(1) A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in § 60.757(f)(1);

(2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;

(3) A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator;

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

(1) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by § 60.752(b)(2)(i) of this subpart.

(2) Unless an alternative test method is established as allowed by § 60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

(ii) A data recorder is not required;

(iii) Only two calibration gases are required, a zero and span, and ambient air may be used as the span;

(iv) A calibration error check is not required;

(v) The allowable sample bias, zero drift, and calibration drift are ±10 percent.

(d) Operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with § 60.752(b)(2)(iii). In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour; and

(f) Operate the control or treatment system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in § 60.755(a)(3) through (5) or § 60.755(c) of this subpart. If corrective actions are taken as specified in § 60.755, the monitored exceedance is not a violation of the operational requirements in this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 61778, Oct. 17, 2000]

§ 60.754 Test methods and procedures.

(a)(1) The landfill owner or operator shall calculate the NMOC emission rate using either the equation provided in paragraph (a)(1)(i) of this section or the equation provided in paragraph (a)(1)(ii) of this section. Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in paragraph (a)(1)(i), for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in paragraph (a)(1)(ii), for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k, 170 cubic meters per megagram for L_O, and 4,000 parts per million by volume as hexane for the $C_{NMOC.}$ For landfills located in geographical areas with a thirty year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorologic site, the k value to be used is 0.02 per year.

(i) The following equation shall be used if the actual year-to-year solid waste acceptance rate is known.

$$M_{NMOC} = \sum_{i=1}^{n} 2\ k\ L_o M_i \left(e^{-kt} i\right)\left(C_{NMOC}\right)\left(3.6 \times 10^{-9}\right)$$

where,

M_{NMOC}=Total NMOC emission rate from the landfill, megagrams per year
k=methane generation rate constant, $year^{-1}$
L_o=methane generation potential, cubic meters per megagram solid waste
M_i=mass of solid waste in the i^{th} section, megagrams
t_i=age of the i^{th} section, years
C_{NMOC}=concentration of NMOC, parts per million by volume as hexane
3.6×10^{-9}=conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for M_i if documentation of the nature and amount of such wastes is maintained

(ii) The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{NMOC} = 2L_o\ R\ (e^{-kc} - e^{-kt})\ C_{NMOC}\ (3.6 \times 10^{-9})$$

Where:

M_{NMOC}=mass emission rate of NMOC, megagrams per year
L_o=methane generation potential, cubic meters per megagram solid waste
R=average annual acceptance rate, megagrams per year
k=methane generation rate constant, $year^{-1}$
t = age of landfill, years
C_{NMOC}=concentration of NMOC, parts per million by volume as hexane
c=time since closure, years; for active landfill c=O and $e^{-kc}1$
$3.6{\times}10-9$=conversion factor

The mass of nondegradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value of R, if documentation of the nature and amount of such wastes is maintained.

(2) *Tier 1.* The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC emission rate calculated in paragraph (a)(1) of this section is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in § 60.757(b)(1), and shall recalculate the NMOC mass emission rate annually as required under § 60.752(b)(1).

(ii) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the landfill owner shall either comply with

§ 60.752(b)(2), or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in paragraph (a)(3) of this section.

(3) *Tier 2.* The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure. The landfill owner or operator shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of nondegradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25 or 25C of Appendix A of this part. Method 18 of Appendix A of this part may be used to analyze the samples collected by the Method 25 or 25C sampling procedure. Taking composite samples from different probes into a single cylinder is allowed; however, equal sample volumes must be taken from each probe. For each composite, the sampling rate, collection times, beginning and ending cylinder vacuums, or alternative volume measurements must be recorded to verify that composite volumes are equal. Composite sample volumes should not be less than one liter unless evidence can be provided to substantiate the accuracy of smaller volumes. Terminate compositing before the cylinder approaches ambient pressure where measurement accuracy diminishes. If using Method 18, the owner or operator must identify all compounds in the sample and, as a minimum, test for those compounds published in the most recent Compilation of Air Pollutant Emission Factors (AP–42), minus carbon monoxide, hydrogen sulfide, and mercury. As a minimum, the instrument must be calibrated for each of the compounds on the list. Convert the concentration of each Method 18 compound to C_{NMOC} as hexane by multiplying by the ratio of its carbon atoms divided by six. If more than the required number of samples are taken, all samples must be used in the analysis. The landfill owner or operator must divide the NMOC concentration from Method 25 or 25C of Appendix A of this part by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane. If the landfill has an active or passive gas removal system in place, Method 25 or 25C samples may be collected from these systems instead of surface probes provided the removal system can be shown to provide sampling as representative as the two sampling probe per hectare requirement. For active collection systems, samples may be collected from the common header pipe before the gas moving or condensate removal equipment. For these systems, a minimum of three samples must be collected from the header pipe.

(i) The landfill owner or operator shall recalculate the NMOC mass emission rate using the equations provided in paragraph (a)(1)(i) or (a)(1)(ii) of this section and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in paragraph (a)(1) of this section.

(ii) If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the landfill owner or operator shall either comply with § 60.752(b)(2), or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in paragraph (a)(4) of this section.

(iii) If the resulting NMOC mass emission rate is less than 50 megagrams per year, the owner or operator shall submit a periodic estimate of the emission rate report as provided in § 60.757(b)(1) and retest the site-specific NMOC concentration every 5 years using the methods specified in this section.

(4) *Tier 3.* The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of this part. The landfill owner or operator shall estimate the NMOC mass emission rate using equations in paragraph (a)(1)(i) or (a)(1)(ii) of this section and

using a site-specific methane generation rate constant k, and the site-specific NMOC concentration as determined in paragraph (a)(3) of this section instead of the default values provided in paragraph (a)(1) of this section. The landfill owner or operator shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.

(i) If the NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the owner or operator shall comply with § 60.752(b)(2).

(ii) If the NMOC mass emission rate is less than 50 megagrams per year, then the owner or operator shall submit a periodic emission rate report as provided in § 60.757(b)(1) and shall recalculate the NMOC mass emission rate annually, as provided in § 60.757(b)(1) using the equations in paragraph (a)(1) of this section and using the site-specific methane generation rate constant and NMOC concentration obtained in paragraph (a)(3) of this section. The calculation of the methane generation rate constant is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations.

(5) The owner or operator may use other methods to determine the NMOC concentration or a site-specific k as an alternative to the methods required in paragraphs (a)(3) and (a)(4) of this section if the method has been approved by the Administrator.

(b) After the installation of a collection and control system in compliance with § 60.755, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in § 60.752(b)(2)(v), using the following equation:

$$M_{NMOC} = 1.89 \times 10^{-3} Q_{LFG} C_{NMOC}$$

where,

M_{NMOC} = mass emission rate of NMOC, megagrams per year

Q_{LFG} = flow rate of landfill gas, cubic meters per minute

C_{NMOC} = NMOC concentration, parts per million by volume as hexane

(1) The flow rate of landfill gas, Q_{LFG}, shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of appendix A of this part.

(2) The average NMOC concentration, C_{NMOC}, shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42). The sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of this part by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

(3) The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.

(c) When calculating emissions for PSD purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in §§ 51.166 or 52.21 of this chapter using AP–42 or other approved measurement procedures.

(d) For the performance test required in § 60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by § 60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42). The following equation shall be used to calculate efficiency:

Control Efficiency = $(NMOC_{in} - NMOC_{out})/(NMOC_{in})$

where,

$NMOC_{in}$ = mass of NMOC entering control device

$NMOC_{out}$ = mass of NMOC exiting control device

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 65 FR 61778, Oct. 17, 2000]

§ 60.755 Compliance provisions.

(a) Except as provided in § 60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of this section shall be used to determine whether the gas collection system is in compliance with § 60.752(b)(2)(ii).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with § 60.752(b)(2)(ii)(A)(*1*), one of the following equations shall be used. The k and L_o kinetic factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP–42) or other site specific values demonstrated to be appropriate and approved by the Administrator. If k has been determined as specified in § 60.754(a)(4), the value of k determined from the test shall be used. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

(i) For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_o\,R\,(e^{-kc} - e^{-kt})$$

where,

Q_m = maximum expected gas generation flow rate, cubic meters per year

L_o = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, $year^{-1}$

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years

c = time since closure, years (for an active landfill c = O and $e^{-kc} = 1$)

(ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^{n} 2\,k\,L_o\,M_i\left(e^{-kt}i\right)$$

where,

Q_M=maximum expected gas generation flow rate, cubic meters per year

k=methane generation rate constant, $year^{-1}$

L_o=methane generation potential, cubic meters per megagram solid waste

M_i=mass of solid waste in the i^{th} section, megagrams

t_i=age of the i^{th} section, years

(iii) If a collection and control system has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in paragraphs (a)(1) (i) and (ii) of this section. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in paragraphs (a)(1) (i) or (ii) or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.

(2) For the purposes of determining sufficient density of gas collectors for compliance with § 60.752(b)(2)(ii)(A)(*2*), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with § 60.752(b)(2)(ii)(A)(*3*), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under

§60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(4) Owners or operators are not required to expand the system as required in paragraph (a)(3) of this section during the first 180 days after gas collection system startup.

(5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(6) An owner or operator seeking to demonstrate compliance with §60.752(b)(2)(ii)(A)(*4*) through the use of a collection system not conforming to the specifications provided in §60.759 shall provide information satisfactory to the Administrator as specified in §60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.

(b) For purposes of compliance with §60.753(a), each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan as provided in §60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

(c) The following procedures shall be used for compliance with the surface methane operational standard as provided in §60.753(d).

(1) After installation of the collection system, the owner or operator shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in paragraph (d) of this section.

(2) The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.

(3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4) (i) through (v) of this section shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of §60.753(d).

(i) The location of each monitored exceedance shall be marked and the location recorded.

(ii) Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.

(iii) If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(v) has been taken.

(iv) Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in paragraph (c)(4) (ii) or (iii) of this section shall be re-monitored 1 month from the initial exceedance. If the 1-month remonitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month remonitoring shows an exceedance, the actions specified in paragraph (c)(4) (iii) or (v) shall be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that ‘‘methane’’ shall replace all references to VOC.

(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of this part shall be used.

(4) The calibration procedures provided in section 4.2 of Method 21 of appendix A of this part shall be followed immediately before commencing a surface monitoring survey.

(e) The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998]

§ 60.756 Monitoring of operations.

Except as provided in § 60.752(b)(2)(i)(B),

(a) Each owner or operator seeking to comply with § 60.752(b)(2)(ii)(A) for an active gas collection system shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in § 60.755(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in § 60.755(a)(5); and

(3) Monitor temperature of the landfill gas on a monthly basis as provided in § 60.755(a)(5).

(b) Each owner or operator seeking to comply with § 60.752(b)(2)(iii) using an enclosed combustor shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment.

(1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ±1 percent of the temperature being measured expressed in degrees Celsius or ±0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts.

(2) A device that records flow to or bypass of the control device. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame.

(2) A device that records flow to or bypass of the flare. The owner or operator shall either:

(i) Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or

(ii) Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.

(d) Each owner or operator seeking to demonstrate compliance with §60.752(b)(2)(iii) using a device other than an open flare or an enclosed combustor shall provide information satisfactory to the Administrator as provided in §60.752(b)(2)(i)(B) describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator shall review the information and either approve it, or request that additional information be submitted. The Administrator may specify additional appropriate monitoring procedures.

(e) Each owner or operator seeking to install a collection system that does not meet the specifications in §60.759 or seeking to monitor alternative parameters to those required by §60.753 through §60.756 shall provide information satisfactory to the Administrator as provided in §60.752(b)(2)(i) (B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator may specify additional appropriate monitoring procedures.

(f) Each owner or operator seeking to demonstrate compliance with §60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in §60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§60.757 Reporting requirements.

Except as provided in §60.752(b)(2)(i)(B),

(a) Each owner or operator subject to the requirements of this subpart shall submit an initial design capacity report to the Administrator.

(1) The initial design capacity report shall fulfill the requirements of the notification of the date construction is commenced as required by §60.7(a)(1) and shall be submitted no later than:

(i) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996 or

(ii) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(2) The initial design capacity report shall contain the following information:

(i) A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit issued by the State, local, or tribal agency responsible for regulating the landfill.

(ii) The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the State, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with the relevant parameters as part of the report. The State, Tribal, local agency or Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.

(3) An amended design capacity report shall be submitted to the Administrator providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in § 60.758(f).

(b) Each owner or operator subject to the requirements of this subpart shall submit an NMOC emission rate report to the Administrator initially and annually thereafter, except as provided for in paragraphs (b)(1)(ii) or (b)(3) of this section. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.

(1) The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in § 60.754(a) or (b), as applicable.

(i) The initial NMOC emission rate report may be combined with the initial design capacity report required in paragraph (a) of this section and shall be submitted no later than indicated in paragraphs (b)(1)(i)(A) and (B) of this section. Subsequent NMOC emission rate reports shall be submitted annually thereafter, except as provided for in paragraphs (b)(1)(ii) and (b)(3) of this section.

(A) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or

(B) Ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification, or reconstruction on or after March 12, 1996.

(ii) If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.

(2) The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.

(3) Each owner or operator subject to the requirements of this subpart is exempted from the requirements of paragraphs (b)(1) and (2) of this section, after the installation of a collection and control system in compliance with § 60.752(b)(2), during such time as the collection and control system is in operation and in compliance with §§ 60.753 and 60.755.

(c) Each owner or operator subject to the provisions of § 60.752(b)(2)(i) shall submit a collection and control system design plan to the Administrator within 1 year of the first report required under paragraph (b) of this section in which the emission rate equals or exceeds 50 megagrams per year, except as follows:

(1) If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in §60.754(a)(3) and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year.

(2) If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in §60.754(a)(4), and the resulting NMOC emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of §60.754(a)(4) and the resulting site-specific methane generation rate constant (k) shall be submitted to the Administrator within 1 year of the first calculated emission rate exceeding 50 megagrams per year.

(d) Each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification as described under §60.7(a)(4).

(e) Each owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.

(1) The equipment removal report shall contain all of the following items:

(i) A copy of the closure report submitted in accordance with paragraph (d) of this section;

(ii) A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and

(iii) Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met.

(f) Each owner or operator of a landfill seeking to comply with §60.752(b)(2) using an active collection system designed in accordance with §60.752(b)(2)(ii) shall submit to the Administrator annual reports of the recorded information in (f)(1) through (f)(6) of this paragraph. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under §60.8. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c).

(1) Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d).

(2) Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.

(3) Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.

(4) All periods when the collection system was not operating in excess of 5 days.

(5) The location of each exceedance of the 500 parts per million methane concentration as provided in § 60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.

(6) The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of § 60.755.

(g) Each owner or operator seeking to comply with § 60.752(b)(2)(iii) shall include the following information with the initial performance test report required under § 60.8:

(1) A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;

(2) The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;

(3) The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material;

(4) The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area; and

(5) The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and

(6) The provisions for the control of off-site migration.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.758 Recordkeeping requirements.

(a) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of § 60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered § 60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(b) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.

(1) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(ii):

(i) The maximum expected gas generation flow rate as calculated in § 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

(ii) The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in § 60.759(a)(1).

(2) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii) through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity equal to or greater than 44 megawatts:

(i) The average combustion temperature measured at least every 15 minutes and averaged over the same time period of the performance test.

(ii) The percent reduction of NMOC determined as specified in § 60.752(b)(2)(iii)(B) achieved by the control device.

(3) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii)(B)(*1*) through use of a boiler or process heater of any size: a

description of the location at which the collected gas vent stream is introduced into the boiler or process heater over the same time period of the performance testing.

(4) Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with § 60.752(b)(2)(iii)(A) through use of an open flare, the flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in § 60.18; continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.

(c) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in § 60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(1) The following constitute exceedances that shall be recorded and reported under § 60.757(f):

(i) For enclosed combustors except for boilers and process heaters with design heat input capacity of 44 megawatts (150 million British thermal unit per hour) or greater, all 3-hour periods of operation during which the average combustion temperature was more than 28 oC below the average combustion temperature during the most recent performance test at which compliance with § 60.752(b)(2)(iii) was determined.

(ii) For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required under paragraph (b)(3) of this section.

(2) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible continuous records of the indication of flow to the control device or the indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, specified under § 60.756.

(3) Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with § 60.752(b)(2)(iii) shall keep an up-to-date, readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under § 60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(d) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.

(1) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under § 60.755(b).

(2) Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in § 60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in § 60.759(a)(3)(ii).

(e) Except as provided in § 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in § 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(f) Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of ''design capacity'', shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.759 Specifications for active collection systems.

(a) Each owner or operator seeking to comply with § 60.752(b)(2)(i) shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in § 60.752(b)(2)(i)(C) and (D):

(1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandibility, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section shall control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under § 60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.

(ii) Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the following equation:

$$Q_i = 2\ k\ L_o\ M_i\ (e^{-kt}\ i)\ (C_{NMOC})\ (3.6 \times 10^{-9})$$

where,

Q_i = NMOC emission rate from the i^{th} section, megagrams per year

k = methane generation rate constant, $year^{-1}$

L_o = methane generation potential, cubic meters per megagram solid waste

M_i = mass of the degradable solid waste in the i^{th} section, megagram

t_i = age of the solid waste in the i^{th} section, years

C_{NMOC} = concentration of nonmethane organic compounds, parts per million by volume

3.6×10^{-9} = conversion factor

(iii) The values for k and C_{NMOC} determined in field testing shall be used if field testing has been performed in determining the NMOC emission rate or the radii of influence (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k, L_O and C_{NMOC} provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

(1) The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.

(2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(3) Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of this section shall be used.

(2) For new collection systems, the maximum flow rate shall be in accordance with §60.755(a)(1).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32753, June 16, 1998; 64 FR 9262, Feb. 24, 1999; 65 FR 18909, Apr. 10, 2000]

Subpart AAAA—Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001

SOURCE: 65 FR 76355, Dec. 6, 2000, unless otherwise noted.

INTRODUCTION

§60.1000 What does this subpart do?

This subpart establishes new source performance standards for new small municipal waste combustion units.

§60.1005 When does this subpart become effective?

This subpart takes effect June 6, 2001. Some of the requirements in this subpart apply to municipal waste combustion unit planning and must be completed before construction is commenced on the municipal waste combustion unit. In particular, the preconstruction requirements in

§§ 60.1050 through 60.1150 must be completed prior to commencing construction. Other requirements (such as the emission limits) apply when the municipal waste combustion unit begins operation.

APPLICABILITY

§ 60.1010 Does this subpart apply to my municipal waste combustion unit?

Yes, if your municipal waste combustion unit meets two criteria:

(a) Your municipal waste combustion unit is a new municipal waste combustion unit.

(b) Your municipal waste combustion unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel.

§ 60.1015 What is a new municipal waste combustion unit?

(a) A new municipal waste combustion unit is a municipal waste combustion unit that meets either of two criteria:

(1) Commenced construction after August 30, 1999.

(2) Commenced reconstruction or modification after June 6, 2001.

(b) This subpart does not apply to your municipal waste combustion unit if you make physical or operational changes to an existing municipal waste combustion unit primarily to comply with the emission guidelines in subpart BBBB of this part. Such changes do not qualify as reconstruction or modification under this subpart.

§ 60.1020 Does this subpart allow any exemptions?

(a) *Small municipal waste combustion units that combust less than 11 tons per day.* You are exempt from this subpart if you meet four requirements:

(1) Your municipal waste combustion unit is subject to a federally enforceable permit limiting the amount of municipal solid waste combusted to less than 11 tons per day.

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with a copy of the federally enforceable permit.

(4) You keep daily records of the amount of municipal solid waste combusted.

(b) *Small power production facilities.* You are exempt from this subpart if you meet four requirements:

(1) Your unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) Your unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity.

(3) You notify the Administrator that the unit qualifies for the exemption.

(4) You provide the Administrator with documentation that the unit qualifies for the exemption.

(c) *Cogeneration facilities.* You are exempt from this subpart if you meet four requirements:

(1) Your unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) Your unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You notify the Administrator that the unit qualifies for the exemption.

(4) You provide the Administrator with documentation that the unit qualifies for the exemption.

(d) *Municipal waste combustion units that combust only tires.* You are exempt from this subpart if you meet three requirements:

(1) Your municipal waste combustion unit combusts a single-item waste stream of tires and no other municipal waste (the unit can co-fire coal, fuel oil, natural gas, or other nonmunicipal solid waste).

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with documentation that the unit qualifies for the exemption.

(e) *Hazardous waste combustion units.* You are exempt from this subpart if you get a permit for your unit under section 3005 of the Solid Waste Disposal Act.

(f) *Materials recovery units.* You are exempt from this subpart if your unit combusts waste mainly to recover metals. Primary and secondary smelters qualify for the exemption.

(g) *Co-fired combustors.* You are exempt from this subpart if you meet four requirements:

(1) Your unit has a federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight.

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with a copy of the federally enforceable permit.

(4) You record the weights, each quarter, of municipal solid waste and of all other fuels combusted.

(h) *Plastics/rubber recycling units.* You are exempt from this subpart if you meet four requirements:

(1) Your pyrolysis/combustion unit is an integrated part of a plastics/rubber recycling unit as defined under ''Definitions'' (§60.1465).

(2) You record the weights, each quarter, of plastics, rubber, and rubber tires processed.

(3) You record the weights, each quarter, of feed stocks produced and marketed from chemical plants and petroleum refineries.

(4) You keep the name and address of the purchaser of those feed stocks.

(i) *Units that combust fuels made from products of plastics/rubber recycling plants.* You are exempt from this subpart if you meet two requirements:

(1) Your unit combusts gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units.

(2) Your unit does not combust any other municipal solid waste.

(j) *Cement kilns.* You are exempt from this subpart if your cement kiln combusts municipal solid waste.

(k) *Air curtain incinerators.* If your air curtain incinerator (see §60.1465 for definition) combusts 100 percent yard waste, you must meet only the requirements under ''Air Curtain Incinerators That Burn 100 Percent Yard Waste'' (§§60.1435 through 60.1455).

§60.1025 Do subpart E new source performance standards also apply to my municipal waste combustion unit?

If this subpart AAAA applies to your municipal waste combustion unit, then subpart E of this part does not apply to your municipal waste combustion unit.

§60.1030 Can the Administrator delegate authority to enforce these Federal new source performance standards to a State agency?

Yes, the Administrator can delegate all authorities in all sections of this subpart to the State for direct State enforcement.

§60.1035 How are these new source performance standards structured?

These new source performance standards contain five major components:

(a) Preconstruction requirements.

(1) Materials separation plan.

(2) Siting analysis.

(b) Good combustion practices.

(1) Operator training.

(2) Operator certification.

(3) Operating requirements.

(c) Emission limits.

(d) Monitoring and stack testing.

(e) Recordkeeping and reporting.

§60.1040 Do all five components of these new source performance standards apply at the same time?

No, you must meet the preconstruction requirements before you commence construction of the municipal waste combustion unit. After the municipal waste combustion unit begins operation, you must meet all of the good combustion practices, emission limits, monitoring, stack testing, and most recordkeeping and reporting requirements.

§60.1045 Are there different subcategories of small municipal waste combustion units within this subpart?

(a) Yes, this subpart subcategorizes small municipal waste combustion units into two groups based on the aggregate capacity of the municipal waste combustion plant as follows:

(1) *Class I Units.* Class I units are small municipal waste combustion units that are located at municipal

waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. (See the definition of ‘‘municipal waste combustion plant capacity’’ in § 60.1465 for specification of which units at a plant are included in the aggregate capacity calculation.)

(2) *Class II Units.* Class II units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. (See the definition of ‘‘municipal waste combustion plant capacity’’ in § 60.1465 for specification of which units at a plant are included in the aggregate capacity calculation.)

(b) The requirements for Class I and Class II units are identical except for two items:

(1) Class I units have a nitrogen oxides emission limit. Class II units do not have a nitrogen oxides emission limit (see Table 1 of this subpart). Additionally, Class I units have continuous emission monitoring, recordkeeping, and reporting requirements for nitrogen oxides.

(2) Class II units are eligible for the reduced testing option provided in § 60.1305.

PRECONSTRUCTION REQUIREMENTS: MATERIALS SEPARATION PLAN

§ 60.1050 Who must submit a materials separation plan?

(a) You must prepare a materials separation plan for your municipal waste combustion unit if you commence construction of a new small municipal waste combustion unit after December 6, 2000.

(b) If you commence construction of your municipal waste combustion unit after August 30, 1999 but before December 6, 2000, you are not required to prepare the materials separation plan specified in this subpart.

(c) You must prepare a materials separation plan if you are required to submit an initial application for a construction permit, under 40 CFR part 51, subpart I, or part 52, as applicable, for the reconstruction or modification of your municipal waste combustion unit.

§ 60.1055 What is a materials separation plan?

The plan identifies a goal and an approach for separating certain components of municipal solid waste for a given service area prior to waste combustion and making them available for recycling.

§ 60.1060 What steps must I complete for my materials separation plan?

(a) For your materials separation plan, you must complete nine steps:

(1) Prepare a draft materials separation plan.

(2) Make your draft plan available to the public.

(3) Hold a public meeting on your draft plan.

(4) Prepare responses to public comments received during the public comment period on your draft plan.

(5) Prepare a revised materials separation plan.

(6) Discuss the revised plan at the public meeting for review of the siting analysis.

(7) Prepare responses to public comments received on your revised plan.

(8) Prepare a final materials separation plan.

(9) Submit the final materials separation plan.

(b) You may use analyses conducted under the requirements of 40 CFR part 51, subpart I, or part 52, to comply with some of the materials separation requirements of this subpart.

§ 60.1065 What must I include in my draft materials separation plan?

(a) You must prepare and submit a draft materials separation plan for your municipal waste combustion unit and its service area.

(b) Your draft materials separation plan must identify a goal and an approach for separating certain components of municipal solid waste for a given service area prior to waste combustion and making them available for recycling. A materials separation plan may include such elements as dropoff facilities, buy-back or deposit-return incentives, programs for curbside pickup, and centralized systems for mechanical separation.

(c) Your materials separation plan may include different goals or approaches for different subareas in the service area.

(d) Your materials separation plan may exclude materials separation activities for certain subareas or, if warranted, the entire service area.

§ 60.1070 How do I make my draft materials separation plan available to the public?

(a) Distribute your draft materials separation plan to the main public libraries in the area where you will construct the municipal waste combustion unit.

(b) Publish a notice of a public meeting in the main newspapers that serve two areas:

(1) The area where you will construct the municipal waste combustion unit.

(2) The areas where the waste that your municipal waste combustion unit combusts will be collected.

(c) Include six items in your notice of the public meeting:

(1) The date of the public meeting.

(2) The time of the public meeting.

(3) The location of the public meeting.

(4) The location of the public libraries where the public can find your materials separation plan. Include the normal business hours of each library.

(5) An agenda of the topics that will be discussed at the public meeting.

(6) The beginning and ending dates of the public comment period on your draft materials separation plan.

§ 60.1075 When must I accept comments on the materials separation plan?

(a) You must accept verbal comments at the public meeting.

(b) You must accept written comments anytime during the period that begins on the date the document is distributed to the main public libraries and ends 30 days after the date of the public meeting.

§ 60.1080 Where and when must I hold a public meeting on my draft materials separation plan?

(a) You must hold a public meeting and accept comments on your draft materials separation plan.

(b) You must hold the public meeting in the county where you will construct the municipal waste combustion unit.

(c) You must schedule the public meeting to occur at least 30 days after you make your draft materials separation plan available to the public.

(d) You may combine the public meeting with any other public meeting required as part of any other Federal, State, or local permit review. However, you may not combine it with the public meeting required for the siting analysis under ''Preconstruction Requirements: Siting Analysis'' (§ 60.1140).

(e) You are encouraged to address eight topics at the public meeting for your draft materials separation plan:

(1) Expected size of the service area for your municipal waste combustion unit.

(2) Amount of waste you will collect in the service area.

(3) Types and estimated amounts of materials proposed for separation.

(4) Methods proposed for materials separation.

(5) Amount of residual waste for disposal.

(6) Alternate disposal methods for handling the residual waste.

(7) Where your responses to public comments on the draft materials separation plan will be available for inspection.

(8) Where your revised materials separation plan will be available for inspection.

(f) You must prepare a transcript of the public meeting on your draft materials separation plan.

§ 60.1085 What must I do with any public comments I receive during the public comment period on my draft materials separation plan?

You must do three steps:

(a) Prepare written responses to any public comments you received during the public comment period. Summarize the responses to public comments in a document that is separate from your revised materials separation plan.

(b) Make the comment response document available to the public in the service area where you will construct your municipal waste combustion unit. You must distribute the document at least to the main public libraries used to announce the public meeting.

(c) Prepare a revised materials separation plan for the municipal waste combustion unit that includes, as appropriate, changes made in response to any public comments you received during the public comment period.

§ 60.1090 What must I do with my revised materials separation plan?

You must do two tasks:

(a) As specified under ''Reporting'' (§ 60.1375), submit five items to the Administrator by the date you submit the application for a construction permit under 40 CFR part 51, subpart I, or part 52. (If you are not required to submit an application for a construction permit under 40 CFR part 51, subpart I, or part 52, submit five items to the Administrator by the date of your notice of construction under § 60.1380):

(1) Your draft materials separation plan.

(2) Your revised materials separation plan.

(3) Your notice of the public meeting for your draft materials separation plan.

(4) A transcript of the public meeting on your draft materials separation plan.

(5) The document that summarizes your responses to the public comments you received during the public comment period on your draft materials separation plan.

(b) Make your revised materials separation plan available to the public as part of the siting analysis procedures under ''Preconstruction Requirements: Siting Analysis'' (§ 60.1130).

§ 60.1095 What must I include in the public meeting on my revised materials separation plan?

As part of the public meeting for review of the siting analysis, as specified under ''Preconstruction Requirements: Siting Analysis'' (§ 60.1140), you must discuss two areas:

(a) Differences between your revised materials separation plan and your draft materials separation plan discussed at the first public meeting (§ 60.1080).

(b) Questions about your revised materials separation plan.

§ 60.1100 What must I do with any public comments I receive on my revised materials separation plan?

(a) Prepare written responses to any public comments and include them in the document that summarizes your responses to public comments on the siting analysis.

(b) Prepare a final materials separation plan that includes, as appropriate, changes made in response to any public comments you received on your revised materials separation plan.

§ 60.1105 How do I submit my final materials separation plan?

As specified under ''Reporting'' (§ 60.1380), submit your final materials separation plan to the Administrator as part of the notice of construction for the municipal waste combustion unit.

PRECONSTRUCTION REQUIREMENTS: SITING ANALYSIS

§ 60.1110 Who must submit a siting analysis?

(a) You must prepare a siting analysis if you commence construction of a small municipal waste combustion unit after December 6, 2000.

(b) If you commence construction on your municipal waste combustion unit after August 30, 1999, but before December 6, 2000, you are not required to prepare the siting analysis specified in this subpart.

(c) You must prepare a siting analysis if you are required to submit an initial application for a construction permit, under 40 CFR part 51, subpart I, or part 52, as applicable, for the reconstruction or modification of your municipal waste combustion unit.

§ 60.1115 What is a siting analysis?

The siting analysis addresses how your municipal waste combustion unit affects ambient air quality, visibility, soils, vegetation, and other relevant factors. The analysis can be used to determine whether the benefits of your proposed facility significantly outweigh the environmental and social costs resulting from its location and construction. The analysis must also consider other major industrial facilities near the proposed site.

§ 60.1120 What steps must I complete for my siting analysis?

(a) For your siting analysis, you must complete five steps:

(1) Prepare an analysis.

(2) Make your analysis available to the public.

(3) Hold a public meeting on your analysis.

(4) Prepare responses to public comments received on your analysis.

(5) Submit your analysis.

(b) You may use analyses conducted under the requirements of 40 CFR part 51, subpart I, or part 52, to comply with some of the siting analysis requirements of this subpart.

§ 60.1125 What must I include in my siting analysis?

(a) Include an analysis of how your municipal waste combustion unit affects four areas:

(1) Ambient air quality.

(2) Visibility.

(3) Soils.

(4) Vegetation.

(b) Include an analysis of alternatives for controlling air pollution that minimize potential risks to the public health and the environment.

§ 60.1130 How do I make my siting analysis available to the public?

(a) Distribute your siting analysis and revised materials separation plan to the main public libraries in the area where you will construct your municipal waste combustion unit.

(b) Publish a notice of a public meeting in the main newspapers that serve two areas:

(1) The area where you will construct your municipal waste combustion unit.

(2) The areas where the waste that your municipal waste combustion unit combusts will be collected.

(c) Include six items in your notice of the public meeting:

(1) The date of the public meeting.

(2) The time of the public meeting.

(3) The location of the public meeting.

(4) The location of the public libraries where the public can find your siting analysis and revised materials separation plan. Include the normal business hours of each library.

(5) An agenda of the topics that will be discussed at the public meeting.

(6) The beginning and ending dates of the public comment period on your siting analysis and revised materials separation plan.

§ 60.1135 When must I accept comments on the siting analysis and revised materials separation plan?

(a) You must accept verbal comments at the public meeting.

(b) You must accept written comments anytime during the period that begins on the date the document is distributed to the main public libraries and ends 30 days after the date of the public meeting.

§ 60.1140 Where and when must I hold a public meeting on the siting analysis?

(a) You must hold a public meeting to discuss and accept comments on your siting analysis and your revised materials separation plan.

(b) You must hold the public meeting in the county where you will construct your municipal waste combustion unit.

(c) You must schedule the public meeting to occur at least 30 days after you make your siting analysis and revised materials separation plan available to the public.

(d) You must prepare a transcript of the public meeting on your siting analysis.

§ 60.1145 What must I do with any public comments I receive during the public comment period on my siting analysis?

You must do three things:

(a) Prepare written responses to any public comments on your siting analysis and the revised materials separation plan you received during the public comment period. Summarize the responses to public comments in a document that is separate from your materials separation plan and siting analysis.

(b) Make the comment response document available to the public in the service area where you will construct your municipal waste combustion unit. You must distribute the document at least to the main public libraries used to announce the public meeting for the siting analysis.

(c) Prepare a revised siting analysis for the municipal waste combustion unit that includes, as appropriate, changes made in response to any public comments you received during the public comment period.

§ 60.1150 How do I submit my siting analysis?

As specified under ''Reporting'' (§ 60.1380), submit four items as part of the notice of construction:

(a) Your siting analysis.

(b) Your notice of the public meeting on your siting analysis.

(c) A transcript of the public meeting on your siting analysis.

(d) The document that summarizes your responses to the public comments you received during the public comment period.

GOOD COMBUSTION PRACTICES: OPERATOR TRAINING

§ 60.1155 What types of training must I do?

There are two types of required training:

(a) Training of operators of municipal waste combustion units using the U.S. Environmental Protection Agency (EPA) or a State-approved training course.

(b) Training of plant personnel using a plant-specific training course.

§ 60.1160 Who must complete the operator training course? By when?

(a) Three types of employees must complete the EPA or State-approved operator training course:

(1) Chief facility operators.

(2) Shift supervisors.

(3) Control room operators.

(b) Those employees must complete the operator training course by the later of three dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

§ 60.1165 Who must complete the plant-specific training course?

All employees with responsibilities that affect how a municipal waste combustion unit operates must complete the plant-specific training course. Include at least six types of employees:

(a) Chief facility operators.

(b) Shift supervisors.

(c) Control room operators.

(d) Ash handlers.

(e) Maintenance personnel.

(f) Crane or load handlers.

§ 60.1170 What plant-specific training must I provide?

For plant-specific training, you must do four things:

(a) For training at a particular plant, develop a specific operating manual for that plant by the later of two dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(b) Establish a program to review the plant-specific operating manual with people whose responsibilities affect the operation of your municipal waste combustion unit. Complete the initial review by the later of three dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

(c) Update your manual annually.

(d) Review your manual with staff annually.

§ 60.1175 What information must I include in the plant-specific operating manual?

You must include 11 items in the operating manual for your plant:

(a) A summary of all applicable requirements in this subpart.

(b) A description of the basic combustion principles that apply to municipal waste combustion units.

(c) Procedures for receiving, handling, and feeding municipal solid waste.

(d) Procedures to be followed during periods of startup, shutdown, and malfunction of the municipal waste combustion unit.

(e) Procedures for maintaining a proper level of combustion air supply.

(f) Procedures for operating the municipal waste combustion unit in compliance with the requirements contained in this subpart.

(g) Procedures for responding to periodic upset or off-specification conditions.

(h) Procedures for minimizing carryover of particulate matter.

(i) Procedures for handling ash.

(j) Procedures for monitoring emissions from the municipal waste combustion unit.

(k) Procedures for recordkeeping and reporting.

§60.1180 Where must I keep the plant-specific operating manual?

You must keep your operating manual in an easily accessible location at your plant. It must be available for review or inspection by all employees who must review it and by the Administrator.

GOOD COMBUSTION PRACTICES: OPERATOR CERTIFICATION

§60.1185 What types of operator certification must the chief facility operator and shift supervisor obtain and by when must they obtain it?

(a) Each chief facility operator and shift supervisor must obtain and keep a current provisional operator certification from the American Society of Mechanical Engineers (QRO–1–1994) (incorporated by reference in §60.17(h)(1)) or a current provisional operator certification from your State certification program.

(b) Each chief facility operator and shift supervisor must obtain a provisional certification by the later of three dates:

(1) Six months after the municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

(c) Each chief facility operator and shift supervisor must take one of three actions:

(1) Obtain a full certification from the American Society of Mechanical Engineers or a State certification program in your State.

(2) Schedule a full certification exam with the American Society of Mechanical Engineers (QRO–1–1994) (incorporated by reference in §60.17(h)(1)).

(3) Schedule a full certification exam with your State certification program.

(d) The chief facility operator and shift supervisor must obtain the full certification or be scheduled to take the certification exam by the later of three dates:

(1) Six months after the municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

§60.1190 After the required date for operator certification, who may operate the municipal waste combustion unit?

After the required date for full or provisional certifications, you must not operate your municipal waste combustion unit unless one of four employees is on duty:

(a) A fully certified chief facility operator.

(b) A provisionally certified chief facility operator who is scheduled to take the full certification exam.

(c) A fully certified shift supervisor.

(d) A provisionally certified shift supervisor who is scheduled to take the full certification exam.

§60.1195 What if all the certified operators must be temporarily offsite?

If the certified chief facility operator and certified shift supervisor both are unavailable, a provisionally certified control room operator at the municipal waste combustion unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, you must meet one of three criteria:

(a) When the certified chief facility operator and certified shift supervisor are both offsite for 12 hours or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator.

(b) When the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must record the period when the certified chief facility operator and certified shift supervisor are offsite and include that information in the annual report as specified under § 60.1410(l).

(c) When the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must take two actions:

(1) Notify the Administrator in writing. In the notice, state what caused the absence and what you are doing to ensure that a certified chief facility operator or certified shift supervisor is onsite.

(2) Submit a status report and corrective action summary to the Administrator every 4 weeks following the initial notification. If the Administrator notifies you that your status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Administrator withdraws the disapproval, municipal waste combustion unit operation may continue.

GOOD COMBUSTION PRACTICES: OPERATING REQUIREMENTS

§ 60.1200 What are the operating practice requirements for my municipal waste combustion unit?

(a) You must not operate your municipal waste combustion unit at loads greater than 110 percent of the maximum demonstrated load of the municipal waste combustion unit (4-hour block average), as specified under ''Definitions'' (§ 60.1465).

(b) You must not operate your municipal waste combustion unit so that the temperature at the inlet of the particulate matter control device exceeds 17°C above the maximum demonstrated temperature of the particulate matter control device (4-hour block average), as specified under ''Definitions'' (§ 60.1465).

(c) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must maintain an 8-hour block average carbon feed rate at or above the highest average level established during the most recent dioxins/furans or mercury test.

(d) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must evaluate total carbon usage for each calendar quarter. The total amount of carbon purchased and delivered to your municipal waste combustion plant must be at or above the required quarterly usage of carbon. At your option, you may choose to evaluate required quarterly carbon usage on a municipal waste combustion unit basis for each individual municipal waste combustion unit at your plant. Calculate the required quarterly usage of carbon using equation 4 or 5 in § 60.1460(f).

(e) Your municipal waste combustion unit is exempt from limits on load level, temperature at the inlet of the particulate matter control device, and carbon feed rate during any of five situations:

(1) During your annual tests for dioxins/furans.

(2) During your annual mercury tests (for carbon feed rate requirements only).

(3) During the 2 weeks preceding your annual tests for dioxins/furans.

(4) During the 2 weeks preceding your annual mercury tests (for carbon feed rate requirements only).

(5) Whenever the Administrator or delegated State authority permits you to do any of five activities:

(i) Evaluate system performance.

(ii) Test new technology or control technologies.

(iii) Perform diagnostic testing.

(iv) Perform other activities to improve the performance of your municipal waste combustion unit.

(v) Perform other activities to advance the state of the art for emission controls for your municipal waste combustion unit.

§60.1205 What happens to the operating requirements during periods of startup, shutdown, and malfunction?

(a) The operating requirements of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

EMISSION LIMITS

§60.1210 What pollutants are regulated by this subpart?

Eleven pollutants, in four groupings, are regulated:

(a) *Organics*. Dioxins/furans.

(b) *Metals*.

(1) Cadmium.

(2) Lead.

(3) Mercury.

(4) Opacity.

(5) Particulate matter.

(c) *Acid gases*.

(1) Hydrogen chloride.

(2) Nitrogen oxides.

(3) Sulfur dioxide.

(d) *Other*.

(1) Carbon monoxide.

(2) Fugitive ash.

§60.1215 What emission limits must I meet? By when?

You must meet the emission limits specified in Tables 1 and 2 of this subpart. You must meet the limits 60 days after your municipal waste combustion unit reaches the maximum load level but no later than 180 days after its initial startup.

§60.1220 What happens to the emission limits during periods of startup, shutdown, and malfunction?

(a) The emission limits of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

(c) A maximum of 3 hours of test data can be dismissed from compliance calculations during periods of startup, shutdown, or malfunction.

(d) During startup, shutdown, or malfunction periods longer than 3 hours, emissions data cannot be discarded from compliance calculations and all provisions under §60.11(d) apply.

CONTINUOUS EMISSION MONITORING

§60.1225 What types of continuous emission monitoring must I perform?

To continuously monitor emissions, you must perform four tasks:

(a) Install continuous emission monitoring systems for certain gaseous pollutants.

(b) Make sure your continuous emission monitoring systems are operating correctly.

(c) Make sure you obtain the minimum amount of monitoring data.

(d) Install a continuous opacity monitoring system.

§60.1230 What continuous emission monitoring systems must I install for gaseous pollutants?

(a) You must install, calibrate, maintain, and operate continuous emission monitoring systems for oxygen (or carbon dioxide), sulfur dioxide, and carbon monoxide. If you operate a Class I municipal waste combustion unit, you must also install, calibrate, maintain, and operate a continuous emission monitoring system for nitrogen oxides. Install the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and oxygen (or carbon dioxide) at the outlet of the air pollution control device.

(b) You must install, evaluate, and operate each continuous emission monitoring system according to the ‘‘Monitoring Requirements’’ in §60.13.

(c) You must monitor the oxygen (or carbon dioxide) concentration at each location where you monitor sulfur dioxide and carbon monoxide. Additionally, if you operate a Class I municipal waste combustion unit, you must also monitor the oxygen (or carbon dioxide) concentration at the location where you monitor nitrogen oxides.

(d) You may choose to monitor carbon dioxide instead of oxygen as a diluent gas. If you choose to monitor carbon dioxide, then an oxygen monitor is not required, and you must follow the requirements in §60.1255.

(e) If you choose to demonstrate compliance by monitoring the percent reduction of sulfur dioxide, you must also install continuous emission monitoring systems for sulfur dioxide and oxygen (or carbon dioxide) at the inlet of the air pollution control device.

(f) If you prefer to use an alternative sulfur dioxide monitoring method, such as parametric monitoring, or cannot monitor emissions at the inlet of the air pollution control device to determine percent reduction, you can apply to the Administrator for approval to use an alternative monitoring method under § 60.13(i).

§ 60.1235 How are the data from the continuous emission monitoring systems used?

You must use data from the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and carbon monoxide to demonstrate continuous compliance with the emission limits specified in Tables 1 and 2 of this subpart. To demonstrate compliance for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, see § 60.1290.

§ 60.1240 How do I make sure my continuous emission monitoring systems are operating correctly?

(a) Conduct initial, daily, quarterly, and annual evaluations of your continuous emission monitoring systems that measure oxygen (or carbon dioxide), sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide.

(b) Complete your initial evaluation of the continuous emission monitoring systems within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.

(c) For initial and annual evaluations, collect data concurrently (or within 30 to 60 minutes) using your oxygen (or carbon dioxide) continuous emission monitoring system, your sulfur dioxide, nitrogen oxides, or carbon monoxide continuous emission monitoring systems, as appropriate, and the appropriate test methods specified in Table 3 of this subpart. Collect the data during each initial and annual evaluation of your continuous emission monitoring systems following the applicable performance specifications in appendix B of this part. Table 4 of this subpart shows the performance specifications that apply to each continuous emission monitoring system.

(d) Follow the quality assurance procedures in Procedure 1 of appendix F of this part for each continuous emission monitoring system. The procedures include daily calibration drift and quarterly accuracy determinations.

§ 60.1245 Am I exempt from any appendix B or appendix F requirements to evaluate continuous emission monitoring systems?

Yes, the accuracy tests for your sulfur dioxide continuous emission monitoring system require you to also evaluate your oxygen (or carbon dioxide) continuous emission monitoring system. Therefore, your oxygen (or carbon dioxide) continuous emission monitoring system is exempt from two requirements:

(a) Section 2.3 of Performance Specification 3 in appendix B of this part (relative accuracy requirement).

(b) Section 5.1.1 of appendix F of this part (relative accuracy test audit).

§ 60.1250 What is my schedule for evaluating continuous emission monitoring systems?

(a) Conduct annual evaluations of your continuous emission monitoring systems no more than 13 months after the previous evaluation was conducted.

(b) Evaluate your continuous emission monitoring systems daily and quarterly as specified in appendix F of this part.

§ 60.1255 What must I do if I choose to monitor carbon dioxide instead of oxygen as a diluent gas?

You must establish the relationship between oxygen and carbon dioxide during the initial evaluation of your continuous emission monitoring systems. You may reestablish the relationship during annual evaluations. To establish the relationship use three procedures:

(a) Use EPA Reference Method 3A or 3B in appendix A of this part to determine oxygen concentration at the location of your carbon dioxide monitor.

(b) Conduct at least three test runs for oxygen. Make sure each test run represents a 1-hour average and that sampling continues for at least 30 minutes in each hour.

(c) Use the fuel-factor equation in EPA Reference Method 3B in appendix A of this part to determine the relationship between oxygen and carbon dioxide.

§60.1260 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems and is the data collection requirement enforceable?

(a) Where continuous emission monitoring systems are required, obtain 1-hour arithmetic averages. Make sure the averages for sulfur dioxide, nitrogen oxides, and carbon monoxide are in parts per million by dry volume at 7 percent oxygen (or the equivalent carbon dioxide level). Use the 1-hour averages of oxygen (or carbon dioxide) data from your continuous emission monitoring system to determine the actual oxygen (or carbon dioxide) level and to calculate emissions at 7 percent oxygen (or the equivalent carbon dioxide level).

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average. Section 60.13(e)(2) requires your continuous emission monitoring systems to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-minute period.

(c) Obtain valid 1-hour averages for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement regardless of the emission level monitored, and you must notify the Administrator according to §60.1410(e).

(e) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you must still use all valid data from the continuous emission monitoring systems in calculating emission concentrations and percent reductions in accordance with §60.1265.

§60.1265 How do I convert my 1-hour arithmetic averages into the appropriate averaging times and units?

(a) Use the equation in §60.1460(a) to calculate emissions at 7 percent oxygen.

(b) Use EPA Reference Method 19 in appendix A of this part, section 4.3, to calculate the daily geometric average concentrations of sulfur dioxide emissions. If you are monitoring the percent reduction of sulfur dioxide, use EPA Reference Method 19 in appendix A of this part, section 5.4, to determine the daily geometric average percent reduction of potential sulfur dioxide emissions.

(c) If you operate a Class I municipal waste combustion unit, use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the daily arithmetic average for concentrations of nitrogen oxides.

(d) Use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the 4-hour or 24-hour daily block averages (as applicable) for concentrations of carbon monoxide.

§60.1270 What is required for my continuous opacity monitoring system and how are the data used?

(a) Install, calibrate, maintain, and operate a continuous opacity monitoring system.

(b) Install, evaluate, and operate each continuous opacity monitoring system according to §60.13.

(c) Complete an initial evaluation of your continuous opacity monitoring system according to Performance Specification 1 in appendix B of this part. Complete the evaluation within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no more than 180 days after its initial startup.

(d) Complete each annual evaluation of your continuous opacity monitoring system no more than 13 months after the previous evaluation.

(e) Use tests conducted according to EPA Reference Method 9 in appendix A of this part, as specified in §60.1300, to determine compliance with the opacity limit in Table 1 of this subpart. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the opacity limit.

§ 60.1275 What additional requirements must I meet for the operation of my continuous emission monitoring systems and continuous opacity monitoring system?

Use the required span values and applicable performance specifications in Table 4 of this subpart.

§ 60.1280 What must I do if any of my continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements?

Refer to Table 4 of this subpart. It shows alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep you from collecting the minimum amount of data.

STACK TESTING

§ 60.1285 What types of stack tests must I conduct?

Conduct initial and annual stack tests to measure the emission levels of dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

§ 60.1290 How are the stack test data used?

You must use results of stack tests for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash to demonstrate compliance with the emission limits in Table 1 of this subpart. To demonstrate compliance for carbon monoxide, nitrogen oxides, and sulfur dioxide, see § 60.1235.

§ 60.1295 What schedule must I follow for the stack testing?

(a) Conduct initial stack tests for the pollutants listed in § 60.1285 within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.

(b) Conduct annual stack tests for the same pollutants after the initial stack test. Conduct each annual stack test no later than 13 months after the previous stack test.

§ 60.1300 What test methods must I use to stack test?

(a) Follow Table 5 of this subpart to establish the sampling location and to determine pollutant concentrations, number of traverse points, individual test methods, and other specific testing requirements for the different pollutants.

(b) Make sure that stack tests for all the pollutants consist of at least three test runs, as specified in § 60.8. Use the average of the pollutant emission concentrations from the three test runs to determine compliance with the emission limits in Table 1 of this subpart.

(c) Obtain an oxygen (or carbon dioxide) measurement at the same time as your pollutant measurements to determine diluent gas levels, as specified in § 60.1230.

(d) Use the equations in § 60.1460(a) to calculate emission levels at 7 percent oxygen (or an equivalent carbon dioxide basis), the percent reduction in potential hydrogen chloride emissions, and the reduction efficiency for mercury emissions. See the individual test methods in Table 5 of this subpart for other required equations.

(e) You can apply to the Administrator for approval under § 60.8(b) to use a reference method with minor changes in methodology, use an equivalent method, use an alternative method the results of which the Administrator has determined are adequate for demonstrating compliance, waive the requirement for a performance test because you have demonstrated by other means that you are in compliance, or use a shorter sampling time or smaller sampling volume.

§ 60.1305 May I conduct stack testing less often?

(a) You may test less often if you own or operate a Class II municipal waste combustion unit and if all stack tests for a given pollutant over 3 consecutive years show you comply with the emission limit. In that case, you are not required to conduct a stack test for that pollutant for the next 2 years. However, you must conduct another stack test within 36 months of the anniversary date of the third consecutive stack test that shows you comply with the emission limit. Thereafter, you must perform stack tests every 3rd year but no later than 36 months following the previous stack tests. If a stack test shows noncompliance with an emission limit, you must conduct annual stack tests for that pollutant until all stack tests over 3 consecutive years show compliance with the emission limit for that pollutant. The provision applies to all pollutants subject to stack testing requirements: dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

(b) You can test less often for dioxins/furans emissions if you own or operate a municipal waste combustion plant that meets two conditions. First, you have multiple municipal waste combustion units onsite that are subject to this subpart. Second, all those municipal waste combustion units have demonstrated levels of dioxins/furans emissions less than or equal to 7 nanograms per dry standard cubic meter (total mass) for 2 consecutive years. In that case, you may choose to conduct annual stack tests on only one municipal waste combustion unit per year at your plant. The provision only applies to stack testing for dioxins/furans emissions.

(1) Conduct the stack test no more than 13 months following a stack test on any municipal waste combustion unit subject to this subpart at your plant. Each year, test a different municipal waste combustion unit subject to this subpart and test all municipal waste combustion units subject to this subpart in a sequence that you determine. Once you determine a testing sequence, it must not be changed without approval by the Administrator.

(2) If each annual stack test shows levels of dioxins/furans emissions less than or equal to 7 nanograms per dry standard cubic meter (total mass), you may continue stack tests on only one municipal waste combustion unit subject to this subpart per year.

(3) If any annual stack test indicates levels of dioxins/furans emissions greater than 7 nanograms per dry standard cubic meter (total mass), conduct subsequent annual stack tests on all municipal waste combustion units subject to this subpart at your plant. You may return to testing one municipal waste combustion unit subject to this subpart per year if you can demonstrate dioxins/furans emission levels less than or equal to 7 nanograms per dry standard cubic meter (total mass) for all municipal waste combustion units at your plant subject to this subpart for 2 consecutive years.

§ 60.1310 May I deviate from the 13-month testing schedule if unforeseen circumstances arise?

You may not deviate from the 13-month testing schedules specified in §§ 60.1295(b) and 60.1305(b)(1) unless you apply to the Administrator for an alternative schedule, and the Administrator approves your request for alternate scheduling prior to the date on which you would otherwise have been required to conduct the next stack test.

OTHER MONITORING REQUIREMENTS

§ 60.1315 Must I meet other requirements for continuous monitoring?

You must also monitor three operating parameters:

(a) Load level of each municipal waste combustion unit.

(b) Temperature of flue gases at the inlet of your particulate matter air pollution control device.

(c) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

§ 60.1320 How do I monitor the load of my municipal waste combustion unit?

(a) If your municipal waste combustion unit generates steam, you must install, calibrate, maintain, and operate a steam flowmeter or a feed water flowmeter and meet five requirements:

(1) Continuously measure and record the measurements of steam (or feed water) in kilograms (or pounds) per hour.

(2) Calculate your steam (or feed water) flow in 4-hour block averages.

(3) Calculate the steam (or feed water) flow rate using the method in

''American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964 (R1991),'' section 4 (incorporated by reference in § 60.17(h)(2)).

(4) Design, construct, install, calibrate, and use nozzles or orifices for flow rate measurements, using the recommendations in ''American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters,'' 6th Edition (1971), chapter 4 (incorporated by reference in § 60.17(h)(3)).

(5) Before each dioxins/furans stack test, or at least once a year, calibrate all signal conversion elements associated with steam (or feed water) flow measurements according to the manufacturer instructions.

(b) If your municipal waste combustion unit does not generate steam, or, if your municipal waste combustion units have shared steam systems and steam load cannot be estimated per unit, you must determine, to the satisfaction of the Administrator, one or more operating parameters that can be used to continuously estimate load level (for example, the feed rate of municipal solid waste or refuse-derived fuel). You must continuously monitor the selected parameters.

§ 60.1325 How do I monitor the temperature of flue gases at the inlet of my particulate matter control device?

You must install, calibrate, maintain, and operate a device to continuously measure the temperature of the flue gas stream at the inlet of each particulate matter control device.

§ 60.1330 How do I monitor the injection rate of activated carbon?

If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must meet three requirements:

(a) Select a carbon injection system operating parameter that can be used to calculate carbon feed rate (for example, screw feeder speed).

(b) During each dioxins/furans and mercury stack test, determine the average carbon feed rate in kilograms (or pounds) per hour. Also, determine the average operating parameter level that correlates to the carbon feed rate. Establish a relationship between the operating parameter and the carbon feed rate in order to calculate the carbon feed rate based on the operating parameter level.

(c) Continuously monitor the selected operating parameter during all periods when the municipal waste combustion unit is operating and combusting waste, and calculate the 8-hour block average carbon feed rate in kilograms (or pounds) per hour, based on the selected operating parameter. When calculating the 8-hour block average, do two things:

(1) Exclude hours when the municipal waste combustion unit is not operating.

(2) Include hours when the municipal waste combustion unit is operating but the carbon feed system is not working correctly.

§ 60.1335 What is the minimum amount of monitoring data I must collect with my continuous parameter monitoring systems and is the data collection requirement enforceable?

(a) Where continuous parameter monitoring systems are used, obtain 1-hour arithmetic averages for three parameters:

(1) Load level of the municipal waste combustion unit.

(2) Temperature of the flue gases at the inlet of your particulate matter control device.

(3) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average.

(c) Obtain valid 1-hour averages for at least 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement and you must notify the Administrator according to § 60.1410(e).

RECORDKEEPING

§60.1340 What records must I keep?

You must keep five types of records:

(a) Materials separation plan and siting analysis.

(b) Operator training and certification.

(c) Stack tests.

(d) Continuously monitored pollutants and parameters.

(e) Carbon feed rate.

§60.1345 Where must I keep my records and for how long?

(a) Keep all records onsite in paper copy or electronic format unless the Administrator approves another format.

(b) Keep all records on each municipal waste combustion unit for at least 5 years.

(c) Make all records available for submittal to the Administrator, or for onsite review by an inspector.

§60.1350 What records must I keep for the materials separation plan and siting analysis?

You must keep records of five items:

(a) The date of each record.

(b) The final materials separation plan.

(c) The siting analysis.

(d) A record of the location and date of the public meetings.

(e) Your responses to the public comments received during the public comment periods.

§60.1355 What records must I keep for operator training and certification?

You must keep records of six items:

(a) *Records of provisional certifications.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of the initial provisional certifications.

(3) Documentation showing current provisional certifications.

(b) *Records of full certifications.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of initial and renewal full certifications.

(3) Documentation showing current full certifications.

(c) *Records showing completion of the operator training course.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who have completed the EPA or State municipal waste combustion operator training course.

(2) Dates of completion of the operator training course.

(3) Documentation showing completion of the operator training course.

(d) *Records of reviews for plant-specific operating manuals.* Include three items:

(1) Names of persons who have reviewed the operating manual.

(2) Date of the initial review.

(3) Dates of subsequent annual reviews.

(e) *Records of when a certified operator is temporarily offsite.* Include two main items:

(1) If the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, record the dates that the certified chief facility operator and certified shift supervisor were offsite.

(2) When the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks and no other certified operator is onsite, keep records of four items:

(i) Your notice that all certified persons are offsite.

(ii) The conditions that cause those people to be offsite.

(iii) The corrective actions you are taking to ensure a certified chief facility operator or certified shift supervisor is onsite.

(iv) Copies of the written reports submitted every 4 weeks that summarize the actions taken to ensure that a certified chief facility operator or certified shift supervisor will be onsite.

(f) *Records of calendar dates.* Include the calendar date on each record.

§ 60.1360 What records must I keep for stack tests?

For stack tests required under § 60.1285, you must keep records of four items:

(a) The results of the stack tests for eight pollutants or parameters recorded in the appropriate units of measure specified in Table 1 of this subpart:

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(b) Test reports including supporting calculations that document the results of all stack tests.

(c) The maximum demonstrated load of your municipal waste combustion units and maximum temperature at the inlet of your particulate matter control device during all stack tests for dioxins/furans emissions.

(d) The calendar date of each record.

§ 60.1365 What records must I keep for continuously monitored pollutants or parameters?

You must keep records of eight items:

(a) *Records of monitoring data.* Document six parameters measured using continuous monitoring systems:

(1) All 6-minute average levels of opacity.

(2) All 1-hour average concentrations of sulfur dioxide emissions.

(3) For Class I municipal waste combustion units only, all 1-hour average concentrations of nitrogen oxides emissions.

(4) All 1-hour average concentrations of carbon monoxide emissions.

(5) All 1-hour average load levels of your municipal waste combustion unit.

(6) All 1-hour average flue gas temperatures at the inlet of the particulate matter control device.

(b) *Records of average concentrations and percent reductions.* Document five parameters:

(1) All 24-hour daily block geometric average concentrations of sulfur dioxide emissions or average percent reductions of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, all 24-hour daily arithmetic average concentrations of nitrogen oxides emissions.

(3) All 4-hour block or 24-hour daily block arithmetic average concentrations of carbon monoxide emissions.

(4) All 4-hour block arithmetic average load levels of your municipal waste combustion unit.

(5) All 4-hour block arithmetic average flue gas temperatures at the inlet of the particulate matter control device.

(c) *Records of exceedances.* Document three items:

(1) Calendar dates whenever any of the five pollutant or parameter levels recorded in paragraph (b) of this section or the opacity level recorded in paragraph (a)(1) of this section did not meet the emission limits or operating levels specified in this subpart.

(2) Reasons you exceeded the applicable emission limits or operating levels.

(3) Corrective actions you took, or are taking, to meet the emission limits or operating levels.

(d) *Records of minimum data.* Document three items:

(1) Calendar dates for which you did not collect the minimum amount of data required under §§ 60.1260 and 60.1335. Record the dates for five types of pollutants and parameters:

(i) Sulfur dioxide emissions.

(ii) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(iii) Carbon monoxide emissions.

(iv) Load levels of your municipal waste combustion unit.

(v) Temperatures of the flue gases at the inlet of the particulate matter control device.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took, or are taking, to obtain the required amount of data.

(e) *Records of exclusions.* Document each time you have excluded data from your calculation of averages for any of the following five pollutants or parameters and the reasons the data were excluded:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load levels of your municipal waste combustion unit.

(5) Temperatures of the flue gases at the inlet of the particulate matter control device.

(f) *Records of drift and accuracy.* Document the results of your daily drift tests and quarterly accuracy determinations according to Procedure 1 of appendix F of this part. Keep the records for the sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide continuous emissions monitoring systems.

(g) *Records of the relationship between oxygen and carbon dioxide.* If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, document the relationship between oxygen and carbon dioxide, as specified in § 60.1255.

(h) *Records of calendar dates.* Include the calendar date on each record.

§ 60.1370 What records must I keep for municipal waste combustion units that use activated carbon?

For municipal waste combustion units that use activated carbon to control dioxins/furans or mercury emissions, you must keep records of five items:

(a) *Records of average carbon feed rate.* Document five items:

(1) Average carbon feed rate in kilograms (or pounds) per hour during all stack tests for dioxins/furans and mercury emissions. Include supporting calculations in the records.

(2) For the operating parameter chosen to monitor carbon feed rate, average operating level during all stack tests for dioxins/furans and mercury emissions. Include supporting data that document the relationship between the operating parameter and the carbon feed rate.

(3) All 8-hour block average carbon feed rates in kilograms (or pounds) per hour calculated from the monitored operating parameter.

(4) Total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include supporting documentation.

(5) Required quarterly usage of carbon for the municipal waste combustion plant, calculated using equation 4 or 5 in § 60.1460(f). If you choose to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant. Include supporting calculations.

(b) *Records of low carbon feed rates.* Document three items:

(1) The calendar dates when the average carbon feed rate over an 8-hour block was less than the average carbon feed rates determined during the most recent stack test for dioxins/furans or mercury emissions (whichever has a higher feed rate).

(2) Reasons for the low carbon feed rates.

(3) Corrective actions you took or are taking to meet the 8-hour average carbon feed rate requirement.

(c) *Records of minimum carbon feed rate data.* Document three items:

(1) Calendar dates for which you did not collect the minimum amount of carbon feed rate data required under § 60.1335.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took or are taking to get the required amount of data.

(d) *Records of exclusions.* Document each time you have excluded data from your calculation of average carbon feed rates and the reasons the data were excluded.

(e) *Records of calendar dates.* Include the calendar date on each record.

REPORTING

§ 60.1375 What reports must I submit before I submit my notice of construction?

(a) If you are required to submit an application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, you must submit five items by the date you submit your application.

(1) Your draft materials separation plan, as specified in § 60.1065.

(2) Your revised materials separation plan, as specified in § 60.1085(c).

(3) Your notice of the initial public meeting for your draft materials separation plan, as specified in § 60.1070(b).

(4) A transcript of the initial public meeting, as specified in § 60.1080(f).

(5) The document that summarizes your responses to the public comments you received during the initial public comment period, as specified in § 60.1085(a).

(b) If you are not required to submit an application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, you must submit the items in paragraph (a) of this section with your notice of construction.

§ 60.1380 What must I include in my notice of construction?

(a) Include ten items:

(1) A statement of your intent to construct the municipal waste combustion unit.

(2) The planned initial startup date of your municipal waste combustion unit.

(3) The types of fuels you plan to combust in your municipal waste combustion unit.

(4) The capacity of your municipal waste combustion unit including supporting capacity calculations, as specified in § 60.1460(d) and (e).

(5) Your siting analysis, as specified in § 60.1125.

(6) Your final materials separation plan, as specified in § 60.1100(b).

(7) Your notice of the second public meeting (siting analysis meeting), as specified in § 60.1130(b).

(8) A transcript of the second public meeting, as specified in § 60.1140(d).

(9) A copy of the document that summarizes your responses to the public comments you received during the second public comment period, as specified in § 60.1145(a).

(10) Your final siting analysis, as specified in § 60.1145(c).

(b) Submit your notice of construction no later than 30 days after you commence construction, reconstruction, or modification of your municipal waste combustion unit.

§ 60.1385 What reports must I submit after I submit my notice of construction and in what form?

(a) Submit an initial report and annual reports, plus semiannual reports for any emission or parameter level that does not meet the limits specified in this subpart.

(b) Submit all reports on paper, postmarked on or before the submittal dates in §§ 60.1395, 60.1405, and 60.1420. If the Administrator agrees, you may submit electronic reports.

(c) Keep a copy of all reports required by §§ 60.1400, 60.1410, and 60.1425 onsite for 5 years.

§ 60.1390 What are the appropriate units of measurement for reporting my data?

See Tables 1 and 2 of this subpart for appropriate units of measurement.

§ 60.1395 When must I submit the initial report?

As specified in § 60.7(c), submit your initial report within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.

§ 60.1400 What must I include in my initial report?

You must include seven items:

(a) The emission levels measured on the date of the initial evaluation of your continuous emission monitoring systems for all of the following five pollutants or parameters as recorded in accordance with § 60.1365(b).

(1) The 24-hour daily geometric average concentration of sulfur dioxide emissions or the 24-hour daily geometric percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, the 24-hour daily arithmetic average concentration of nitrogen oxides emissions.

(3) The 4-hour block or 24-hour daily arithmetic average concentration of carbon monoxide emissions.

(4) The 4-hour block arithmetic average load level of your municipal waste combustion unit.

(5) The 4-hour block arithmetic average flue gas temperature at the inlet of the particulate matter control device.

(b) The results of the initial stack tests for eight pollutants or parameters (use appropriate units as specified in Table 2 of this subpart):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(c) The test report that documents the initial stack tests including supporting calculations.

(d) The initial performance evaluation of your continuous emissions monitoring systems. Use the applicable performance specifications in appendix B of this part in conducting the evaluation.

(e) The maximum demonstrated load of your municipal waste combustion unit and the maximum demonstrated temperature of the flue gases at the inlet of the particulate matter control device. Use values established during your initial stack test for dioxins/furans emissions and include supporting calculations.

(f) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the average carbon feed rates that you recorded during the initial stack tests for dioxins/furans and mercury emissions. Include supporting calculations as specified in §60.1370(a)(1) and (2).

(g) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in §60.1255.

§60.1405 When must I submit the annual report?

Submit the annual report no later than February 1 of each year that follows the calendar year in which you collected the data. If you have an operating permit for any unit under title V of the Clean Air Act (CAA), the permit may require you to submit semiannual reports. Parts 70 and 71 of this chapter contain program requirements for permits.

§60.1410 What must I include in my annual report?

Summarize data collected for all pollutants and parameters regulated under this subpart. Your summary must include twelve items:

(a) The results of the annual stack test, using appropriate units, for eight pollutants, as recorded under §60.1360(a):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Particulate matter.

(6) Opacity.

(7) Hydrogen chloride.

(8) Fugitive ash.

(b) A list of the highest average levels recorded, in the appropriate units. List the values for five pollutants or parameters:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device (4-hour block average).

(c) The highest 6-minute opacity level measured. Base the value on all 6-minute average opacity levels recorded by your continuous opacity monitoring system (§60.1365(a)(1)).

(d) For municipal waste combustion units that use activated carbon for controlling dioxins/furans or mercury emissions, include four records:

(1) The average carbon feed rates recorded during the most recent dioxins/furans and mercury stack tests.

(2) The lowest 8-hour block average carbon feed rate recorded during the year.

(3) The total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant.

(4) The required quarterly carbon usage of your municipal waste combustion plant calculated using equation 4 or 5 in §60.1460(f). If you choose to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant.

(e) The total number of days that you did not obtain the minimum number of hours of data for six pollutants or parameters. Include the reasons you did not obtain the data and corrective actions that you have taken to obtain the data in the future. Include data on:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.

(6) Carbon feed rate.

(f) The number of hours you have excluded data from the calculation of average levels (include the reasons for excluding it). Include data for six pollutants or parameters:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.

(6) Carbon feed rate.

(g) A notice of your intent to begin a reduced stack testing schedule for dioxins/furans emissions during the following calendar year, if you are eligible for alternative scheduling (§60.1305(a) or (b)).

(h) A notice of your intent to begin a reduced stack testing schedule for other pollutants during the following calendar year if you are eligible for alternative scheduling (§60.1305(a)).

(i) A summary of any emission or parameter level that did not meet the limits specified in this subpart.

(j) A summary of the data in paragraphs (a) through (d) of this section from the year preceding the reporting year which gives the Administrator a summary of the performance of the municipal waste combustion unit over a 2-year period.

(k) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in §60.1255.

(l) Documentation of periods when all certified chief facility operators and certified shift supervisors are offsite for more than 12 hours.

§60.1415 What must I do if I am out of compliance with the requirements of this subpart?

You must submit a semiannual report on any recorded emission or parameter level that does not meet the requirements specified in this subpart.

§60.1420 If a semiannual report is required, when must I submit it?

(a) For data collected during the first half of a calendar year, submit your semiannual report by August 1 of that year.

(b) For data you collected during the second half of the calendar year, submit your semiannual report by February 1 of the following year.

§60.1425 What must I include in the semiannual out-of-compliance reports?

You must include three items in the semiannual report:

(a) For any of the following six pollutants or parameters that exceeded the limits specified in this subpart, include the calendar date they exceeded the limits, the averaged and recorded data for that date, the reasons for exceeding the limits, and your corrective actions:

(1) Concentration or percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, concentration of nitrogen oxides emissions.

(3) Concentration of carbon monoxide emissions.

(4) Load level of your municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of your particulate matter air pollution control device.

(6) Average 6-minute opacity level. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the limit on opacity emissions.

(b) If the results of your annual stack tests (as recorded in § 60.1360(a)) show emissions above the limits specified in Table 1 of this subpart for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, include a copy of the test report that documents the emission levels and your corrective actions.

(c) For municipal waste combustion units that apply activated carbon to control dioxins/furans or mercury emissions, include two items:

(1) Documentation of all dates when the 8-hour block average carbon feed rate (calculated from the carbon injection system operating parameter) is less than the highest carbon feed rate established during the most recent mercury and dioxins/furans stack test (as specified in § 60.1370(a)(1)). Include four items:

(i) Eight-hour average carbon feed rate.

(ii) Reasons for occurrences of low carbon feed rates.

(iii) The corrective actions you have taken to meet the carbon feed rate requirement.

(iv) The calendar date.

(2) Documentation of each quarter when total carbon purchased and delivered to the municipal waste combustion plant is less than the total required quarterly usage of carbon. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include five items:

(i) Amount of carbon purchased and delivered to the plant.

(ii) Required quarterly usage of carbon.

(iii) Reasons for not meeting the required quarterly usage of carbon.

(iv) The corrective actions you have taken to meet the required quarterly usage of carbon.

(v) The calendar date.

§ 60.1430 Can reporting dates be changed?

(a) If the Administrator agrees, you may change the semiannual or annual reporting dates.

(b) See § 60.19(c) for procedures to seek approval to change your reporting date.

AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE

§ 60.1435 What is an air curtain incinerator?

An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

§ 60.1440 What is yard waste?

Yard waste is grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(a) Construction, renovation, and demolition wastes that are exempt from the definition of ''municipal solid waste'' in § 60.1465.

(b) Clean wood that is exempt from the definition of ''municipal solid waste'' in § 60.1465.

§ 60.1445 What are the emission limits for air curtain incinerators that burn 100 percent yard waste?

If your air curtain incinerator combusts 100 percent yard waste, you must meet only the emission limits in this section.

(a) Within 60 days after your air curtain incinerator reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup, you must meet two limits:

(1) The opacity limit is 10 percent (6-minute average) for air curtain incinerators that can combust at least 35 tons per day of municipal solid waste and no more than 250 tons per day of municipal solid waste.

(2) The opacity limit is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) Except during malfunctions, the requirements of this subpart apply at all times. Each malfunction must not exceed 3 hours.

§ 60.1450 How must I monitor opacity for air curtain incinerators that burn 100 percent yard waste?

(a) Use EPA Reference Method 9 in appendix A of this part to determine compliance with the opacity limit.

(b) Conduct an initial test for opacity as specified in § 60.8.

(c) After the initial test for opacity, conduct annual tests no more than 13 calendar months following the date of your previous test.

§ 60.1455 What are the recordkeeping and reporting requirements for air curtain incinerators that burn 100 percent yard waste?

(a) Provide a notice of construction that includes four items:

(1) Your intent to construct the air curtain incinerator.

(2) Your planned initial startup date.

(3) Types of fuels you plan to combust in your air curtain incinerator.

(4) The capacity of your incinerator, including supporting capacity calculations, as specified in § 60.1460(d) and (e).

(b) Keep records of results of all opacity tests onsite in either paper copy or electronic format unless the Administrator approves another format.

(c) Keep all records for each incinerator for at least 5 years.

(d) Make all records available for submittal to the Administrator or for onsite review by an inspector.

(e) Submit the results (each 6-minute average) of the opacity tests by February 1 of the year following the year of the opacity emission test.

(f) Submit reports as a paper copy on or before the applicable submittal date. If the Administrator agrees, you may submit reports on electronic media.

(g) If the Administrator agrees, you may change the annual reporting dates (see § 60.19(c)).

(h) Keep a copy of all reports onsite for a period of 5 years.

EQUATIONS

§ 60.1460 What equations must I use?

(a) *Concentration correction to 7 percent oxygen.* Correct any pollutant concentration to 7 percent oxygen using equation 1 of this section:

$$C_{7\%} = C_{unc} * (13.9) * (1/(20.9 - CO_2)) \quad \text{(Eq.1)}$$

Where:

$C_{7\%}$ = concentration corrected to 7 percent oxygen.

C_{unc} = uncorrected pollutant concentration.

CO_2 = concentration of oxygen (percent).

(b) *Percent reduction in potential mercury emissions.* Calculate the percent reduction in potential mercury emissions ($\%P_{Hg}$) using equation 2 of this section:

$$\%P_{Hg} = (E_i - {}_o) * (100/E_i) \quad \text{(Eq. 2)}$$

Where:

$\%P_{Hg}$ = percent reduction of potential mercury emissions

E_i = mercury emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_o = mercury emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(c) *Percent reduction in potential hydrogen chloride emissions.* Calculate the percent reduction in potential hydrogen chloride emissions ($\%P_{HC1}$) using equation 3 of this section:

$$\%P_{HC1} = (E_i - E_o) * (100/E_i) \quad \text{(Eq. 3)}$$

Where:

$\%P_{HC1}$ = percent reduction of the potential hydrogen chloride emissions

E_I = hydrogen chloride emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_O = hydrogen chloride emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(d) *Capacity of a municipal waste combustion unit.* For a municipal waste combustion unit that can operate continuously for 24-hour periods, calculate the municipal waste combustion unit capacity based on 24 hours of operation at the maximum charge rate. To determine the maximum charge rate, use one of two methods:

(1) For municipal waste combustion units with a design based on heat input capacity, calculate the maximum charging rate based on the maximum heat input capacity and one of two heating values:

(i) If your municipal waste combustion unit combusts refuse-derived fuel, use a heating value of 12,800 kilojoules per kilogram (5,500 British thermal units per pound).

(ii) If your municipal waste combustion unit combusts municipal solid waste, use a heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound).

(2) For municipal waste combustion units with a design not based on heat input capacity, use the maximum designed charging rate.

(e) *Capacity of a batch municipal waste combustion unit.* Calculate the capacity of a batch municipal waste combustion unit as the maximum design amount of municipal solid waste they can charge per batch multiplied by the maximum number of batches they can process in 24 hours. Calculate the maximum number of batches by dividing 24 by the number of hours needed to process one batch. Retain fractional batches in the calculation. For example, if one batch requires 16 hours, the municipal waste combustion unit can combust 24/16, or 1.5 batches, in 24 hours.

(f) *Quarterly carbon usage.* If you use activated carbon to comply with the dioxins/furans or mercury limits, calculate the required quarterly usage of carbon using equation 4 of this section for plant basis or equation 5 of this section for unit basis:

(1) Plant basis.

$$C = \sum_{i=1}^{n} f_i * h_i \qquad \text{(Eq. 4)}$$

Where:

C = required quarterly carbon usage for the plant in kilograms (or pounds).

f_i = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h_i = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

n = number of municipal waste combustion units, i, located at your plant.

(2) Unit basis.

$$C = f * h \qquad \text{(Eq. 5)}$$

Where:

C = required quarterly carbon usage for the unit in kilograms (or pounds).

f = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

DEFINITIONS

§60.1465 What definitions must I know?

Terms used but not defined in this section are defined in the CAA and in subparts A and B of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or the Administrator of a State Air Pollution Control Agency.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

Batch municipal waste combustion unit means a municipal waste combustion unit designed so it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed during combustion.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 (or 366 consecutive days for leap years) consecutive days starting on January 1 and ending on December 31.

Chief facility operator means the person in direct charge and control of the operation of a municipal waste combustion unit. That person is responsible for daily onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit.

Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See the definition in this section of ''municipal waste combustion plant capacity'' for specification of which units at a plant site are included in the aggregate capacity calculation.

Class II units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See the definition in this section of ''municipal waste combustion plant capacity'' for specification of which units at a plant site are included in the aggregate capacity calculation.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items:

(1) ''Yard waste,'' which is defined elsewhere in this section.

(2) Construction, renovation, or demolition wastes (for example, railroad ties and telephone poles) that are exempt from the definition of ''municipal solid waste'' in this section.

Co-fired combustion unit means a unit that combusts municipal solid waste with nonmunicipal solid waste fuel (for example, coal, industrial process waste). To be considered a co-fired combustion unit, the unit must be subject to a federally enforceable permit that limits it to combusting a fuel feed stream which is 30 percent or less (by weight) municipal solid waste as measured each calendar quarter.

Continuous burning means the continuous, semicontinuous, or batch feeding of municipal solid waste to dispose of the waste, produce energy, or provide heat to the combustion system in preparation for waste disposal or energy production. Continuous burning does not mean the use of municipal solid waste solely to thermally protect the grate or hearth during the startup period when municipal solid waste is not fed to the grate or hearth.

Continuous emission monitoring system means a monitoring system *that continuously measures the emissions of a pollutant from a municipal waste combustion unit.*

Dioxins/furans mean tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Eight-hour block average means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of three 8-hour periods of time:

(1) 12:00 midnight to 8:00 a.m.

(2) 8:00 a.m. to 4:00 p.m.

(3) 4:00 p.m. to 12:00 midnight.

Federally enforceable means all limits and conditions the Administrator can enforce (including the requirements of 40 CFR parts 60, 61, and 63), requirements in a State's implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

First calendar half means the period that starts on January 1 and ends on June 30 in any year.

Fluidized bed combustion unit means a unit where municipal waste is combusted in a fluidized bed of material. The fluidized bed material may remain in the primary combustion zone or may be carried out of the primary combustion zone and returned through a recirculation loop.

Four-hour block average or *4-hour block average* means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of six 4-hour periods:

(1) 12:00 midnight to 4:00 a.m.

(2) 4:00 a.m. to 8:00 a.m.

(3) 8:00 a.m. to 12:00 noon.

(4) 12:00 noon to 4:00 p.m.

(5) 4:00 p.m. to 8:00 p.m.

(6) 8:00 p.m. to 12:00 midnight.

Mass burn refractory municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, that includes municipal waste combustion units with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a cylindrical rotary waterwall furnace.

Mass burn waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a waterwall furnace.

Materials separation plan means a plan that identifies a goal and an approach for separating certain components of municipal solid waste for a given service area in order to make the separated materials available for recycling. A materials separation plan may include three items:

(1) Elements such as dropoff facilities, buy-back or deposit-return incentives, curbside pickup programs, or centralized mechanical separation systems.

(2) Different goals or approaches for different subareas in the service area.

(3) No materials separation activities for certain subareas or, if warranted, the entire service area.

Maximum demonstrated load of a municipal waste combustion unit means the highest 4-hour block arithmetic average municipal waste combustion unit load achieved during 4 consecutive hours in the course of the most recent dioxins/furans stack test that demonstrates compliance with the applicable emission limit for dioxins/furans specified in this subpart.

Maximum demonstrated temperature of the particulate matter control device means the highest 4-hour block arithmetic average flue gas temperature measured at the inlet of the particulate matter control device during 4 consecutive hours in the course of the most recent stack test for dioxins/furans emissions that demonstrates compliance with the limits specified in this subpart.

Medical/infectious waste means any waste meeting the definition of ''medical/infectious waste'' in §60.51c of subpart E, of this part.

Mixed fuel-fired (pulverized coal/refuse-derived fuel) combustion unit means a combustion unit that combusts coal and refuse-derived fuel simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is combusted in suspension. That includes both conventional pulverized coal and micropulverized coal.

Modification or *modified municipal waste combustion unit* means a municipal waste combustion unit you have changed after June 6, 2001 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs.

(2) Any physical change in the municipal waste combustion unit or change in the method of operating it that increases the emission level of any air pollutant for which new source performance standards have been established under section 129 or section 111 of the CAA. Increases in the emission level of any air pollutant are determined when the municipal waste combustion unit operates at 100 percent of its physical load capability and are measured downstream of all air pollution control devices. Load restrictions based on permits or other nonphysical operational restrictions cannot be considered in the determination.

Modular excess-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or *municipal-type solid waste* means household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Municipal waste combustion plant means one or more municipal waste combustion units at the same location as specified under Applicability (§ 60.1015(a)and (b)).

Municipal waste combustion plant capacity means the aggregate municipal waste combustion capacity of all municipal waste combustion units at the plant that are subject to subparts Ea or Eb of this part, or this subpart.

Municipal waste combustion unit means any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected combustion units (with or without heat recovery), modular combustion units (starved-air or excess-air), boilers (for example, steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Two criteria further define municipal waste combustion units:

(1) Municipal waste combustion units do not include pyrolysis or combustion units located at a plastics or rubber recycling unit as specified under Applicability (§ 60.1020(h) and (i)). Municipal waste combustion units also do not include cement kilns that combust municipal solid waste as specified under Applicability (§ 60.1020(j)). Municipal waste combustion units also do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of a municipal waste combustion unit are defined as follows. The municipal waste combustion unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustion unit water system. The municipal waste combustion unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set. The municipal waste combustion unit boundary starts at the municipal solid waste pit or hopper and extends through three areas:

(i) The combustion unit flue gas system, which ends immediately after the heat recovery equipment or, if there is no heat recovery equipment, immediately after the combustion chamber.

(ii) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

(iii) The combustion unit water system, which starts at the feed water pump and ends at the piping that exits the steam drum or superheater.

Particulate matter means total particulate matter emitted from municipal waste combustion units as measured using EPA Reference Method 5 in appendix A of this part and the procedures specified in § 60.1300.

Plastics or rubber recycling unit means an integrated processing unit for which plastics, rubber, or rubber tires are the only feed materials (incidental contaminants may be in the feed materials). The feed materials are processed and marketed to become input feed stock for chemical plants or petroleum refineries. The following three criteria further define a plastics or rubber recycling unit:

(1) Each calendar quarter, the combined weight of the feed stock that a plastics or rubber recycling unit produces must be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires that recycling unit processes.

(2) The plastics, rubber, or rubber tires fed to the recycling unit may originate from separating or diverting plastics, rubber, or rubber tires from municipal or industrial solid waste. The feed materials may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards.

(3) The plastics, rubber, and rubber tires fed to the recycling unit may contain incidental contaminants (for example, paper labels on plastic bottles or metal rings on plastic bottle caps).

Potential hydrogen chloride emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Potential mercury emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without controls for mercury emissions.

Potential sulfur dioxide emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids by heating municipal solid waste. The gases, liquids, or solids produced are combusted and the emissions vented to the atmosphere.

Reconstruction means rebuilding a municipal waste combustion unit and meeting two criteria:

(1) The reconstruction begins after June 6, 2001.

(2) The cumulative cost of the construction over the life of the unit exceeds 50 percent of the original cost of building and installing the municipal waste combustion unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the municipal waste combustion unit used to calculate those costs, see the definition in this section of ‘‘municipal waste combustion unit.’’

Refractory unit or *refractory wall furnace* means a municipal waste combustion unit that has no energy recovery (such as through a waterwall) in the furnace of the municipal waste combustion unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. That includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Same location means the same or contiguous properties under common ownership or control, including those separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof. Entities may include a municipality, other governmental unit, or any quasi-governmental authority (for example, a public utility district or regional authority for waste disposal).

Second calendar half means the period that starts on July 1 and ends on December 31 in any year.

Shift supervisor means the person who is in direct charge and control of operating a municipal waste combustion unit and who is responsible for onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit during an assigned shift.

Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel) combustion unit means a municipal waste combustion unit that combusts coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Standard conditions when referring to units of measure mean a temperature of 20 °C and a pressure of 101.3 kilopascals.

Startup period means the period when a municipal waste combustion unit begins the continuous combustion of municipal solid waste. It does not include any warmup period during which the municipal waste combustion unit combusts fossil fuel or other solid waste fuel but receives no municipal solid waste.

Stoker (refuse-derived fuel) combustion unit means a steam generating unit that combusts refuse-derived fuel in a semisuspension combusting mode, using air-fed distributors.

Total mass dioxins/furans or *total mass* means the total mass of tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans as determined using EPA Reference Method 23 in appendix A of this part and the procedures specified in § 60.1300.

Twenty-four hour daily average or *24-hour daily average* means either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the municipal waste combustion unit operates and combusts municipal solid waste measured during the 24 hours between 12:00 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a municipal waste combustion unit that has energy (heat) recovery in the furnace (for example, radiant heat transfer section) of the combustion unit.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(1) Construction, renovation, and demolition wastes that are exempt from the definition of ''municipal solid waste'' in this section.

(2) Clean wood that is exempt from the definition of ''municipal solid waste'' in this section.

TABLES

TABLE 1 OF SUBPART AAAA—EMISSION LIMITS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS

For the following pollutants	You must meet the following emission limits\a\	Using the following averaging times	And determine compliance by the following methods
1. Organics			
Dioxins/Furans (total mass basis).	13 nanograms per dry standard cubic meter.	3-run average (minimum run duration is 4 hours).	Stack test.
2. Metals:			
Cadmium	0.020 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
Lead	0.20 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
Mercury	0.080 milligrams per dry standard cubic meter or 85 percent reduction of potential mercury emissions.	3-run average (run duration specified in test method).	Stack test.
Opacity	10 percent	Thirty 6-minute averages	Stack test.
Particulate Matter	24 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
3. Acid Gases:			
Hydrogen Chloride	25 parts per million by dry volume or 95 percent reduction of potential hydrogen chloride emissions.	3-run average (minimum run duration is 1 hour).	Stack test
Nitrogen Oxides (Class I units) \b\.	150 (180 for 1st year of operation) parts per million by dry volume.	24-hour daily block arithmetic average concentration.	Continuous emission monitoring system.

TABLE 1 OF SUBPART AAAA—EMISSION LIMITS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS—Continued

For the following pollutants	You must meet the following emission limits\a\	Using the following averaging times	And determine compliance by the following methods
Nitrogen Oxides (Class II units) \c\.	500 parts per million by dry volume.	See footnote \d\	See footnote\d\
Sulfur Dioxide	30 parts per million by dry volume or 80 percent reduction of potential sulfur dioxide emissions.	24-hour daily block geometric average concentration or percent reduction.	Continuous monitoring emission system.
4. Other:			
Fugitive Ash	Visible emissions for no more than 5 percent of hourly observation period.	Three 1-hour observation periods.	Visible emission test.

[a] All emission limits (except for opacity) are measured at 7 percent oxygen.

[b] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See §60.1465 for definitions.

[c] Class II units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity no more than 250 tons per day of municipal solid waste. See §60.1465 for definitions.

[d] No monitoring, testing, recordkeeping, or reporting is required to demonstrate compliance with the nitrogen oxides limit for Class II units.

TABLE 2 OF SUBPART AAAA—CARBON MONOXIDE EMISSION LIMITS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS

For the following municipal waste combustion units	You must meet the following carbon monoxide limits \a\	Using the following averaging times \b\
1. Fluidized-bed	100 parts per million by dry volume	4-hour.
2. Fluidized bed, mixed fuel, (wood/refuse-derived fuel).	200 parts per million by dry volume	24-hour.\c\
3. Mass burn rotary refractory	100 parts per million by dry volume	4-hour.
4. Mass burn rotary waterwall	100 parts per million by dry volume	24-hour.
5. Mass burn waterwall and refractory	100 parts per million by dry volume	4-hour.
6. Mixed fuel-fired (pulverized coal/refuse-derived fuel).	150 parts per million by dry volume	4-hour.
7. Modular starved-air and excess air	50 parts per million by dry volume	4-hour.
8. Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel).	150 parts per million by dry volume	24-hour daily.
9. Stoker, refuse-derived fuel	150 parts per million by dry volume	24-hour daily.

[a] All limits (except for opacity) are measured at 7 percent oxygen. Compliance is determined by continuous emission monitoring systems.

[b] Block averages, arithmetic mean. See §60.1465 for definitions.

[c] 24-hour block average, geometric mean. See §60.1465 for definitions.

TABLE 3 OF SUBPART AAAA—REQUIREMENTS FOR VALIDATING CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following continuous emission monitoring systems	Use the following methods in appendix A of this part to validate pollutant concentration levels	Use the following methods in appendix A of this part to measure oxygen (or carbon dioxide)
1. Nitrogen Oxides (Class I units only)[a]	Method 7, 7A, 7B, 7C, 7D, or 7E	Method 3 or 3A.
2. Sulfur Dioxide	Method 6 or 6C	Method 3 or 3A.
3. Carbon Monoxide	Method 10, 10A, or 10B	Method 3 or 3A.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See §60.1465 for definitions.

TABLE 4 OF SUBPART AAAA—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following pollutants	Use the following span values for your CEMS	Use the following performance specifications in appendix B of this part for your CEMS	If needed to meet minimum data requirements, use the following alternate methods in appendix A of this part to collect data
1. Opacity	100 percent opacity	P.S. 1	Method 9.

TABLE 4 OF SUBPART AAAA—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)—Continued

For the following pollutants	Use the following span values for your CEMS	Use the following performance specifications in appendix B of this part for your CEMS	If needed to meet minimum data requirements, use the following alternate methods in appendix A of this part to collect data
2. Nitrogen Oxides (Class I units only)[a].	Control device outlet: 125 percent of the maximum expected hourly potential nitrogen oxides emissions of the municipal waste combustion unit.	P.S. 2	Method 7E.
3. Sulfur Dioxide	Inlet to control device: 125 percent of the maximum expected sulfur dioxide emissions of the municipal waste combustion unit. Control device outlet: 50 percent of the maximum expected hourly potential sulfur dioxide emissions of the municipal waste combustion unit.	P.S. 2	Method 6C.
4. Carbon Monoxide	125 percent of the maximum expected hourly potential carbon with monoxide emissions of the municipal waste combustion unit.	P.S. 4A	Method 10 alternative interference trap.
5. Oxygen or Carbon Dioxide.	25 percent oxygen or 25 percent carbon dioxide.	P.S. 3	Method 3A or 3B.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See § 60.1465 for definitions.

TABLE 5 OF SUBPART AAAA—REQUIREMENTS FOR STACK TESTS

To measure the following pollutants	Use the following methods in appendix A of this part to determine the sampling location	Use the methods in appendix A of this part to measure pollutant concentration	Also note the following additional information
1. Organics:			
Dioxins/Furans	Method 1	Method 23[a]	The minimum sampling time must be 4 hours per test run while the municipal waste combustion unit is operating at full load.
2. Metals:			
Cadmium	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Lead	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Mercury	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Opacity	Method 9	Method 9	Use Method 9 to determine compliance with opacity limit. 3-hour observation period (thirty 6-minute averages).
Particulate Matter	Method 1	Method 5[a]	The minimum sample Matter volume must be 1.0 cubic meters. The probe and filter holder heating systems in the sample train must be set to provide a gas temperature no greater than 160 ±14°C. The minimum sampling time is 1 hour.
3. Acid Gases:[b]			
Hydrogen Chloride	Method 1	Method 26 or 26A[a]	Test runs must be at least 1 hour long while the municipal waste combustion unit is operating at full load.
4. Other:[b]			
Fugitive Ash	Not applicable	Method 22 (visible emissions).	The three 1-hour observation period must include periods when the facility transfers fugitive ash from the municipal waste combustion unit to the area where the fugitive ash is stored or loaded into containers or trucks.

[a] Must simultaneously measure oxygen (or carbon dioxide) using Method 3A or 3B in appendix A of this part.

[b] Use CEMS to test sulfur dioxide, nitrogen oxide, and carbon monoxide. Stack tests are not required except for quality assurance requirements in Appendix F of this part.

Subpart BBBB—Emission Guidelines and Compliance Times for Small Municipal Waste Combustion Units Constructed on or Before August 30, 1999

SOURCE: 65 FR 76384, Dec. 6, 2000, unless otherwise noted.

INTRODUCTION

§60.1500 What is the purpose of this subpart?

This subpart establishes emission guidelines and compliance schedules for the control of emissions from existing small municipal waste combustion units. The pollutants addressed by the emission guidelines are listed in Tables 2, 3, 4, and 5 of this subpart. The emission guidelines are developed in accordance with sections 111(d) and 129 of the Clean Air Act (CAA) and subpart B of this part.

§60.1505 Am I affected by this subpart?

(a) If you are the Administrator of an air quality program in a State or United States protectorate with one or more existing small municipal waste combustion units that commenced construction on or before August 30, 1999, you must submit a State plan to the U.S. Environmental Protection Agency (EPA) that implements the emission guidelines contained in this subpart.

(b) You must submit the State plan to EPA by December 6, 2001.

§60.1510 Is a State plan required for all States?

No, you are not required to submit a State plan if there are no existing small municipal waste combustion units in your State and you submit a negative declaration letter in place of the State plan.

§60.1515 What must I include in my State plan?

(a) Include nine items:

(1) Inventory of affected municipal waste combustion units, including those that have ceased operation but have not been dismantled.

(2) Inventory of emissions from affected municipal waste combustion units in your State.

(3) Compliance schedules for each affected municipal waste combustion unit.

(4) Good combustion practices and emission limits for affected municipal waste ombustion units that are at least as protective as the emission guidelines contained in this subpart.

(5) Stack testing, continuous emission monitoring, recordkeeping, and reporting requirements.

(6) Certification that the hearing on the State plan was held, a list of witnesses and their organizational affiliations, if any, appearing at the hearing, and a brief written summary of each presentation or written submission.

(7) Provision for State progress reports to EPA.

(8) Identification of enforceable State mechanisms that you selected for implementing the emission guidelines of this subpart.

(9) Demonstration of your State's legal authority to carry out the CAA sections 111(d) and 129 State plan.

(b) Your State plan can deviate from the format and content of the emission guidelines contained in this subpart. However, if your State plan does deviate, you must demonstrate that your State plan is as protective as the emission guidelines contained in this subpart. Your State plan must address regulatory applicability, increments of progress for retrofit, operator training and certification, operating practice, emission limits, continuous emission monitoring, stack testing, recordkeeping, reporting, and air curtain incinerator requirements.

(c) Follow the requirements of subpart B of this part in your State plan.

§60.1520 Is there an approval process for my State plan?

The EPA will review your State plan according to §60.27.

§60.1525 What if my State plan is not approvable?

If you do not submit an approvable State plan (or a negative declaration letter), EPA will develop a Federal plan, according to §60.27 to implement the emission guidelines contained in this subpart. Owners and operators of municipal waste combustion units not covered by an approved and currently effective State plan must comply with the Federal plan. The Federal plan is an interim action and, by its own terms, will cease to apply when your State plan is approved and becomes effective.

§ 60.1530 Is there an approval process for a negative declaration letter?

No, the EPA has no formal review process for negative declaration letters. Once your negative declaration letter has been received, EPA will place a copy in the public docket and publish a notice in the FEDERAL REGISTER. If, at a later date, an existing small municipal waste combustion unit is identified in your State, the Federal plan implementing the emission guidelines contained in this subpart will automatically apply to that municipal waste combustion unit until your State plan is approved.

§ 60.1535 What compliance schedule must I include in my State plan?

(a) Your State plan must include compliance schedules that require small municipal waste combustion units to achieve final compliance or cease operation as expeditiously as practicable but not later than the earlier of two dates:

(1) December 6, 2005.

(2) Three years after the effective date of State plan approval.

(b) For compliance schedules longer than 1 year after the effective date of State plan approval, State plans must include two items:

(1) Dates for enforceable increments of progress as specified in § 60.1590.

(2) For Class I units (see definition in § 60.1940), dioxins/furans stack test results for at least one test conducted during or after 1990. The stack tests must have been conducted according to the procedures specified under § 60.1790.

(c) Class I units that commenced construction after June 26, 1987 must comply with the dioxins/furans and mercury limits specified in Tables 2 and 3 of this subpart by the later of two dates:

(1) One year after the effective date of State plan approval.

(2) One year following the issuance of a revised construction or operation permit, if a permit modification is required.

§ 60.1540 Are there any State plan requirements for this subpart that supersede the requirements specified in subpart B?

Subpart B of this part establishes general requirements for developing and processing CAA section 111(d) plans. This subpart applies instead of the requirements in subpart B of this part, for two items:

(a) *Option for case-by-case less stringent emission standards and longer compliance schedules.* State plans developed to implement this subpart must be as protective as the emission guidelines contained in this subpart. State plans must require all municipal waste combustion units to comply no later than December 6, 2005. That requirement applies instead of the option for case-by-case less stringent emission standards and longer compliance schedules in § 60.24(f).

(b) *Increments of progress requirements.* For Class II units (see definition in § 60.1940), a State plan must include at least two increments of progress for the affected municipal waste combustion units. The two minimum increments are the final control plan submittal date and final compliance date in § 60.21(h)(1) and (5). That requirement applies instead of the requirement of § 60.24(e)(1) that would require a State plan to include all five increments of progress for all municipal waste combustion units. For Class I units under this subpart, the final control plan must contain the five increments of progress in § 60.24(e)(1).

§ 60.1545 Does this subpart directly affect municipal waste combustion unit owners and operators in my State?

(a) No, this subpart does not directly affect municipal waste combustion unit owners and operators in your State. However, municipal waste combustion unit owners and operators must comply with the State plan you developed to implement the emission guidelines contained in this subpart. Some States may incorporate the emission guidelines contained in this subpart into their State plans by direct incorporation by reference. Others may include the model rule text directly in their State plan.

(b) All municipal waste combustion units must be in compliance with the requirements established in this subpart by December 6, 2005, whether the municipal waste combustion unit is regulated under a State or Federal plan.

APPLICABILITY OF STATE PLANS

§60.1550 What municipal waste combustion units must I address in my State plan?

(a) Your State plan must address all existing small municipal waste combustion units in your State that meet two criteria:

(1) The municipal waste combustion unit has the capacity to combust at least 35 tons per day of municipal solid waste but no more than 250 tons per day of municipal solid waste or refuse-derived fuel.

(2) The municipal waste combustion unit commenced construction on or before August 30, 1999.

(b) If an owner or operator of a municipal waste combustion unit makes changes that meet the definition of modification or reconstruction after June 6, 2001 for subpart AAAA of this part, the municipal waste combustion unit becomes subject to subpart AAAA of this part and the State plan no longer applies to that unit.

(c) If an owner or operator of a municipal waste combustion unit makes physical or operational changes to an existing municipal waste combustion unit primarily to comply with your State plan, subpart AAAA of this part (New Source Performance Standards for New Small Municipal Waste Combustion Units) does not apply to that unit. Such changes do not constitute modifications or reconstructions under subpart AAAA of this part.

§60.1555 Are any small municipal waste combustion units exempt from my State plan?

(a) *Small municipal waste combustion units that combust less than 11 tons per day.* Units are exempt from your State plan if four requirements are met:

(1) The municipal waste combustion unit is subject to a federally enforceable permit limiting the amount of municipal solid waste combusted to less than 11 tons per day.

(2) You are notified by the owner or operator that the unit qualifies for the exemption.

(3) You receive from the owner or operator of the unit a copy of the federally enforceable permit.

(4) The owner or operator of the unit keeps daily records of the amount of municipal solid waste combusted.

(b) *Small power production units.* Units are exempt from your State plan if four requirements are met:

(1) The unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) The unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity.

(3) You are notified by the owner or operator that the unit qualifies for the exemption.

(4) You receive documentation from the owner or operator that the unit qualifies for the exemption.

(c) *Cogeneration units.* Units are exempt from your State plan if four requirements are met:

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You are notified by the owner or operator that the unit qualifies for the exemption.

(4) You receive documentation from the owner or operator that the unit qualifies for the exemption.

(d) *Municipal waste combustion units that combust only tires.* Units are exempt from your State plan if three requirements are met:

(1) The municipal waste combustion unit combusts a single-item waste stream of tires and no other municipal waste (the unit can co-fire coal, fuel oil, natural gas, or other nonmunicipal solid waste).

(2) You are notified by the owner or operator that the unit qualifies for the exemption.

(3) You receive documentation from the owner or operator that the unit qualifies for the exemption.

(e) *Hazardous waste combustion units.* Units are exempt from your State plan if the units have received a permit under section 3005 of the Solid Waste Disposal Act.

(f) *Materials recovery units.* Units are exempt from your State plan if the units combust waste mainly to recover metals. Primary and secondary smelters may qualify for the exemption.

(g) *Co-fired units.* Units are exempt from your State plan if four requirements are met:

(1) The unit has a federally enforceable permit limiting municipal solid waste combustion to 30 percent of the total fuel input by weight.

(2) You are notified by the owner or operator that the unit qualifies for the exemption.

(3) You receive from the owner or operator of the unit a copy of the federally enforceable permit.

(4) The owner or operator records the weights, each quarter, of municipal solid waste and of all other fuels combusted.

(h) *Plastics/rubber recycling units.* Units are exempt from your State plan if four requirements are met:

(1) The pyrolysis/combustion unit is an integrated part of a plastics/rubber recycling unit as defined under ''Definitions'' (§ 60.1940).

(2) The owner or operator of the unit records the weight, each quarter, of plastics, rubber, and rubber tires processed.

(3) The owner or operator of the unit records the weight, each quarter, of feed stocks produced and marketed from chemical plants and petroleum refineries.

(4) The owner or operator of the unit keeps the name and address of the purchaser of the feed stocks.

(i) *Units that combust fuels made from products of plastics/rubber recycling plants.* Units are exempt from your State plan if two requirements are met:

(1) The unit combusts gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feed stocks produced by plastics/rubber recycling units.

(2) The unit does not combust any other municipal solid waste.

(j) *Cement kilns.* Cement kilns that combust municipal solid waste are exempt from your State plan.

(k) *Air curtain incinerators.* If an air curtain incinerator (see § 60.1940 for definition) combusts 100 percent yard waste, then those units must only meet the requirements under ''Model Rule—Air Curtain Incinerators That Burn 100 Percent Yard Waste'' (§§ 60.1910 through 60.1930).

§ 60.1560 Can an affected municipal waste combustion unit reduce its capacity to less than 35 tons per day rather than comply with my State plan?

(a) Yes, an owner or operator of an affected municipal waste combustion unit may choose to reduce, by your final compliance date, the maximum combustion capacity of the unit to less than 35 tons per day of municipal solid waste rather than comply with your State plan. They must submit a final control plan and the notifications of achievement of increments of progress as specified in § 60.1610.

(b) The final control plan must, at a minimum, include two items:

(1) A description of the physical changes that will be made to accomplish the reduction.

(2) Calculations of the current maximum combustion capacity and the planned maximum combustion capacity after the reduction. Use the equations specified under § 60.1935(d) and (e) to calculate the combustion capacity of a municipal waste combustion unit.

(c) A permit restriction or a change in the method of operation does not qualify as a reduction in capacity. Use the equations specified under § 60.1935(d) and (e) to calculate the combustion capacity of a municipal waste combustion unit.

§ 60.1565 What subcategories of small municipal waste combustion units must I include in my State plan?

This subpart specifies different requirements for different subcategories of municipal waste combustion units. You must use those same two subcategories in your State plan. Those two subcategories are based on the aggregate capacity of the municipal waste combustion plant as follows:

(a) *Class I units.* Class I units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. (*See* the definition of ''municipal waste combustion plant capacity'' in §60.1940 for specification of which units at a plant are included in the aggregate capacity calculation.)

(b) *Class II units.* Class II units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. (*See* the definition of ''municipal waste combustion plant capacity'' in §60.1940 for specification of which units at a plant are included in the aggregate capacity calculation.)

USE OF MODEL RULE

§60.1570 What is the "model rule" in this subpart?

(a) The model rule is the portion of the emission guidelines (§§60.1585 through 60.1905) that addresses the regulatory requirements applicable to small municipal waste combustion units. The model rule provides the requirements in a regulation format.

(b) In the model rule, ''you'' means the owner or operator of a small municipal waste combustion unit.

§60.1575 How does the model rule relate to the required elements of my State plan?

The model rule may be used to satisfy the State plan requirements specified in §60.1515(a)(4) and (5). Alternative language may be used in your State plan, but only if you can demonstrate that the alternative language is as protective as the model rule.

§60.1580 What are the principal components of the model rule?

The model rule contains five major components:

(a) Increments of progress toward compliance.

(b) Good combustion practices:

(1) Operator training.

(2) Operator certification.

(3) Operating requirements.

(c) Emission limits.

(d) Monitoring and stack testing.

(e) Recordkeeping and reporting.

MODEL RULE—INCREMENTS OF PROGRESS

§60.1585 What are my requirements for meeting increments of progress and achieving final compliance?

(a) *Class I units.* If you plan to achieve compliance more than 1 year following the effective date of State plan approval and a permit modification is not required, or more than 1 year following the date of issuance of a revised construction or operation permit if a permit modification is required, you must meet five increments of progress:

(1) Submit a final control plan.

(2) Submit a notification of retrofit contract award.

(3) Initiate onsite construction.

(4) Complete onsite construction.

(5) Achieve final compliance.

(b) *Class II units.* If you plan to achieve compliance more than 1 year following the effective date of State plan approval and a permit modification is not required, or more than 1 year following the date of issuance of a revised construction or operation permit if a permit modification is required, you must meet two increments of progress:

(1) Submit a final control plan.

(2) Achieve final compliance.

§60.1590 When must I complete each increment of progress?

Table 1 of this subpart specifies compliance dates for each of the increments of progress for Class I and II units. (*See* §60.1940 for definitions of classes.)

§60.1595 What must I include in the notifications of achievement of my increments of progress?

Your notification of achievement of increments of progress must include three items:

(a) Notification that the increment of progress has been achieved.

(b) Any items required to be submitted with the increment of progress (§§ 60.1610 through 60.1630).

(c) The notification must be signed by the owner or operator of the municipal waste combustion unit.

§ 60.1600 When must I submit the notifications of achievement of increments of progress?

Notifications of the achievement of increments of progress must be postmarked no later than 10 days after the compliance date for the increment.

§ 60.1605 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the specified date in Table 1 of this subpart for achieving that increment of progress. The notification must inform the Administrator that you did not meet the increment. You must include in the notification an explanation of why the increment of progress was not met and your plan for meeting the increment as expeditiously as possible. You must continue to submit reports each subsequent month until the increment of progress is met.

§ 60.1610 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must complete two items:

(a) Submit the final control plan, including a description of the devices for air pollution control and process changes that you will use to comply with the emission limits and other requirements of this subpart.

(b) You must maintain an onsite copy of the final control plan.

§ 60.1615 How do I comply with the increment of progress for awarding contracts?

You must submit a signed copy of the contracts awarded to initiate onsite construction, initiate onsite installation of emission control equipment, and incorporate process changes. Submit the copy of the contracts with the notification that the increment of progress has been achieved. You do not need to include documents incorporated by reference or the attachments to the contracts.

§ 60.1620 How do I comply with the increment of progress for initiating onsite construction?

You must initiate onsite construction and installation of emission control equipment and initiate the process changes outlined in the final control plan.

§ 60.1625 How do I comply with the increment of progress for completing onsite construction?

You must complete onsite construction and installation of emission control equipment and complete process changes outlined in the final control plan.

§ 60.1630 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete two items:

(a) Complete all process changes and complete retrofit construction as specified in the final control plan.

(b) Connect the air pollution control equipment with the municipal waste combustion unit identified in the final control plan and complete process changes to the municipal waste combustion unit so that if the affected municipal waste combustion unit is brought online, all necessary process changes and air pollution control equipment are operating as designed.

§ 60.1635 What must I do if I close my municipal waste combustion unit and then restart my municipal waste combustion unit?

(a) If you close your municipal waste combustion unit but will reopen it prior to the final compliance date in your State plan, you must meet the increments of progress specified in § 60.1585.

(b) If you close your municipal waste combustion unit but will restart it after your final compliance date, you must complete emission control retrofit and meet the emission limits and good combustion practices on the date your municipal waste combustion unit restarts operation.

§60.1640 What must I do if I plan to permanently close my municipal waste combustion unit and not restart it?

(a) If you plan to close your municipal waste combustion unit rather than comply with the State plan, you must submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

(b) If the closure date is later than 1 year after the effective date of State plan approval, you must enter into a legally binding closure agreement with the Administrator by the date your final control plan is due. The agreement must specify the date by which operation will cease.

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATOR TRAINING

§60.1645 What types of training must I do?

There are two types of required training:

(a) Training of operators of municipal waste combustion units using the EPA or a State-approved training course.

(b) Training of plant personnel using a plant-specific training course.

§60.1650 Who must complete the operator training course? By when?

(a) Three types of employees must complete the EPA or State-approved operator training course:

(1) Chief facility operators.

(2) Shift supervisors.

(3) Control room operators.

(b) Those employees must complete the operator training course by the later of three dates:

(1) One year after the effective date of State plan approval.

(2) Six months after your municipal waste combustion unit starts up.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

(c) The requirement in paragraph (a) of this section does not apply to chief facility operators, shift supervisors, and control room operators who have obtained full certification from the American Society of Mechanical Engineers on or before the effective date of State plan approval.

(d) You may request that the EPA Administrator waive the requirement in paragraph (a) of this section for chief facility operators, shift supervisors, and control room operators who have obtained provisional certification from the American Society of Mechanical Engineers on or before the effective date of State plan approval.

§60.1655 Who must complete the plant-specific training course?

All employees with responsibilities that affect how a municipal waste combustion unit operates must complete the plant-specific training course. Include at least six types of employees:

(a) Chief facility operators.

(b) Shift supervisors.

(c) Control room operators.

(d) Ash handlers.

(e) Maintenance personnel.

(f) Crane or load handlers.

§60.1660 What plant-specific training must I provide?

For plant-specific training, you must do four things:

(a) For training at a particular plant, develop a specific operating manual for that plant by the later of two dates:

(1) Six months after your municipal waste combustion unit starts up.

(2) One year after the effective date of State plan approval.

(b) Establish a program to review the plant-specific operating manual with people whose responsibilities affect the operation of your municipal waste combustion unit. Complete the initial review by the later of three dates:

(1) One year after the effective date of State plan approval.

(2) Six months after your municipal waste combustion unit starts up.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

(c) Update your manual annually.

(d) Review your manual with staff annually.

§ 60.1665 What information must I include in the plant-specific operating manual?

You must include 11 items in the operating manual for your plant:

(a) A summary of all applicable requirements in this subpart.

(b) A description of the basic combustion principles that apply to municipal waste combustion units.

(c) Procedures for receiving, handling, and feeding municipal solid waste.

(d) Procedures to be followed during periods of startup, shutdown, and malfunction of the municipal waste combustion unit.

(e) Procedures for maintaining a proper level of combustion air supply.

(f) Procedures for operating the municipal waste combustion unit in compliance with the requirements contained in this subpart.

(g) Procedures for responding to periodic upset or off-specification conditions.

(h) Procedures for minimizing carryover of particulate matter.

(i) Procedures for handling ash.

(j) Procedures for monitoring emissions from the municipal waste combustion unit.

(k) Procedures for recordkeeping and reporting.

§ 60.1670 Where must I keep the plant-specific operating manual?

You must keep your operating manual in an easily accessible location at your plant. It must be available for review or inspection by all employees who must review it and by the Administrator.

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATOR CERTIFICATION

§ 60.1675 What types of operator certification must the chief facility operator and shift supervisor obtain and by when must they obtain it?

(a) Each chief facility operator and shift supervisor must obtain and keep a current provisional operator certification from the American Society of Mechanical Engineers (QRO–1–1994) (incorporated by reference in § 60.17(h)(1)) or a current provisional operator certification from your State certification program.

(b) Each chief facility operator and shift supervisor must obtain a provisional certification by the later of three dates:

(1) For Class I units, 12 months after the effective date of State plan approval. For Class II units, 18 months after the effective date of State plan approval.

(2) Six months after the municipal waste combustion unit starts up.

(3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

(c) Each chief facility operator and shift supervisor must take one of three actions:

(1) Obtain a full certification from the American Society of Mechanical Engineers or a State certification program in your State.

(2) Schedule a full certification exam with the American Society of Mechanical Engineers (QRO–1–1994) (incorporated by reference in § 60.17(h)(1)).

(3) Schedule a full certification exam with your State certification program.

(d) The chief facility operator and shift supervisor must obtain the full certification or be scheduled to take the certification exam by the later of the following dates:

(1) For Class I units, 12 months after the effective date of State plan approval. For Class II units, 18 months after the effective date of State plan approval.

(2) Six months after the municipal waste combustion unit starts up.

(3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

§ 60.1680 After the required date for operator certification, who may operate the municipal waste combustion unit?

After the required date for full or provisional certification, you must not operate your municipal waste combustion unit unless one of four employees is on duty:

(a) A fully certified chief facility operator.

(b) A provisionally certified chief facility operator who is scheduled to take the full certification exam.

(c) A fully certified shift supervisor.

(d) A provisionally certified shift supervisor who is scheduled to take the full certification exam.

§ 60.1685 What if all the certified operators must be temporarily offsite?

If the certified chief facility operator and certified shift supervisor both are unavailable, a provisionally certified control room operator at the municipal waste combustion unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, you must meet one of three criteria:

(a) When the certified chief facility operator and certified shift supervisor are both offsite for 12 hours or less and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator.

(b) When the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must record the periods when the certified chief facility operator and certified shift supervisor are offsite and include the information in the annual report as specified under § 60.1885(l).

(c) When the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must take two actions:

(1) Notify the Administrator in writing. In the notice, state what caused the absence and what you are doing to ensure that a certified chief facility operator or certified shift supervisor is onsite.

(2) Submit a status report and corrective action summary to the Administrator every 4 weeks following the initial notification. If the Administrator notifies you that your status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Administrator withdraws the disapproval, municipal waste combustion unit operation may continue.

MODEL RULE—GOOD COMBUSTION PRACTICES: OPERATING REQUIREMENTS

§ 60.1690 What are the operating practice requirements for my municipal waste combustion unit?

(a) You must not operate your municipal waste combustion unit at loads greater than 110 percent of the maximum demonstrated load of the municipal waste combustion unit (4-hour block average), as specified under ''Definitions'' (§ 60.1940).

(b) You must not operate your municipal waste combustion unit so that the temperature at the inlet of the particulate matter control device exceeds 17°C above the maximum demonstrated temperature of the particulate matter control device (4-hour block average), as specified under ''Definitions'' (§ 60.1940).

(c) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must maintain an 8-hour block average carbon feed rate at or above the highest average level established during the most recent dioxins/furans or mercury test.

(d) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must evaluate total carbon usage for each calendar quarter. The total amount of carbon purchased and delivered to your municipal waste combustion plant must be at or above the required quarterly usage of carbon. At your option, you may choose to evaluate required quarterly carbon usage on a municipal waste combustion unit basis for each individual municipal waste combustion unit at your plant. Calculate the required quarterly usage of carbon using equation 4 or 5 in § 60.1935(f).

(e) Your municipal waste combustion unit is exempt from limits on load level, temperature at the inlet of the particulate matter control device, and carbon feed rate during any of five situations:

(1) During your annual tests for dioxins/furans.

(2) During your annual mercury tests (for carbon feed rate requirements only).

(3) During the 2 weeks preceding your annual tests for dioxins/furans.

(4) During the 2 weeks preceding your annual mercury tests (for carbon feed rate requirements only).

(5) Whenever the Administrator or delegated State authority permits you to do any of five activities:

(i) Evaluate system performance.

(ii) Test new technology or control technologies.

(iii) Perform diagnostic testing.

(iv) Perform other activities to improve the performance of your municipal waste combustion unit.

(v) Perform other activities to advance the state of the art for emission controls for your municipal waste combustion unit.

§ 60.1695 What happens to the operating requirements during periods of startup, shutdown, and malfunction?

(a) The operating requirements of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

MODEL RULE—EMISSION LIMITS

§ 60.1700 What pollutants are regulated by this subpart?

Eleven pollutants, in four groupings, are regulated:

(a) *Organics*. Dioxins/furans.

(b) *Metals*.

(1) Cadmium.

(2) Lead.

(3) Mercury.

(4) Opacity.

(5) Particulate matter.

(c) *Acid gases*.

(1) Hydrogen chloride.

(2) Nitrogen oxides.

(3) Sulfur dioxide.

(d) *Other*.

(1) Carbon monoxide.

(2) Fugitive ash.

§ 60.1705 What emission limits must I meet? By when?

(a) After the date the initial stack test and continuous emission monitoring system evaluation are required or completed (whichever is earlier), you must meet the applicable emission limits specified in the four tables of this subpart:

(1) For Class I units, see Tables 2 and 3 of this subpart.

(2) For Class II units, see Table 4 of this subpart.

(3) For carbon monoxide emission limits for both classes of units, see Table 5 of this subpart.

(b) If your Class I municipal waste combustion unit began construction, reconstruction, or modification after June 26, 1987, then you must comply with the dioxins/furans and mercury emission limits specified in Table 2 of this subpart as applicable by the later of the following two dates:

(1) One year after the effective date of State plan approval.

(2) One year after the issuance of a revised construction or operating permit, if a permit modification is required. Final compliance with the dioxins/furans limits must be achieved no later than December 6, 2005, even if the date 1 year after the issuance of a revised construction or operation permit is later than December 6, 2005.

§ 60.1710 What happens to the emission limits during periods of startup, shutdown, and malfunction?

(a) The emission limits of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

(c) A maximum of 3 hours of test data can be dismissed from compliance calculations during periods of startup, shutdown, or malfunction.

(d) During startup, shutdown, or malfunction periods longer than 3 hours, emissions data cannot be discarded from compliance calculations and all provisions under § 60.11(d) apply.

MODEL RULE—CONTINUOUS EMISSION MONITORING

§ 60.1715 What types of continuous emission monitoring must I perform?

To continuously monitor emissions, you must perform four tasks:

(a) Install continuous emission monitoring systems for certain gaseous pollutants.

(b) Make sure your continuous emission monitoring systems are operating correctly.

(c) Make sure you obtain the minimum amount of monitoring data.

(d) Install a continuous opacity monitoring system.

§ 60.1720 What continuous emission monitoring systems must I install for gaseous pollutants?

(a) You must install, calibrate, maintain, and operate continuous emission monitoring systems for oxygen (or carbon dioxide), sulfur dioxide, and carbon monoxide. If you operate a Class I municipal waste combustion unit, also install, calibrate, maintain, and operate a continuous emission monitoring system for nitrogen oxides. Install the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and oxygen (or carbon dioxide) at the outlet of the air pollution control device.

(b) You must install, evaluate, and operate each continuous emission monitoring system according to the ‘‘Monitoring Requirements’’ in § 60.13.

(c) You must monitor the oxygen (or carbon dioxide) concentration at each location where you monitor sulfur dioxide and carbon monoxide. Additionally, if you operate a Class I municipal waste combustion unit, you must also monitor the oxygen (or carbon dioxide) concentration at the location where you monitor nitrogen oxides.

(d) You may choose to monitor carbon dioxide instead of oxygen as a diluent gas. If you choose to monitor carbon dioxide, then an oxygen monitor is not required and you must follow the requirements in § 60.1745.

(e) If you choose to demonstrate compliance by monitoring the percent reduction of sulfur dioxide, you must also install continuous emission monitoring systems for sulfur dioxide and oxygen (or carbon dioxide) at the inlet of the air pollution control device.

(f) If you prefer to use an alternative sulfur dioxide monitoring method, such as parametric monitoring, or cannot monitor emissions at the inlet of the air pollution control device to determine percent reduction, you can apply to the Administrator for approval to use an alternative monitoring method under § 60.13(i).

§ 60.1725 How are the data from the continuous emission monitoring systems used?

You must use data from the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and carbon monoxide to demonstrate continuous compliance with the applicable emission limits specified in Tables 2, 3, 4, and 5 of this subpart. To demonstrate compliance for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, see § 60.1780.

§ 60.1730 How do I make sure my continuous emission monitoring systems are operating correctly?

(a) Conduct initial, daily, quarterly, and annual evaluations of your continuous emission monitoring systems that measure oxygen (or carbon dioxide), sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide.

(b) Complete your initial evaluation of the continuous emission monitoring systems within 180 days after your final compliance date.

(c) For initial and annual evaluations, collect data concurrently (or within 30 to 60 minutes) using your oxygen (or carbon dioxide) continuous emission monitoring system, your sulfur dioxide, nitrogen oxides, or carbon monoxide continuous emission monitoring systems, as appropriate, and the appropriate test methods specified in Table 6 of this subpart. Collect the data during each initial and annual evaluation of your continuous emission monitoring systems following the applicable performance specifications in appendix B of this part. Table 7 of this subpart shows the performance specifications that apply to each continuous emission monitoring system.

(d) Follow the quality assurance procedures in Procedure 1 of appendix F of this part for each continuous emission monitoring system. The procedures include daily calibration drift and quarterly accuracy determinations.

§ 60.1735 Am I exempt from any appendix B or appendix F requirements to evaluate continuous emission monitoring systems?

Yes, the accuracy tests for your sulfur dioxide continuous emission monitoring system require you to also evaluate your oxygen (or carbon dioxide) continuous emission monitoring system. Therefore, your oxygen (or carbon dioxide) continuous emission monitoring system is exempt from two requirements:

(a) Section 2.3 of Performance Specification 3 in appendix B of this part (relative accuracy requirement).

(b) Section 5.1.1 of appendix F of this part (relative accuracy test audit).

§ 60.1740 What is my schedule for evaluating continuous emission monitoring systems?

(a) Conduct annual evaluations of your continuous emission monitoring systems no more than 13 months after the previous evaluation was conducted.

(b) Evaluate your continuous emission monitoring systems daily and quarterly as specified in appendix F of this part.

§ 60.1745 What must I do if I choose to monitor carbon dioxide instead of oxygen as a diluent gas?

You must establish the relationship between oxygen and carbon dioxide during the initial evaluation of your continuous emission monitoring systems. You may reestablish the relationship during annual evaluations. To establish the relationship use three procedures:

(a) Use EPA Reference Method 3A or 3B in appendix A of this part to determine oxygen concentration at the location of your carbon dioxide monitor.

(b) Conduct at least three test runs for oxygen. Make sure each test run represents a 1-hour average and that sampling continues for at least 30 minutes in each hour.

(c) Use the fuel-factor equation in EPA Reference Method 3B in appendix A of this part to determine the relationship between oxygen and carbon dioxide.

§ 60.1750 What is the minimum amount of monitoring data I must collect with my continuous emission monitoring systems and is the data collection requirement enforceable?

(a) Where continuous emission monitoring systems are required, obtain 1-hour arithmetic averages. Make sure the averages for sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide are in parts per million by dry volume at 7 percent oxygen (or the equivalent carbon dioxide level). Use the 1-hour averages of oxygen (or carbon dioxide) data from your continuous emission monitoring system to determine the actual oxygen (or carbon dioxide) level and to calculate emissions at 7 percent oxygen (or the equivalent carbon dioxide level).

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average. Section 60.13(e)(2) requires your continuous emission monitoring systems to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-minute period.

(c) Obtain valid 1-hour averages for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement regardless of the emission level monitored, and you must notify the Administrator according to § 60.1885(e).

(e) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you must still use all valid data from the continuous emission monitoring systems in calculating emission concentrations and percent reductions in accordance with § 60.1755.

§60.1755 How do I convert my 1-hour arithmetic averages into appropriate averaging times and units?

(a) Use the equation in §60.1935(a) to calculate emissions at 7 percent oxygen.

(b) Use EPA Reference Method 19 in appendix A of this part, section 4.3, to calculate the daily geometric average concentrations of sulfur dioxide emissions. If you are monitoring the percent reduction of sulfur dioxide, use EPA Reference Method 19 in appendix A of this part, section 5.4, to determine the daily geometric average percent reduction of potential sulfur dioxide emissions.

(c) If you operate a Class I municipal waste combustion unit, use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the daily arithmetic average for concentrations of nitrogen oxides.

(d) Use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the 4-hour or 24-hour daily block averages (as applicable) for concentrations of carbon monoxide.

§60.1760 What is required for my continuous opacity monitoring system and how are the data used?

(a) Install, calibrate, maintain, and operate a continuous opacity monitoring system.

(b) Install, evaluate, and operate each continuous opacity monitoring system according to §60.13.

(c) Complete an initial evaluation of your continuous opacity monitoring system according to Performance Specification 1 in appendix B of this part. Complete the evaluation by 180 days after your final compliance date.

(d) Complete each annual evaluation of your continuous opacity monitoring system no more than 13 months after the previous evaluation.

(e) Use tests conducted according to EPA Reference Method 9 in appendix A of this part, as specified in §60.1790, to determine compliance with the opacity limit in Table 2 or 4 of this subpart. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the opacity limit.

§60.1765 What additional requirements must I meet for the operation of my continuous emission monitoring systems and continuous opacity monitoring system?

Use the required span values and applicable performance specifications in Table 8 of this subpart.

§60.1770 What must I do if any of my continuous emission monitoring systems are temporarily unavailable to meet the data collection requirements?

Refer to Table 8 of this subpart. It shows alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep you from collecting the minimum amount of data.

MODEL RULE—STACK TESTING

§60.1775 What types of stack tests must I conduct?

Conduct initial and annual stack tests to measure the emission levels of dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

§60.1780 How are the stack test data used?

You must use results of stack tests for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash to demonstrate compliance with the applicable emission limits in Tables 2 and 4 of this subpart. To demonstrate compliance for carbon monoxide, nitrogen oxides, and sulfur dioxide, see §60.1725.

§60.1785 What schedule must I follow for the stack testing?

(a) Conduct initial stack tests for the pollutants listed in §60.1775 by 180 days after your final compliance date.

(b) Conduct annual stack tests for the same pollutants after the initial stack test. Conduct each annual stack test no later than 13 months after the previous stack test.

§60.1790 What test methods must I use to stack test?

(a) Follow Table 8 of this subpart to establish the sampling location and to determine pollutant concentrations, number of traverse points, individual test methods, and other specific testing requirements for the different pollutants.

(b) Make sure that stack tests for all the pollutants consist of at least three test runs, as specified in § 60.8. Use the average of the pollutant emission concentrations from the three test runs to determine compliance with the applicable emission limits in Tables 2 and 4 of this subpart.

(c) Obtain an oxygen (or carbon dioxide) measurement at the same time as your pollutant measurements to determine diluent gas levels, as specified in § 60.1720.

(d) Use the equations in § 60.1935(a) to calculate emission levels at 7 percent oxygen (or an equivalent carbon dioxide basis), the percent reduction in potential hydrogen chloride emissions, and the reduction efficiency for mercury emissions. See the individual test methods in Table 6 of this subpart for other required equations.

(e) You can apply to the Administrator for approval under § 60.8(b) to use a reference method with minor changes in methodology, use an equivalent method, use an alternative method the results of which the Administrator has determined are adequate for demonstrating compliance, waive the requirement for a performance test because you have demonstrated by other means that you are in compliance, or use a shorter sampling time or smaller sampling volume.

§ 60.1795 May I conduct stack testing less often?

(a) You may test less often if you own or operate a Class II municipal waste combustion unit and if all stack tests for a given pollutant over 3 consecutive years show you comply with the emission limit. In that case, you are not required to conduct a stack test for that pollutant for the next 2 years. However, you must conduct another stack test within 36 months of the anniversary date of the third consecutive stack test that shows you comply with the emission limit. Thereafter, you must perform stack tests every 3rd year but no later than 36 months following the previous stack tests. If a stack test shows noncompliance with an emission limit, you must conduct annual stack tests for that pollutant until all stack tests over 3 consecutive years show compliance with the emission limit for that pollutant. The provision applies to all pollutants subject to stack testing requirements: dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

(b) You can test less often for dioxins/furans emissions if you own or operate a municipal waste combustion plant that meets two conditions. First, you have multiple municipal waste combustion units onsite that are subject to this subpart. Second, all those municipal waste combustion units have demonstrated levels of dioxins/furans emissions less than or equal to 15 nanograms per dry standard cubic meter (total mass) for Class I units, or 30 nanograms per dry standard cubic meter (total mass) for Class II units, for 2 consecutive years. In that case, you may choose to conduct annual stack tests on only one municipal waste combustion unit per year at your plant. The provision only applies to stack testing for dioxins/furans emissions.

(1) Conduct the stack test no more than 13 months following a stack test on any municipal waste combustion unit subject to this subpart at your plant. Each year, test a different municipal waste combustion unit subject to this subpart and test all municipal waste combustion units subject to this subpart in a sequence that you determine. Once you determine a testing sequence, it must not be changed without approval by the Administrator.

(2) If each annual stack test shows levels of dioxins/furans emissions less than or equal to 15 nanograms per dry standard cubic meter (total mass) for Class I units, or 30 nanograms per dry standard cubic meter (total mass) for Class II units, you may continue stack tests on only one municipal waste combustion unit subject to this subpart per year.

(3) If any annual stack test indicates levels of dioxins/furans emissions greater than 15 nanograms per dry standard cubic meter (total mass) for Class I units, or 30 nanograms per dry standard cubic meter (total mass) for

Class II units, conduct subsequent annual stack tests on all municipal waste combustion units subject to this subpart at your plant. You may return to testing one municipal waste combustion unit subject to this subpart per year if you can demonstrate dioxins/furans emissions levels less than or equal to 15 nanograms per dry standard cubic meter (total mass) for Class I units, or 30 nanograms per dry standard cubic meter (total mass) for Class II units, for all municipal waste combustion units at your plant subject to this subpart for 2 consecutive years.

§ 60.1800 May I deviate from the 13-month testing schedule if unforeseen circumstances arise?

You may not deviate from the 13-month testing schedules specified in §§ 60.1785(b) and 60.1795(b)(1) unless you apply to the Administrator for an alternative schedule, and the Administrator approves your request for alternate scheduling prior to the date on which you would otherwise have been required to conduct the next stack test.

MODEL RULE—OTHER MONITORING REQUIREMENTS

§ 60.1805 Must I meet other requirements for continuous monitoring?

You must also monitor three operating parameters:

(a) Load level of each municipal waste combustion unit.

(b) Temperature of flue gases at the inlet of your particulate matter air pollution control device.

(c) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

§ 60.1810 How do I monitor the load of my municipal waste combustion unit?

(a) If your municipal waste combustion unit generates steam, you must install, calibrate, maintain, and operate a steam flowmeter or a feed water flowmeter and meet five requirements:

(1) Continuously measure and record the measurements of steam (or feed water) in kilograms (or pounds) per hour.

(2) Calculate your steam (or feed water) flow in 4-hour block averages.

(3) Calculate the steam (or feed water) flow rate using the method in ‘‘American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964 (R1991),’’ section 4 (incorporated by reference in § 60.17(h)(2)).

(4) Design, construct, install, calibrate, and use nozzles or orifices for flow rate measurements, using the recommendations in ‘‘American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters,’’ 6th Edition (1971), chapter 4 (incorporated by reference in § 60.17(h)(3)).

(5) Before each dioxins/furans stack test, or at least once a year, calibrate all signal conversion elements associated with steam (or feed water) flow measurements according to the manufacturer instructions.

(b) If your municipal waste combustion units do not generate steam, or, if your municipal waste combustion units have shared steam systems and steam load cannot be estimated per unit, you must determine, to the satisfaction of the Administrator, one or more operating parameters that can be used to continuously estimate load level (for example, the feed rate of municipal solid waste or refuse-derived fuel). You must continuously monitor the selected parameters.

§ 60.1815 How do I monitor the temperature of flue gases at the inlet of my particulate matter control device?

You must install, calibrate, maintain, and operate a device to continuously measure the temperature of the flue gas stream at the inlet of each particulate matter control device.

§ 60.1820 How do I monitor the injection rate of activated carbon?

If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must meet three requirements:

(a) Select a carbon injection system operating parameter that can be used to calculate carbon feed rate (for example, screw feeder speed).

(b) During each dioxins/furans and mercury stack test, determine the average carbon feed rate in kilograms (or pounds) per hour. Also, determine the average operating parameter level that correlates to the carbon feed rate. Establish a relationship between the operating parameter and the carbon feed rate in order to calculate the carbon feed rate based on the operating parameter level.

(c) Continuously monitor the selected operating parameter during all periods when the municipal waste combustion unit is operating and combusting waste and calculate the 8-hour block average carbon feed rate in kilograms (or pounds) per hour, based on the selected operating parameter. When calculating the 8-hour block average, do two things:

(1) Exclude hours when the municipal waste combustion unit is not operating.

(2) Include hours when the municipal waste combustion unit is operating but the carbon feed system is not working correctly.

§ 60.1825 What is the minimum amount of monitoring data I must collect with my continuous parameter monitoring systems and is the data collection requirement enforceable?

(a) Where continuous parameter monitoring systems are used, obtain 1-hour arithmetic averages for three parameters:

(1) Load level of the municipal waste combustion unit.

(2) Temperature of the flue gases at the inlet of your particulate matter control device.

(3) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

(b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average.

(c) Obtain valid 1-hour averages for at least 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.

(d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement, and you must notify the Administrator according to § 60.1885(e).

MODEL RULE—RECORDKEEPING

§ 60.1830 What records must I keep?

You must keep four types of records:

(a) Operator training and certification.

(b) Stack tests.

(c) Continuously monitored pollutants and parameters.

(d) Carbon feed rate.

§ 60.1835 Where must I keep my records and for how long?

(a) Keep all records onsite in paper copy or electronic format unless the Administrator approves another format.

(b) Keep all records on each municipal waste combustion unit for at least 5 years.

(c) Make all records available for submittal to the Administrator, or for onsite review by an inspector.

§ 60.1840 What records must I keep for operator training and certification?

You must keep records of six items:

(a) *Records of provisional certifications.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of the initial provisional certifications.

(3) Documentation showing current provisional certifications.

(b) *Records of full certifications.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of initial and renewal full certifications.

(3) Documentation showing current full certifications.

(c) *Records showing completion of the operator training course.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who have completed the EPA or State municipal waste combustion operator training course.

(2) Dates of completion of the operator training course.

(3) Documentation showing completion of operator training course.

(d) *Records of reviews for plant-specific operating manuals.* Include three items:

(1) Names of persons who have reviewed the operating manual.

(2) Date of the initial review.

(3) Dates of subsequent annual reviews.

(e) *Records of when a certified operator is temporarily offsite.* Include two main items:

(1) If the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, record the dates that the certified chief facility operator and certified shift supervisor were offsite.

(2) When all certified chief facility operators and certified shift supervisors are offsite for more than 2 weeks and no other certified operator is onsite, keep records of four items:

(i) Your notice that all certified persons are offsite.

(ii) The conditions that cause those people to be offsite.

(iii) The corrective actions you are taking to ensure a certified chief facility operator or certified shift supervisor is onsite.

(iv) Copies of the written reports submitted every 4 weeks that summarize the actions taken to ensure that a certified chief facility operator or certified shift supervisor will be onsite.

(f) *Records of calendar dates.* Include the calendar date on each record.

§60.1845 What records must I keep for stack tests?

For stack tests required under §60.1775, you must keep records of four items:

(a) The results of the stack tests for eight pollutants or parameters recorded in the appropriate units of measure specified in Table 2 or 4 of this subpart:

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(b) Test reports including supporting calculations that document the results of all stack tests.

(c) The maximum demonstrated load of your municipal waste combustion units and maximum temperature at the inlet of your particulate matter control device during all stack tests for dioxins/furans emissions.

(d) The calendar date of each record.

§60.1850 What records must I keep for continuously monitored pollutants or parameters?

You must keep records of eight items.

(a) *Records of monitoring data.* Document six parameters measured using continuous monitoring systems:

(1) All 6-minute average levels of opacity.

(2) All 1-hour average concentrations of sulfur dioxide emissions.

(3) For Class I municipal waste combustion units only, all 1-hour average concentrations of nitrogen oxides emissions.

(4) All 1-hour average concentrations of carbon monoxide emissions.

(5) All 1-hour average load levels of your municipal waste combustion unit.

(6) All 1-hour average flue gas temperatures at the inlet of the particulate matter control device.

(b) *Records of average concentrations and percent reductions.* Document five parameters:

(1) All 24-hour daily block geometric average concentrations of sulfur dioxide emissions or average percent reductions of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, all 24-hour daily arithmetic average concentrations of nitrogen oxides emissions.

(3) All 4-hour block or 24-hour daily block arithmetic average concentrations of carbon monoxide emissions.

(4) All 4-hour block arithmetic average load levels of your municipal waste combustion unit.

(5) All 4-hour block arithmetic average flue gas temperatures at the inlet of the particulate matter control device.

(c) *Records of exceedances.* Document three items:

(1) Calendar dates whenever any of the five pollutant or parameter levels recorded in paragraph (b) of this section or the opacity level recorded in paragraph (a)(1) of this section did not meet the emission limits or operating levels specified in this subpart.

(2) Reasons you exceeded the applicable emission limits or operating levels.

(3) Corrective actions you took, or are taking, to meet the emission limits or operating levels.

(d) *Records of minimum data.* Document three items:

(1) Calendar dates for which you did not collect the minimum amount of data required under §§ 60.1750 and 60.1825. Record those dates for five types of pollutants and parameters:

(i) Sulfur dioxide emissions.

(ii) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(iii) Carbon monoxide emissions.

(iv) Load levels of your municipal waste combustion unit.

(v) Temperatures of the flue gases at the inlet of the particulate matter control device.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took or are taking to obtain the required amount of data.

(e) *Records of exclusions.* Document each time you have excluded data from your calculation of averages for any of the following five pollutants or parameters and the reasons the data were excluded:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load levels of your municipal waste combustion unit.

(5) Temperatures of the flue gases at the inlet of the particulate matter control device.

(f) *Records of drift and accuracy.* Document the results of your daily drift tests and quarterly accuracy determinations according to Procedure 1 of appendix F of this part. Keep those records for the sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide continuous emissions monitoring systems.

(g) *Records of the relationship between oxygen and carbon dioxide.* If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, document the relationship between oxygen and carbon dioxide, as specified in § 60.1745.

(h) *Records of calendar dates.* Include the calendar date on each record.

§ 60.1855 What records must I keep for municipal waste combustion units that use activated carbon?

For municipal waste combustion units that use activated carbon to control dioxins/furans or mercury emissions, you must keep records of five items:

(a) *Records of average carbon feed rate.* Document five items:

(1) Average carbon feed rate in kilograms (or pounds) per hour during all stack tests for dioxins/furans and mercury emissions. Include supporting calculations in the records.

(2) For the operating parameter chosen to monitor carbon feed rate, average operating level during all stack tests for dioxins/furans and mercury emissions. Include supporting data that document the relationship between the operating parameter and the carbon feed rate.

(3) All 8-hour block average carbon feed rates in kilograms (or pounds) per hour calculated from the monitored operating parameter.

(4) Total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include supporting documentation.

(5) Required quarterly usage of carbon for the municipal waste combustion plant, calculated using equation 4 or 5 in § 60.1935(f). If you choose to evaluate required quarterly usage for

carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant. Include supporting calculations.

(b) *Records of low carbon feed rates.* Document three items:

(1) The calendar dates when the average carbon feed rate over an 8-hour block was less than the average carbon feed rates determined during the most recent stack test for dioxins/furans or mercury emissions (whichever has a higher feed rate).

(2) Reasons for the low carbon feed rates.

(3) Corrective actions you took or are taking to meet the 8-hour average carbon feed rate requirement.

(c) *Records of minimum carbon feed rate data.* Document three items:

(1) Calendar dates for which you did not collect the minimum amount of carbon feed rate data required under § 60.1825.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took or are taking to get the required amount of data.

(d) *Records of exclusions.* Document each time you have excluded data from your calculation of average carbon feed rates and the reasons the data were excluded.

(e) *Records of calendar dates.* Include the calendar date on each record.

MODEL RULE—REPORTING

§ 60.1860 What reports must I submit and in what form?

(a) Submit an initial report and annual reports, plus semiannual reports for any emission or parameter level that does not meet the limits specified in this subpart.

(b) Submit all reports on paper, postmarked on or before the submittal dates in §§ 60.1870, 60.1880, and 60.1895. If the Administrator agrees, you may submit electronic reports.

(c) Keep a copy of all reports required by §§ 60.1875, 60.1885, and 60.1900 onsite for 5 years.

§ 60.1865 What are the appropriate units of measurement for reporting my data?

See Tables 2, 3, 4 and 5 of this subpart for appropriate units of measurement.

§ 60.1870 When must I submit the initial report?

As specified in § 60.7(c), submit your initial report by 180 days after your final compliance date.

§ 60.1875 What must I include in my initial report?

You must include seven items:

(a) The emission levels measured on the date of the initial evaluation of your continuous emission monitoring systems for all of the following five pollutants or parameters as recorded in accordance with § 60.1850(b).

(1) The 24-hour daily geometric average concentration of sulfur dioxide emissions or the 24-hour daily geometric percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, the 24-hour daily arithmetic average concentration of nitrogen oxides emissions.

(3) The 4-hour block or 24-hour daily arithmetic average concentration of carbon monoxide emissions.

(4) The 4-hour block arithmetic average load level of your municipal waste combustion unit.

(5) The 4-hour block arithmetic average flue gas temperature at the inlet of the particulate matter control device.

(b) The results of the initial stack tests for eight pollutants or parameters (use appropriate units as specified in Table 2 or 4 of this subpart):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(c) The test report that documents the initial stack tests including supporting calculations.

(d) The initial performance evaluation of your continuous emissions monitoring systems. Use the applicable performance specifications in appendix B of this part in conducting the evaluation.

(e) The maximum demonstrated load of your municipal waste combustion unit and the maximum demonstrated temperature of the flue gases at the inlet of the particulate matter control device. Use values established during your initial stack test for dioxins/furans emissions and include supporting calculations.

(f) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the average carbon feed rates that you recorded during the initial stack tests for dioxins/furans and mercury emissions. Include supporting calculations as specified in § 60.1855(a)(1) and (2).

(g) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in § 60.1745.

§ 60.1880 When must I submit the annual report?

Submit the annual report no later than February 1 of each year that follows the calendar year in which you collected the data. If you have an operating permit for any unit under title V of the CAA, the permit may require you to submit semiannual reports. Parts 70 and 71 of this chapter contain program requirements for permits.

§ 60.1885 What must I include in my annual report?

Summarize data collected for all pollutants and parameters regulated under this subpart. Your summary must include twelve items:

(a) The results of the annual stack test, using appropriate units, for eight pollutants, as recorded under § 60.1845(a):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(b) A list of the highest average levels recorded, in the appropriate units. List those values for five pollutants or parameters:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device (4-hour block average).

(c) The highest 6-minute opacity level measured. Base the value on all 6-minute average opacity levels recorded by your continuous opacity monitoring system (§ 60.1850(a)(1)).

(d) For municipal waste combustion units that use activated carbon for controlling dioxins/furans or mercury emissions, include four records:

(1) The average carbon feed rates recorded during the most recent dioxins/furans and mercury stack tests.

(2) The lowest 8-hour block average carbon feed rate recorded during the year.

(3) The total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant.

(4) The required quarterly carbon usage of your municipal waste combustion plant calculated using equation 4 or 5 in § 60.1935(f). If you choose to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant.

(e) The total number of days that you did not obtain the minimum number of hours of data for six pollutants or parameters. Include the reasons you did not obtain the data and corrective actions that you have taken to obtain the data in the future. Include data on:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.

(6) Carbon feed rate.

(f) The number of hours you have excluded data from the calculation of average levels (include the reasons for excluding it). Include data for six pollutants or parameters:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.

(6) Carbon feed rate.

(g) A notice of your intent to begin a reduced stack testing schedule for dioxins/furans emissions during the following calendar year if you are eligible for alternative scheduling (§60.1795(a) or (b)).

(h) A notice of your intent to begin a reduced stack testing schedule for other pollutants during the following calendar year if you are eligible for alternative scheduling (§60.1795(a)).

(i) A summary of any emission or parameter level that did not meet the limits specified in this subpart.

(j) A summary of the data in paragraphs (a) through (d) of this section from the year preceding the reporting year which gives the Administrator a summary of the performance of the municipal waste combustion unit over a 2-year period.

(k) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in §60.1745.

(l) Documentation of periods when all certified chief facility operators and certified shift supervisors are offsite for more than 12 hours.

§60.1890 What must I do if I am out of compliance with the requirements of this subpart?

You must submit a semiannual report on any recorded emission or parameter level that does not meet the requirements specified in this subpart.

§60.1895 If a semiannual report is required, when must I submit it?

(a) For data collected during the first half of a calendar year, submit your semiannual report by August 1 of that year.

(b) For data you collected during the second half of the calendar year, submit your semiannual report by February 1 of the following year.

§60.1900 What must I include in the semiannual out-of-compliance reports?

You must include three items in the semiannual report:

(a) For any of the following six pollutants or parameters that exceeded the limits specified in this subpart, include the calendar date they exceeded the limits, the averaged and recorded data for that date, the reasons for exceeding the limits, and your corrective actions:

(1) Concentration or percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, concentration of nitrogen oxides emissions.

(3) Concentration of carbon monoxide emissions.

(4) Load level of your municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of your particulate matter air pollution control device.

(6) Average 6-minute opacity level. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the limit on opacity emissions.

(b) If the results of your annual stack tests (as recorded in §60.1845(a)) show emissions above the limits specified in Table 2 or 4 of this subpart as applicable for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, include a copy of the test report that documents the emission levels and your corrective actions.

(c) For municipal waste combustion units that apply activated carbon to control dioxins/furans or mercury emissions, include two items:

(1) Documentation of all dates when the 8-hour block average carbon feed rate (calculated from the carbon injection system operating parameter) is less than the highest carbon feed rate established during the most recent mercury and dioxins/furans stack test (as specified in § 60.1855(a)(1)). Include four items:

(i) Eight-hour average carbon feed rate.

(ii) Reasons for occurrences of low carbon feed rates.

(iii) The corrective actions you have taken to meet the carbon feed rate requirement.

(iv) The calendar date.

(2) Documentation of each quarter when total carbon purchased and delivered to the municipal waste combustion plant is less than the total required quarterly usage of carbon. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include five items:

(i) Amount of carbon purchased and delivered to the plant.

(ii) Required quarterly usage of carbon.

(iii) Reasons for not meeting the required quarterly usage of carbon.

(iv) The corrective actions you have taken to meet the required quarterly usage of carbon.

(v) The calendar date.

§ 60.1905 Can reporting dates be changed?

(a) If the Administrator agrees, you may change the semiannual or annual reporting dates.

(b) See § 60.19(c) for procedures to seek approval to change your reporting date.

MODEL RULE—AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE

§ 60.1910 What is an air curtain incinerator?

An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

§ 60.1915 What is yard waste?

Yard waste is grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(a) Construction, renovation, and demolition wastes that are exempt from the definition of ‘‘municipal solid waste’’ in § 60.1940.

(b) Clean wood that is exempt from the definition of ‘‘municipal solid waste’’ in § 60.1940.

§ 60.1920 What are the emission limits for air curtain incinerators that burn 100 percent yard waste?

If your air curtain incinerator combusts 100 percent yard waste, you must only meet the emission limits in this section.

(a) By 180 days after your final compliance date, you must meet two limits:

(1) The opacity limit is 10 percent (6-minute average) for air curtain incinerators that can combust at least 35 tons per day of municipal solid waste and no more than 250 tons per day of municipal solid waste.

(2) The opacity limit is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) Except during malfunctions, the requirements of this subpart apply at all times. Each malfunction must not exceed 3 hours.

§ 60.1925 How must I monitor opacity for air curtain incinerators that burn 100 percent yard waste?

(a) Use EPA Reference Method 9 in appendix A of this part to determine compliance with the opacity limit.

(b) Conduct an initial test for opacity as specified in § 60.8.

(c) After the initial test for opacity, conduct annual tests no more than 13 calendar months following the date of your previous test.

§60.1930 What are the recordkeeping and reporting requirements for air curtain incinerators that burn 100 percent yard waste?

(a) Provide a notice of construction that includes four items:

(1) Your intent to construct the air curtain incinerator.

(2) Your planned initial startup date.

(3) Types of fuels you plan to combust in your air curtain incinerator.

(4) The capacity of your incinerator, including supporting capacity calculations, as specified in §60.1935(d) and (e).

(b) Keep records of results of all opacity tests onsite in either paper copy or electronic format unless the Administrator approves another format.

(c) Keep all records for each incinerator for at least 5 years.

(d) Make all records available for submittal to the Administrator or for onsite review by an inspector.

(e) Submit the results (each 6-minute average) of the opacity tests by February 1 of the year following the year of the opacity emission test.

(f) Submit reports as a paper copy on or before the applicable submittal date. If the Administrator agrees, you may submit reports on electronic media.

(g) If the Administrator agrees, you may change the annual reporting dates (see §60.19(c)).

(h) Keep a copy of all reports onsite for a period of 5 years.

EQUATIONS

§60.1935 What equations must I use?

(a) *Concentration correction to 7 percent oxygen.* Correct any pollutant concentration to 7 percent oxygen using equation 1 of this section:

$$C_{7\%} = C_{unc} * (13.9) * \left(1 / \left(20.9 - C_{O_2}\right)\right) \qquad \text{(Eq. 1)}$$

Where:

$C_{7\%}$ = concentration corrected to 7 percent oxygen.

C_{unc} = uncorrected pollutant concentration.

C_{O_2} = concentration of oxygen (percent).

(b) *Percent reduction in potential mercury emissions.* Calculate the percent reduction in potential mercury emissions ($\%P_{Hg}$) using equation 2 of this section:

$$\%P_{Hg} = \left(E_i - E_o\right) * \left(100 / E_i\right) \qquad \text{(Eq. 2)}$$

Where:

$\%P_{Hg}$ = percent reduction of potential mercury emissions

E_i = mercury emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_o = mercury emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(c) *Percent reduction in potential hydrogen chloride emissions.* Calculate the percent reduction in potential hydrogen chloride emissions ($\%P_{HCl}$) using equation 3 of this section:

$$\%P_{HCl} = \left(E_i - E_o\right) * \left(100 / E_i\right) \qquad \text{(Eq. 3)}$$

Where:

$\%P_{HCl}$ = percent reduction of the potential hydrogen chloride emissions

E_i = hydrogen chloride emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_o = hydrogen chloride emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(d) *Capacity of a municipal waste combustion unit.* For a municipal waste combustion unit that can operate continuously for 24-hour periods, calculate the municipal waste combustion unit capacity based on 24 hours of operation at the maximum charge rate. To determine the maximum charge rate, use one of two methods:

(1) For municipal waste combustion units with a design based on heat input capacity, calculate the maximum charging rate based on the maximum heat input capacity and one of two heating values:

(i) If your municipal waste combustion unit combusts refuse-derived fuel, use a heating value of 12,800 kilojoules per kilogram (5,500 British thermal units per pound).

(ii) If your municipal waste combustion unit combusts municipal solid waste, use a heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound).

(2) For municipal waste combustion units with a design not based on heat input capacity, use the maximum designed charging rate.

(e) *Capacity of a batch municipal waste combustion unit.* Calculate the capacity of a batch municipal waste combustion unit as the maximum design amount of municipal solid waste they can charge per batch multiplied by the maximum number of batches they can process in 24 hours. Calculate the maximum number of batches by dividing 24 by the number of hours needed to process one batch. Retain fractional batches in the calculation. For example, if one batch requires 16 hours, the municipal waste combustion unit can combust 24/16, or 1.5 batches, in 24 hours.

(f) *Quarterly carbon usage.* If you use activated carbon to comply with the dioxins/furans or mercury limits, calculate the required quarterly usage of carbon using equation 4 of this section for plant basis or equation 5 of this section for unit basis:

(1) Plant basis.

$$C = \sum_{i=1}^{n} f_i * h_i \qquad \text{(Eq. 4)}$$

Where:

C = required quarterly carbon usage for the plant in kilograms (or pounds).

f_i = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h_i = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

n = number of municipal waste combustion units, i, located at your plant.

(2) Unit basis.

$$C = f * h \qquad \text{(Eq. 5)}$$

Where:

C = required quarterly carbon usage for the unit in kilograms (or pounds).

f = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

DEFINITIONS

§ 60.1940 What definitions must I know?

Terms used but not defined in this section are defined in the CAA and in subparts A and B of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or the Administrator of a State Air Pollution Control Agency.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

Batch municipal waste combustion unit means a municipal waste combustion unit designed so it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed during combustion.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 (or 366 consecutive days in leap years) consecutive days starting on January 1 and ending on December 31.

Chief facility operator means the person in direct charge and control of the operation of a municipal waste combustion unit. That person is responsible for daily onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit.

Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See the definition in this section of ''municipal waste combustion plant capacity'' for specification of which units at a plant site are included in the aggregate capacity calculation.

Class II units mean small municipal combustion units subject to this subpart that are located at municipal waste combustion plants with aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See the definition in this section of ''municipal waste combustion plant capacity'' for specification of which units at a plant site are included in the aggregate capacity calculation.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items:

(1) ''Yard waste,'' which is defined elsewhere in this section.

(2) Construction, renovation, or demolition wastes (for example, railroad ties and telephone poles) that are exempt from the definition of ''municipal solid waste'' in this section.

Co-fired combustion unit means a unit that combusts municipal solid waste with nonmunicipal solid waste fuel (for example, coal, industrial process waste). To be considered a co-fired combustion unit, the unit must be subject to a federally enforceable permit that limits it to combusting a fuel feed stream which is 30 percent or less (by weight) municipal solid waste as measured each calendar quarter.

Continuous burning means the continuous, semicontinuous, or batch feeding of municipal solid waste to dispose of the waste, produce energy, or provide heat to the combustion system in preparation for waste disposal or energy production. Continuous burning does not mean the use of municipal solid waste solely to thermally protect the grate or hearth during the startup period when municipal solid waste is not fed to the grate or hearth.

Continuous emission monitoring system means a monitoring system that continuously measures the emissions of a pollutant from a municipal waste combustion unit.

Dioxins/furans mean tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Effective date of State plan approval means the effective date that the EPA approves the State plan. The FEDERAL REGISTER specifies the date in the notice that announces EPA's approval of the State plan.

Eight-hour block average means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of three 8-hour periods of time:

(1) 12:00 midnight to 8:00 a.m.

(2) 8:00 a.m. to 4:00 p.m.

(3) 4:00 p.m. to 12:00 midnight.

Federally enforceable means all limits and conditions the Administrator can enforce (including the requirements of 40 CFR parts 60, 61, and 63), requirements in a State's implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

First calendar half means the period that starts on January 1 and ends on June 30 in any year.

Fluidized bed combustion unit means a unit where municipal waste is combusted in a fluidized bed of material. The fluidized bed material may remain in the primary combustion zone or may be carried out of the primary combustion zone and returned through a recirculation loop.

Four-hour block average or *4-hour block average* means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of six 4-hour periods:

(1) 12:00 midnight to 4:00 a.m.
(2) 4:00 a.m. to 8:00 a.m.
(3) 8:00 a.m. to 12:00 noon.
(4) 12:00 noon to 4:00 p.m.
(5) 4:00 p.m. to 8:00 p.m.
(6) 8:00 p.m. to 12:00 midnight.

Mass burn refractory municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, that includes municipal waste combustion units with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a cylindrical rotary waterwall furnace.

Mass burn waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a waterwall furnace.

Maximum demonstrated load of a municipal waste combustion unit means the highest 4-hour block arithmetic average municipal waste combustion unit load achieved during 4 consecutive hours in the course of the most recent dioxins/furans stack test that demonstrates compliance with the applicable emission limit for dioxins/furans specified in this subpart.

Maximum demonstrated temperature of the particulate matter control device means the highest 4-hour block arithmetic average flue gas temperature measured at the inlet of the particulate matter control device during 4 consecutive hours in the course of the most recent stack test for dioxins/furans emissions that demonstrates compliance with the limits specified in this subpart.

Medical/infectious waste means any waste meeting the definition of ‘‘medical/infectious waste’’ in § 60.51c.

Mixed fuel-fired (pulverized coal/refuse-derived fuel) combustion unit means a combustion unit that combusts coal and refuse-derived fuel simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is combusted in suspension. That includes both conventional pulverized coal and micropulverized coal.

Modification or *modified municipal waste combustion unit* means a municipal waste combustion unit you have changed after June 6, 2001 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs.

(2) Any physical change in the municipal waste combustion unit or change in the method of operating it that increases the emission level of any air pollutant for which new source performance standards have been established under section 129 or section 111 of the CAA. Increases in the emission level of any air pollutant are determined when the municipal waste combustion unit operates at 100 percent of its physical load capability and are measured downstream of all air pollution control devices. Load restrictions based on permits or other nonphysical operational restrictions cannot be considered in the determination.

Modular excess-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or *municipal-type solid waste* means household, commercial/retail, or institutional waste.

Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel. Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Municipal waste combustion plant means one or more municipal waste combustion units at the same location as specified under Applicability of State Plans (§ 60.1550(a)).

Municipal waste combustion plant capacity means the aggregate municipal waste combustion capacity of all municipal waste combustion units at the plant that are not subject to subparts Ea, Eb, or AAAA of this part.

Municipal waste combustion unit means any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected combustion units (with or without heat recovery), modular combustion units (starved-air or excess-air), boilers (for example, steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Two criteria further define municipal waste combustion units:

(1) Municipal waste combustion units do not include pyrolysis or combustion units located at a plastics or rubber recycling unit as specified under Applicability of State Plans (§ 60.1555(h) and (i)). Municipal waste combustion units do not include cement kilns that combust municipal solid waste as specified under Applicability of State Plans (§ 60.1555(j)). Municipal waste combustion units also do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of a municipal waste combustion unit are defined as follows. The municipal waste combustion unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustion unit water system. The municipal waste combustion unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set. The municipal waste combustion unit boundary starts at the municipal solid waste pit or hopper and extends through three areas:

(i) The combustion unit flue gas system, which ends immediately after the heat recovery equipment or, if there is no heat recovery equipment, immediately after the combustion chamber.

(ii) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

(iii) The combustion unit water system, which starts at the feed water pump and ends at the piping that exits the steam drum or superheater.

Particulate matter means total particulate matter emitted from municipal waste combustion units as measured using EPA Reference Method 5 in appendix A of this part and the procedures specified in § 60.1790.

Plastics or rubber recycling unit means an integrated processing unit for which plastics, rubber, or rubber tires are the only feed materials (incidental contaminants may be in the feed materials). The feed materials are processed and marketed to become input feed stock for chemical plants or petroleum refineries. The following three criteria further define a plastics or rubber recycling unit:

(1) Each calendar quarter, the combined weight of the feed stock that a

plastics or rubber recycling unit produces must be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires that recycling unit processes.

(2) The plastics, rubber, or rubber tires fed to the recycling unit may originate from separating or diverting plastics, rubber, or rubber tires from municipal or industrial solid waste. The feed materials may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards.

(3) The plastics, rubber, and rubber tires fed to the recycling unit may contain incidental contaminants (for example, paper labels on plastic bottles or metal rings on plastic bottle caps).

Potential hydrogen chloride emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Potential mercury emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without controls for mercury emissions.

Potential sulfur dioxide emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids by heating municipal solid waste. The gases, liquids, or solids produced are combusted and the emissions vented to the atmosphere.

Reconstruction means rebuilding a municipal waste combustion unit and meeting two criteria:

(1) The reconstruction begins after June 6, 2001.

(2) The cumulative cost of the construction over the life of the unit exceeds 50 percent of the original cost of building and installing the municipal waste combustion unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the municipal waste combustion unit used to calculate the costs, see the definition in this section of ''municipal waste combustion unit.''

Refractory unit or *refractory wall furnace* means a municipal waste combustion unit that has no energy recovery (such as through a waterwall) in the furnace of the municipal waste combustion unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. That includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Same location means the same or contiguous properties under common ownership or control, including those separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof. Entities may include a municipality, other governmental unit, or any quasi-governmental authority (for example, a public utility district or regional authority for waste disposal).

Second calendar half means the period that starts on July 1 and ends on December 31 in any year.

Shift supervisor means the person who is in direct charge and control of operating a municipal waste combustion unit and who is responsible for onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit during an assigned shift.

Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel) combustion unit means a municipal waste combustion unit that combusts coal and refuse-derived fuel simultaneously, in which coal is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Standard conditions when referring to units of measure mean a temperature of 20 °C and a pressure of 101.3 kilopascals.

Startup period means the period when a municipal waste combustion unit begins the continuous combustion of municipal solid waste. It does not include any warmup period during which the municipal waste combustion unit combusts fossil fuel or other solid waste fuel but receives no municipal solid waste.

State means any of the 50 United States and the protectorates of the United States.

State plan means a plan submitted pursuant to sections 111(d) and 129(b)(2) of the CAA and subpart B of this part, that implements and enforces this subpart.

Stoker (refuse-derived fuel) combustion unit means a steam generating unit that combusts refuse-derived fuel in a semisuspension combusting mode, using air-fed distributors.

Total mass dioxins/furans or *total mass* means the total mass of tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans as determined using EPA Reference Method 23 in appendix A of this part and the procedures specified in §60.1790.

Twenty-four hour daily average or *24-hour daily average* means either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the municipal waste combustion unit operates and combusts municipal solid waste measured during the 24 hours between 12:00 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a municipal waste combustion unit that has energy (heat) recovery in the furnace (for example, radiant heat transfer section) of the combustion unit.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(1) Construction, renovation, and demolition wastes that are exempt from the definition of ''municipal solid waste'' in this section.

(2) Clean wood that is exempt from the definition of ''municipal solid waste'' in this section.

TABLE 1 TO SUBPART BBBB OF PART 60—MODEL RULE—COMPLIANCE SCHEDULES AND INCREMENTS OF PROGRESS

Affected units	Increment 1 (Submit final control plan)	Increment 2 (Award contracts)	Increment 3 (Begin onsite construction)	Increment 4 (Complete onsite construction)	Increment 5 (Final compliance)
1. All Class I units[a][b]	(Dates to be specified in State plan).	(Dates to be specified in State plan).	(Dates to be specified in State plan).	(Dates to be specified in State plan).	(Dates to be specified in State plan).[c][d]
2. All Class II units[a][e].	(Dates to be specified in State plan).	Not applicable	Not applicable	Not applicable	(Dates to be specified in State plan).[c]

[a] Plant specific schedules can be used at the discretion of the State.

[b] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See §60.1940 for definitions.

[c] The date can be no later than 3 years after the effective date of State plan approval or December 6, 2005.

[d] For Class I units that began construction, reconstruction, or modification after June 26, 1987, comply with the dioxins/furans and mercury limits by the later of two dates:

1. One year after the effective date of State plan approval.
2. One year after the issuance of a revised construction or operation permit, if a permit modification is required.
3. Final compliance with the dioxins/furans limits must be achieved no later than December 6, 2005, even if the date one year after the issuance of a revised construction or operation permit is after December 6, 2005.

[e] Class II units mean all small municipal combustion units subject to this subpart that are located at municipal waste combustion plants with aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See §60.1940 for definitions.

Table 2 to Subpart BBBB of Part 60—Model Rule—Class I Emission Limits for Existing Small Municipal Waste Combustion Units [a]

For the following pollutants	You must meet the following emission limits [b]	Using the following averaging times	And determine compliance by the following methods
1. Organics:			
Dioxins/Furans (total mass basis).	30 nanograms per dry standard cubic meter for municipal waste combustion units that do not employ an electrostatic precipitator-based emission control system -or-. 60 nanograms per dry standard cubic meter for municipal waste combustion units that employ an electrostatic precipitator-based emission control system.	3-run average (minimum run duration is 4 hours).	Stack test.
2. Metals:			
Cadmium	0.040 milligrams per dry standard cubic meter	3-run average (run duration specified in test method).	Stack test.
Lead	0.490 milligrams per dry standard cubic meter	3-run average (run duration specified in test method).	Stack test.
Mercury	0.080 milligrams per dry standard cubic meter	3-run average (run duration specified in test method).	Stack test.
	85 percent reduction of potential mercury emissions.		
Opacity	10 percent	Thirty 6-minute averages.	Stack test.
Particulate Matter	27 milligrams per dry standard cubic meter	3-run average (run duration specified in test method).	Stack test.
3. Acid Gases:			
Hydrogen Chloride	31 parts per million by dry volume 95 percent reduction of potential hydrogen chloride emissions.	3-run average (minimum run duration is 1 hour).	Stack test.
Sulfur Dioxide	31 parts per million by dry volume 75 percent reduction of potential sulfur dioxide emissions.	24-hour daily block geometric average concentration percent reduction.	Continuous emission monitoring system.
4. Other:			
Fugitive Ash	Visible emissions for no more than 5 percent of hourly observation period.	Three 1-hour observation periods.	Visible emission test.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See § 60.1940 for definitions.

[b] All emission limits (except for opacity) are measured at 7 percent oxygen.

Table 3 to Subpart BBBB of Part 60—Model Rule—Class I Nitrogen Oxides Emission Limits for Existing Small Municipal Waste Combustion Units[a,b,c]

Municipal waste combustion technology	Limits for class I municipal waste combustion units
1. Mass burn waterwall	200 parts per million by dry volume.
2. Mass burn rotary waterwall	170 parts per million by dry volume.
3. Refuse-derived fuel	250 parts per million by dry volume.
4. Fluidized bed	220 parts per million by dry volume.
5. Mass burn refractory	350 parts per million by dry volume.
6. Modular excess air	190 parts per million by dry volume.
7. Modular starved air	380 parts per million by dry volume.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See § 60.1940 for definitions.

[b] Nitrogen oxides limits are measured at 7 percent oxygen.

[c] All limits are 24-hour daily block arithmetic average concentration. Compliance is determined for Class I units by continuous emission monitoring systems.

Table 4 to Subpart BBBB of Part 60—Model Rule—Class II Emission Limits for Existing Small Municipal Waste Combustion Unit[a]

For the following pollutants	You must meet the following emission following determine limits[b]	Using the following averaging times	And determine compliance by the following methods
1. Organics:			
Dioxins/Furans (total mass basis)	125 nanorgrams per dry standard cubic meter.	3-run average (minimum run duration is 4 hours).	Stack test.
2. Metals:			
Cadmium	0.10 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
Lead	1.6 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
Mercury	0.080 milligrams per dry standard cubic meter. 85 percent reduction of potential mercury emissions.	3-run average (run duration specified in test method).	Stack test.
Opacity	10 percent	Thirty 6-minute average	Stack test.
Particulate Matter	70 milligrams per dry standard cubic meter.	3-run average (run duration specified in test method).	Stack test.
3. Acid Gases:			
Hydrogen Chloride	250 parts per million by volume -or-. 50 percent reduction of potential hydrogen chloride emissions.	3-run average (minimum run duration is 1 hour).	Stack test.
Sulfur Dioxide	77 parts per million by dry volume -or-. 50 percent reduction of potential sulfur dioxides emissions.	24-hour daily block geometric average concentration -or- percent reduction.	Continuous emission monitoring system.
4. Other:			
Fugitive Ash	Visible emissions for no more than 5 percent of hourly observation period.	Three 1-hour observation periods.	Visible emission test.

[a] Class II units mean all small municipal combustion units subject to this subpart that are located at municipal waste combustion plants with aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See § 60.1940 for definitions.

[b] All emission limits (except for opacity) are measured at 7 percent oxygen.

[c] No monitoring, testing, recordkeeping or reporting is required to demonstrate compliance with the nitrogen oxides limit for Class II units.

Table 5 to Subpart BBBB of Part 60—Model Rule—Carbon Monoxide Emission Limits for Existing Small Municipal Waste Combustion Units

For the following municipal waste combustion units	You must meet the following carbon monoxide limits[a]	Using the following averaging times[b]
1. Fluidized bed	100 parts per million by dry volume	4-hour.
2. Fluidized bed, mixed fuel, (wood/refuse-derived fuel).	200 parts per million by dry volume	24-hour[c].
3. Mass burn rotary refractory	100 parts per million by dry volume	4-hour.
4. Mass burn rotary waterwall	250 parts per million by dry volume	24-hour.
5. Mass burn waterwall and refractory	100 parts per million by dry volume	4-hour.
6. Mixed fuel-fired, (pulverized coal/refuse-derived fuel).	150 parts per million by dry volume	4-hour.
7. Modular starved-air and excess air	50 parts per million by dry volume	4-hour.
8. Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel).	200 parts per million by dry volume	24-hour daily.
9. Stoker, refuse-derived fuel	200 parts per million by dry volume	24-hour daily.

[a] All emission limits (except for opacity) are measured at 7 percent oxygen. Compliance is determined by continuous emission monitoring systems.

[b] Block averages, arithmetic mean. See § 60.1940 for definitions.

[c] 24-hour block average, geometric mean.

TABLE 6 TO SUBPART BBBB OF PART 60—MODEL RULE—REQUIREMENTS FOR VALIDATING CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following continuous emission monitoring systems	Use the following methods in appendix A of this part to validate poollutant concentratin levels	Use the following methods in appendix A of this part to measure oxygen (or carbon dioxide)
1. Nitrogen Oxides (Class I units only)[a].	Method 7, 7A, 7B,7C, 7D, or 7E.	Method 3 or 3A.
2. Sulfur Dioxide	Method 6 or 6C	Method 3 or 3A.
3. Carbon Monoxide.	Method 10, 10A, or 10B.	Method 3 or 3A.

[a] Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See § 60.1940 for definitions.

TABLE 7 TO SUBPART BBBB OF PART 60—‘‘MODEL RULE—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following pollutants	Use the following span values for CEMS	Use the following performance specifications in appendix B of this part for your CEMS	If needed to meet minimum data requirements, use the folloiwng alternate methods in appendix A of this part to collect data
1. Opacity	100 percent opacity	P.S. 1	Method 9.
2. Nitrogen Oxides (Class I units only).	Control device outlet: 125 percent of the maximum expected hourly potential nitrogen oxides emissions of the municipal waste combustion unit.	P.S. 2	Method 7E.
3. Sulfur Dioxide	Inlet to control device: 125 percent of the maximum expected hourly potential sulfur dioxide emissions of the municipal waste combustion unit. Control device outlet: 50 percent of the maximum expected hourly potential sulfur dioxide emissions of the municipal waste combustion unit.	P.S. 2	Method 6C.
4. Carbon Monoxide	125 percent of the maximum expected hourly potential carbon monoxide emissions of the municipal waste combustion unit.	P.S. 4A	Method 10 with alternative interference trap.
5. Oxygen or Carbon Dioxide.	25 percent oxygen or 25 percent carbon dioxide	P.S. 3	Method 3A or 3B.

TABLE 8 TO SUBPART BBBB OF PART 60—MODEL RULE—REQUIREMENTS FOR STACK TESTS

To measure the following pollutants	Use the following methods in appendix A of this part to determine the sampling location	Use the following methods in appendix A of this part to measure pollutant concentration	Also note the following additional information
1. Organics			
Dioxins/Furans	Method 1	Method 23[a]	The minimum sampling time must be 4 hours per test run while the municipal waste combustion unit is operating at full load.
2. Metals			
Cadmium	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Lead	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Mercury	Method 1	Method 29[a]	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Opacity	Method 9	Method 9	Use Method 9 to determine compliance with opacity limits. 3-hour observation period (thirty 6-minute averages).

To measure the following pollutants	Use the following methods in appendix A of this part to determine the sampling location	Use the following methods in appendix A of this part to measure pollutant concentration	Also note the following additional information
Particulate Matter	Method 1	Method 5 or 29	The minimum sample volume must be 1.0 cubic meters. The probe and filter holder heating systems in the sample train must be set to provide a gas temperature no greater than 160 ±14 °C. The minimum sampling time is 1 hour.
3. Acid Gases[b]			
Hydrogen Chloride	Method 1	Method 26 or 26A[a]	Test runs must be at least 1 hour long while the municipal waste combustion unit is operating at full load.
4. Other[b]			
Fugitive Ash	Not applicable	Method 22 (visible emissions).	The three 1-hour observation period must include periods when the facility transfers fugitive ash from the municipal waste combustion unit to the area where the fugitive ash is stored or loaded into containers or trucks.

[a] Must simultaneously measure oxygen (or carbon dioxide) using Method 3A or 3B in appendix A of this part.

[b] Use CEMS to test sulfur dioxide, nitrogen oxide, and carbon monoxide. Stack tests are not required except for quality assurance requirements in Appendix F of this part.

Subpart CCCC—Standards of Performance for Commercial and Industrial Solid Waste Incineration Units for Which Construction Is Commenced After November 30, 1999 or for Which Modification or Reconstruction Is Commenced on or After June 1, 2001

SOURCE: 65 FR 75350, Dec. 1, 2000, unless otherwise noted.

INTRODUCTION

§ 60.2000 What does this subpart do?

This subpart establishes new source performance standards for commercial and industrial solid waste incineration (CISWI) units.

§ 60.2005 When does this subpart become effective?

This subpart takes effect on June 1, 2001. Some of the requirements in this subpart apply to planning the CISWI unit and must be completed even before construction is initiated on the CISWI unit (i.e., the preconstruction requirements in §§ 60.2045 and 60.2050). Other requirements such as the emission limitations and operating limits apply after the CISWI unit begins operation.

APPLICABILITY

§ 60.2010 Does this subpart apply to my incineration unit?

Yes, if your incineration unit meets all the requirements specified in paragraphs (a) through (c) of this section.

(a) Your incineration unit is a new incineration unit as defined in § 60.2015.

(b) Your incineration unit is a CISWI unit as defined in § 60.2265.

(c) Your incineration unit is not exempt under § 60.2020.

§ 60.2015 What is a new incineration unit?

(a) A new incineration unit is an incineration unit that meets either of the two criteria specified in paragraph (a)(1) or (2) of this section.

(1) Commenced construction after November 30, 1999.

(2) Commenced reconstruction or modification on or after June 1, 2001.

(b) This subpart does not affect your incineration unit if you make physical or operational changes to your incineration unit primarily to comply with the emission guidelines in subpart DDDD of this part (Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units). Such changes do not qualify as reconstruction or modification under this subpart.

§ 60.2020 What combustion units are exempt from this subpart?

This subpart exempts fifteen types of units described in paragraphs (a) through (o) of this section.

(a) *Pathological waste incineration units.* Incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste as defined in § 60.2265 are not subject to this subpart if you meet the two requirements specified in paragraphs (a)(1) and (2) of this section.

(1) Notify the Administrator that the unit meets these criteria.

(2) Keep records on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit.

(b) *Agricultural waste incineration units.* Incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of agricultural wastes as defined in § 60.2265 are not subject to this subpart if you meet the two requirements specified in paragraphs (b)(1) and (2) of this section.

(1) Notify the Administrator that the unit meets these criteria.

(2) Keep records on a calendar quarter basis of the weight of agricultural waste burned, and the weight of all other fuels and wastes burned in the unit.

(c) *Municipal waste combustion units.* Incineration units that meet either of the two criteria specified in paragraph (c)(1) or (2) of this section.

(1) Are regulated under subpart Ea of this part (Standards of Performance for Municipal Waste Combustors); subpart Eb of this part (Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994); subpart Cb of this part (Emission Guidelines and Compliance Time for Large Municipal Combustors that are Constructed on or Before September 20, 1994); AAAA of this part (Standards of Performance for New Stationary Sources: Small Municipal Waste Combustion Units); or subpart BBBB of this part (Emission Guidelines for Existing Stationary Sources: Small Municipal Waste Combustion Units).

(2) Burn greater than 30 percent municipal solid waste or refuse-derived fuel, as defined in subpart Ea, subpart Eb, subpart AAAA, and subpart BBBB of this part, and that have the capacity to burn less than 35 tons (32 megagrams) per day of municipal solid waste or refuse-derived fuel, if you meet the two requirements in paragraphs (c)(2)(i) and (ii) of this section.

(i) Notify the Administrator that the unit meets these criteria.

(ii) Keep records on a calendar quarter basis of the weight of municipal solid waste burned, and the weight of all other fuels and wastes burned in the unit.

(d) *Medical waste incineration units.* Incineration units regulated under subpart Ec of this part (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996) or subpart Ce of this part (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators).

(e) *Small power production facilities.* Units that meet the three requirements specified in paragraphs (e)(1) through (3) of this section.

(1) The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.

(3) You notify the Administrator that the unit meets all of these criteria.

(f) *Cogeneration facilities.* Units that meet the three requirements specified in paragraphs (f)(1) through (3) of this section.

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You notify the Administrator that the unit meets all of these criteria.

(g) *Hazardous waste combustion units.* Units that meet either of the two criteria specified in paragraph (g)(1) or (2) of this section.

(1) Units for which you are required to get a permit under section 3005 of the Solid Waste Disposal Act.

(2) Units regulated under subpart EEE of 40 CFR part 63 (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors).

(h) *Materials recovery units.* Units that combust waste for the primary purpose of recovering metals, such as primary and secondary smelters.

(i) *Air curtain incinerators.* Air curtain incinerators that burn only the materials listed in paragraphs (i)(1) through (3) of this section are only required to meet the requirements under ''Air Curtain Incinerators'' (§§ 60.2245 through 60.2260).

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

(j) *Cyclonic barrel burners.* (See § 60.2265)

(k) *Rack, part, and drum reclamation units.* (See § 60.2265)

(l) *Cement kilns.* Kilns regulated under subpart LLL of part 63 of this chapter (National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry).

(m) *Sewage sludge incinerators.* Incineration units regulated under subpart O of this part (Standards of Performance for Sewage Treatment Plants).

(n) *Chemical recovery units.* Combustion units burning materials to recover chemical constituents or to produce chemical compounds where there is an existing commercial market for such recovered chemical constituents or compounds. The seven types of units described in paragraphs (n)(1) through (7) of this section are considered chemical recovery units.

(1) Units burning only pulping liquors (*i.e.*, black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process.

(2) Units burning only spent sulfuric acid used to produce virgin sulfuric acid.

(3) Units burning only wood or coal feedstock for the production of charcoal.

(4) Units burning only manufacturing byproduct streams/residues containing catalyst metals which are reclaimed and reused as catalysts or used to produce commercial grade catalysts.

(5) Units burning only coke to produce purified carbon monoxide that is used as an intermediate in the production of other chemical compounds.

(6) Units burning only hydrocarbon liquids or solids to produce hydrogen, carbon monoxide, synthesis gas, or other gases for use in other manufacturing processes.

(7) Units burning only photographic film to recover silver.

(o) *Laboratory Analysis Units.* Units that burn samples of materials for the purpose of chemical or physical analysis.

§ 60.2025 What if my chemical recovery unit is not listed in § 60.2020(n)?

(a) If your chemical recovery unit is not listed in § 60.2020(n), you can petition the Administrator to add your unit to the list. The petition must contain the six items in paragraphs (a)(1) through (6) of this section.

(1) A description of the source of the materials being burned.

(2) A description of the composition of the materials being burned, highlighting the chemical constituents in these materials that are recovered.

(3) A description (including a process flow diagram) of the process in which the materials are burned, highlighting the type, design, and operation of the equipment used in this process.

(4) A description (including a process flow diagram) of the chemical constituent recovery process, highlighting the type, design, and operation of the equipment used in this process.

(5) A description of the commercial markets for the recovered chemical constituents and their use.

(6) The composition of the recovered chemical constituents and the composition of these chemical constituents as they are bought and sold in commercial markets.

(b) Until the Administrator approves your petition, the incineration unit is covered by this subpart.

(c) If a petition is approved, the Administrator will amend § 60.2020(n) to add the unit to the list of chemical recovery units.

§ 60.2030 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. Environmental Protection Agency (EPA), or a delegated authority such as your State, local, or tribal agency. If the EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency, the authorities contained in paragraph (c) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are specified in paragraphs (c)(1) through (7) of this section.

(1) Approval of alternatives to the emission limitations in Table 1 of this subpart and operating limits established under § 60.2110.

(2) Approval of major alternatives to test methods.

(3) Approval of major alternatives to monitoring.

(4) Approval of major alternatives to recordkeeping and reporting.

(5) The requirements in § 60.2025.

(6) The requirements in § 60.2115.

(7) The requirements in § 60.2100(b)(2).

§ 60.2035 How are these new source performance standards structured?

These new source performance standards contain the eleven major components listed in paragraphs (a) through (k) of this section.

(a) Preconstruction siting analysis.

(b) Waste management plan.

(c) Operator training and qualification.

(d) Emission limitations and operating limits.

(e) Performance testing.

(f) Initial compliance requirements.

(g) Continuous compliance requirements.

(h) Monitoring.

(i) Recordkeeping and reporting.

(j) Definitions.

(k) Tables.

§ 60.2040 Do all eleven components of these new source performance standards apply at the same time?

No. You must meet the preconstruction siting analysis and waste management plan requirements before you commence construction of the CISWI unit. The operator training and qualification, emission limitations, operating limits, performance testing and compliance, monitoring, and most recordkeeping and reporting requirements are met after the CISWI unit begins operation.

PRECONSTRUCTION SITING ANALYSIS

§ 60.2045 Who must prepare a siting analysis?

(a) You must prepare a siting analysis if you plan to commence construction of a CISWI unit after December 1, 2000.

(b) You must prepare a siting analysis if you are required to submit an initial application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, as applicable, for the reconstruction or modification of your CISWI unit.

§ 60.2050 What is a siting analysis?

(a) The siting analysis must consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, the analysis may consider costs, energy impacts, nonair environmental impacts, or any other factors related to the practicability of the alternatives.

(b) Analyses of your CISWI unit's impacts that are prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, provided they include the consideration of air pollution control alternatives specified in paragraph (a) of this section.

(c) You must complete and submit the siting requirements of this section as required under § 60.2190(c) prior to commencing construction.

WASTE MANAGEMENT PLAN

§ 60.2055 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.

§ 60.2060 When must I submit my waste management plan?

You must submit a waste management plan prior to commencing construction.

§ 60.2065 What should I include in my waste management plan?

A waste management plan must include consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The plan must identify any additional waste management measures and implement those measures the source considers practical and feasible, considering the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.

OPERATOR TRAINING AND QUALIFICATION

§ 60.2070 What are the operator training and qualification requirements?

(a) No CISWI unit can be operated unless a fully trained and qualified CISWI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified CISWI unit operators are temporarily not accessible, you must follow the procedures in § 60.2100.

(b) Operator training and qualification must be obtained through a State-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described in paragraphs (c)(1) through (3) of this section.

(1) Training on the eleven subjects listed in paragraphs (c)(1)(i) through (xi) of this section.

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Actions to correct malfunctions or conditions that may lead to malfunction.

(viii) Bottom and fly ash characteristics and handling procedures.

(ix) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(x) Pollution prevention.

(xi) Waste management practices.

(2) An examination designed and administered by the instructor.

(3) Written material covering the training course topics that may serve as reference material following completion of the course.

§ 60.2075 When must the operator training course be completed?

The operator training course must be completed by the later of the three dates specified in paragraphs (a) through (c) of this section.

(a) Six months after your CISWI unit startup.

(b) December 3, 2001.

(c) The date before an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit.

§ 60.2080 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under § 60.2070(b).

(b) Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination required under § 60.2070(c)(2).

§ 60.2085 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the five topics described in paragraphs (a) through (e) of this section.

(a) Update of regulations.

(b) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling.

(c) Inspection and maintenance.

(d) Responses to malfunctions or conditions that may lead to malfunction.

(e) Discussion of operating problems encountered by attendees.

§ 60.2090 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification by one of the two methods specified in paragraphs (a) and (b) of this section.

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in § 60.2085.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in § 60.2080(a).

§ 60.2095 What site-specific documentation is required?

(a) Documentation must be available at the facility and readily accessible for all CISWI unit operators that addresses the ten topics described in paragraphs (a)(1) through (10) of this section. You must maintain this information and the training records required by paragraph (c) of this section in a manner that they can be readily accessed and are suitable for inspection upon request.

(1) Summary of the applicable standards under this subpart.

(2) Procedures for receiving, handling, and charging waste.

(3) Incinerator startup, shutdown, and malfunction procedures.

(4) Procedures for maintaining proper combustion air supply levels.

(5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(6) Monitoring procedures for demonstrating compliance with the incinerator operating limits.

(7) Reporting and recordkeeping procedures.

(8) The waste management plan required under §§ 60.2055 through 60.2065.

(9) Procedures for handling ash.

(10) A list of the wastes burned during the performance test.

(b) You must establish a program for reviewing the information listed in paragraph (a) of this section with each incinerator operator.

(1) The initial review of the information listed in paragraph (a) of this section must be conducted within 6 months after the effective date of this subpart or prior to an employee's assumption of responsibilities for operation of the CISWI unit, whichever date is later.

(2) Subsequent annual reviews of the information listed in paragraph (a) of this section must be conducted not later than 12 months following the previous review.

(c) You must also maintain the information specified in paragraphs (c)(1) through (3) of this section.

(1) Records showing the names of CISWI unit operators who have completed review of the information in § 60.2095(a) as required by § 60.2095(b), including the date of the initial review and all subsequent annual reviews.

(2) Records showing the names of the CISWI operators who have completed the operator training requirements under § 60.2070, met the criteria for qualification under § 60.2080, and maintained or renewed their qualification under § 60.2085 or § 60.2090. Records must include documentation of training, the

dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(3) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

§60.2100 What if all the qualified operators are temporarily not accessible?

If all qualified operators are temporarily not accessible (i.e., not at the facility and not able to be at the facility within 1 hour), you must meet one of the two criteria specified in paragraphs (a) and (b) of this section, depending on the length of time that a qualified operator is not accessible.

(a) When all qualified operators are not accessible for more than 8 hours, but less than 2 weeks, the CISWI unit may be operated by other plant personnel familiar with the operation of the CISWI unit who have completed a review of the information specified in §60.2095(a) within the past 12 months. However, you must record the period when all qualified operators were not accessible and include this deviation in the annual report as specified under §60.2210.

(b) When all qualified operators are not accessible for 2 weeks or more, you must take the two actions that are described in paragraphs (b)(1) and (2) of this section.

(1) Notify the Administrator of this deviation in writing within 10 days. In the notice, state what caused this deviation, what you are doing to ensure that a qualified operator is accessible, and when you anticipate that a qualified operator will be accessible.

(2) Submit a status report to the Administrator every 4 weeks outlining what you are doing to ensure that a qualified operator is accessible, stating when you anticipate that a qualified operator will be accessible and requesting approval from the Administrator to continue operation of the CISWI unit. You must submit the first status report 4 weeks after you notify the Administrator of the deviation under paragraph (b)(1) of this section. If the Administrator notifies you that your request to continue operation of the CISWI unit is disapproved, the CISWI unit may continue operation for 90 days, then must cease operation. Operation of the unit may resume if you meet the two requirements in paragraphs (b)(2)(i) and (ii) of this section.

(i) A qualified operator is accessible as required under §60.2070(a).

(ii) You notify the Administrator that a qualified operator is accessible and that you are resuming operation.

EMISSION LIMITATIONS AND OPERATING LIMITS

§60.2105 What emission limitations must I meet and by when?

You must meet the emission limitations specified in Table 1 of this subpart 60 days after your CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

§60.2110 What operating limits must I meet and by when?

(a) If you use a wet scrubber to comply with the emission limitations, you must establish operating limits for four operating parameters (as specified in Table 2 of this subpart) as described in paragraphs (a)(1) through (4) of this section during the initial performance test.

(1) Maximum charge rate, calculated using one of the two different procedures in paragraph (a)(1)(i) or (ii), as appropriate.

(i) For continuous and intermittent units, maximum charge rate is 110 percent of the average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(ii) For batch units, maximum charge rate is 110 percent of the daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(2) Minimum pressure drop across the wet scrubber, which is calculated as 90 percent of the average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum amperage to the

wet scrubber, which is calculated as 90 percent of the average amperage to the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

(3) Minimum scrubber liquor flow rate, which is calculated as 90 percent of the average liquor flow rate at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(4) Minimum scrubber liquor pH, which is calculated as 90 percent of the average liquor pH at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with the HCl emission limitation.

(b) You must meet the operating limits established during the initial performance test 60 days after your CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

(c) If you use a fabric filter to comply with the emission limitations, you must operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month period. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by you to initiate corrective action.

§60.2115 What if I do not use a wet scrubber to comply with the emission limitations?

If you use an air pollution control device other than a wet scrubber, or limit emissions in some other manner, to comply with the emission limitations under §60.2105, you must petition the Administrator for specific operating limits to be established during the initial performance test and continuously monitored thereafter. You must not conduct the initial performance test until after the petition has been approved by the Administrator. Your petition must include the five items listed in paragraphs (a) through (e) of this section.

(a) Identification of the specific parameters you propose to use as additional operating limits.

(b) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters, and how limits on these parameters will serve to limit emissions of regulated pollutants.

(c) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the operating limits on these parameters.

(d) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.

(e) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

§60.2120 What happens during periods of startup, shutdown, and malfunction?

(a) The emission limitations and operating limits apply at all times except during CISWI unit startups, shutdowns, or malfunctions.

(b) Each malfunction must last no longer than 3 hours.

PERFORMANCE TESTING

§60.2125 How do I conduct the initial and annual performance test?

(a) All performance tests must consist of a minimum of three test runs conducted under conditions representative of normal operations.

(b) You must document that the waste burned during the performance test is representative of the waste burned under normal operating conditions by maintaining a log of the quantity of waste burned (as required in §60.2175(b)(1)) and the types of waste burned during the performance test.

(c) All performance tests must be conducted using the minimum run duration specified in Table 1 of this subpart.

(d) Method 1 of appendix A of this part must be used to select the sampling location and number of traverse points.

(e) Method 3A or 3B of appendix A of this part must be used for gas composition analysis, including measurement of oxygen concentration. Method 3A or 3B of appendix A of this part must be used simultaneously with each method.

(f) All pollutant concentrations, except for opacity, must be adjusted to 7 percent oxygen using Equation 1 of this section:

$$C_{adj} = C_{meas}\ (20.9\text{–}7)/(20.9\text{-}\%O_2) \qquad \text{(Eq. 1)}$$

Where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen;

C_{meas} = pollutant concentration measured on a dry basis;

(20.9–7) = 20.9 percent oxygen − 7 percent oxygen (defined oxygen correction basis);

20.9 = oxygen concentration in air, percent; and

$\%O_2$ = oxygen concentration measured on a dry basis, percent.

(g) You must determine dioxins/furans toxic equivalency by following the procedures in paragraphs (g)(1) through (3) of this section.

(1) Measure the concentration of each dioxin/furan tetra-through octachlorinated-congener emitted using EPA Method 23.

(2) For each dioxin/furan (tetra-through octachlorinated) congener measured in accordance with paragraph (g)(1) of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in Table 3 of this subpart.

(3) Sum the products calculated in accordance with paragraph (g)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

§ 60.2130 How are the performance test data used?

You use results of performance tests to demonstrate compliance with the emission limitations in Table 1 of this subpart.

INITIAL COMPLIANCE REQUIREMENTS

§ 60.2135 How do I demonstrate initial compliance with the emission limitations and establish the operating limits?

You must conduct an initial performance test, as required under § 60.8, to determine compliance with the emission limitations in Table 1 of this subpart and to establish operating limits using the procedure in § 60.2110 or § 60.2115. The initial performance test must be conducted using the test methods listed in Table 1 of this subpart and the procedures in § 60.2125.

§ 60.2140 By what date must I conduct the initial performance test?

The initial performance test must be conducted within 60 days after your CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 60.2145 How do I demonstrate continuous compliance with the emission limitations and the operating limits?

(a) You must conduct an annual performance test for particulate matter, hydrogen chloride, and opacity for each CISWI unit as required under § 60.8 to determine compliance with the emission limitations. The annual performance test must be conducted using the test methods listed in Table 1 of this subpart and the procedures in § 60.2125.

(b) You must continuously monitor the operating parameters specified in § 60.2110 or established under § 60.2115. Operation above the established maximum or below the established minimum operating limits constitutes a deviation from the established operating limits. Three-hour rolling average values are used to determine compliance (except for baghouse leak detection system alarms) unless a different averaging period is established under § 60.2115. Operating limits do not apply during performance tests.

(c) You must only burn the same types of waste used to establish operating limits during the performance test.

§ 60.2150 By what date must I conduct the annual performance test?

You must conduct annual performance tests for particulate matter, hydrogen chloride, and opacity within 12 months following the initial performance test. Conduct subsequent annual performance tests within 12 months following the previous one.

§ 60.2155 May I conduct performance testing less often?

(a) You can test less often for a given pollutant if you have test data for at least 3 years, and all performance tests for the pollutant (particulate matter, hydrogen chloride, or opacity) over 3 consecutive years show that you comply with the emission limitation. In this case, you do not have to conduct a performance test for that pollutant for the next 2 years. You must conduct a performance test during the 3rd year and no more than 36 months following the previous performance test.

(b) If your CISWI unit continues to meet the emission limitation for particulate matter, hydrogen chloride, or opacity, you may choose to conduct performance tests for these pollutants every 3rd year, but each test must be within 36 months of the previous performance test.

(c) If a performance test shows a deviation from an emission limitation for particulate matter, hydrogen chloride, or opacity, you must conduct annual performance tests for that pollutant until all performance tests over a 3-year period show compliance.

§ 60.2160 May I conduct a repeat performance test to establish new operating limits?

(a) Yes. You may conduct a repeat performance test at any time to establish new values for the operating limits. The Administrator may request a repeat performance test at any time.

(b) You must repeat the performance test if your feed stream is different than the feed streams used during any performance test used to demonstrate compliance.

MONITORING

§ 60.2165 What monitoring equipment must I install and what parameters must I monitor?

(a) If you are using a wet scrubber to comply with the emission limitation under § 60.2105, you must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the value of the operating parameters used to determine compliance with the operating limits listed in Table 2 of this subpart. These devices (or methods) must measure and record the values for these operating parameters at the frequencies indicated in Table 2 of this subpart at all times except as specified in § 60.2170(a).

(b) If you use a fabric filter to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate a bag leak detection system as specified in paragraphs (b)(1) through (8) of this section.

(1) You must install and operate a bag leak detection system for each exhaust stack of the fabric filter.

(2) Each bag leak detection system must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.

(5) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(6) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.

(7) For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse compartment or cell. For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(c) If you are using something other than a wet scrubber to comply with the emission limitations under §60.2105, you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor compliance with the site-specific operating limits established using the procedures in §60.2115.

§60.2170 Is there a minimum amount of monitoring data I must obtain?

(a) Except for monitor malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system), you must conduct all monitoring at all times the CISWI unit is operating.

(b) Do not use data recorded during monitor malfunctions, associated repairs, and required quality assurance or quality control activities for meeting the requirements of this subpart, including data averages and calculations. You must use all the data collected during all other periods in assessing compliance with the operating limits.

RECORDKEEPING AND REPORTING

§60.2175 What records must I keep?

You must maintain the fourteen items (as applicable) as specified in paragraphs (a) through (n) of this section for a period of at least 5 years:

(a) Calendar date of each record.

(b) Records of the data described in paragraphs (b)(1) through (6) of this section:

(1) The CISWI unit charge dates, times, weights, and hourly charge rates.

(2) Liquor flow rate to the wet scrubber inlet every 15 minutes of operation, as applicable.

(3) Pressure drop across the wet scrubber system every 15 minutes of operation or amperage to the wet scrubber every 15 minutes of operation, as applicable.

(4) Liquor pH as introduced to the wet scrubber every 15 minutes of operation, as applicable.

(5) For affected CISWI units that establish operating limits for controls other than wet scrubbers under §60.2115, you must maintain data collected for all operating parameters used to determine compliance with the operating limits.

(6) If a fabric filter is used to comply with the emission limitations, you must record the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. You must also record the percent of operating time during each 6-month period that the alarm sounds, calculated as specified in §60.2110(c).

(c) Identification of calendar dates and times for which monitoring systems used to monitor operating limits were inoperative, inactive, malfunctioning, or out of control (except for downtime associated with zero and span and other routine calibration checks). Identify the operating parameters not measured, the duration, reasons for not obtaining the data, and a description of corrective actions taken.

(d) Identification of calendar dates, times, and durations of malfunctions, and a description of the malfunction and the corrective action taken.

(e) Identification of calendar dates and times for which data show a deviation from the operating limits in Table 2 of this subpart or a deviation from other operating limits established under §60.2115 with a description of the deviations, reasons for such deviations, and a description of corrective actions taken.

(f) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable. Retain a copy of the complete test report including calculations.

(g) All documentation produced as a result of the siting requirements of §§ 60.2045 and 60.2050.

(h) Records showing the names of CISWI unit operators who have completed review of the information in § 60.2095(a) as required by § 60.2095(b), including the date of the initial review and all subsequent annual reviews.

(i) Records showing the names of the CISWI operators who have completed the operator training requirements under § 60.2070, met the criteria for qualification under § 60.2080, and maintained or renewed their qualification under § 60.2085 or § 60.2090. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(j) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

(k) Records of calibration of any monitoring devices as required under § 60.2165.

(l) Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.

(m) The information listed in § 60.2095(a).

(n) On a daily basis, keep a log of the quantity of waste burned and the types of waste burned (always required).

§ 60.2180 Where and in what format must I keep my records?

All records must be available onsite in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

§ 60.2185 What reports must I submit?

See Table 4 of this subpart for a summary of the reporting requirements.

§ 60.2190 What must I submit prior to commencing construction?

You must submit a notification prior to commencing construction that includes the five items listed in paragraphs (a) through (e) of this section.

(a) A statement of intent to construct.

(b) The anticipated date of commencement of construction.

(c) All documentation produced as a result of the siting requirements of § 60.2050.

(d) The waste management plan as specified in §§ 60.2055 through 60.2065.

(e) Anticipated date of initial startup.

§ 60.2195 What information must I submit prior to initial startup?

You must submit the information specified in paragraphs (a) through (e) of this section prior to initial startup.

(a) The type(s) of waste to be burned.

(b) The maximum design waste burning capacity.

(c) The anticipated maximum charge rate.

(d) If applicable, the petition for site-specific operating limits under § 60.2115.

(e) The anticipated date of initial startup.

§ 60.2200 What information must I submit following my initial performance test?

You must submit the information specified in paragraphs (a) through (c) of this section no later than 60 days following the initial performance test. All reports must be signed by the facilities manager.

(a) The complete test report for the initial performance test results obtained under § 60.2135, as applicable.

(b) The values for the site-specific operating limits established in § 60.2110 or § 60.2115.

(c) If you are using a fabric filter to comply with the emission limitations, documentation that a bag leak detection system has been installed and is being operated, calibrated, and maintained as required by § 60.2165(b).

§ 60.2205 When must I submit my annual report?

You must submit an annual report no later than 12 months following the submission of the information in § 60.2200. You must submit subsequent reports no more than 12 months following the previous report. (If the unit is subject to permitting requirements under title V of the Clean Air Act, you may be required by the permit to submit these reports more frequently.)

§60.2210 What information must I include in my annual report?

The annual report required under §60.2205 must include the ten items listed in paragraphs (a) through (j) of this section. If you have a deviation from the operating limits or the emission limitations, you must also submit deviation reports as specified in §§60.2215, 60.2220, and 60.2225.

(a) Company name and address.

(b) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(c) Date of report and beginning and ending dates of the reporting period.

(d) The values for the operating limits established pursuant to §60.2110 or §60.2115.

(e) If no deviation from any emission limitation or operating limit that applies to you has been reported, a statement that there was no deviation from the emission limitations or operating limits during the reporting period, and that no monitoring system used to determine compliance with the operating limits was inoperative, inactive, malfunctioning or out of control.

(f) The highest recorded 3-hour average and the lowest recorded 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported.

(g) Information recorded under §60.2175(b)(6) and (c) through (e) for the calendar year being reported.

(h) If a performance test was conducted during the reporting period, the results of that test.

(i) If you met the requirements of §60.2155(a) or (b), and did not conduct a performance test during the reporting period, you must state that you met the requirements of §60.2155(a) or (b), and, therefore, you were not required to conduct a performance test during the reporting period.

(j) Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours, but less than 2 weeks.

§60.2215 What else must I report if I have a deviation from the operating limits or the emission limitations?

(a) You must submit a deviation report if any recorded 3-hour average parameter level is above the maximum operating limit or below the minimum operating limit established under this subpart, if the bag leak detection system alarm sounds for more than 5 percent of the operating time for the 6-month reporting period, or if a performance test was conducted that deviated from any emission limitation.

(b) The deviation report must be submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data you collected during the second half of the calendar year (July 1 to December 31).

§60.2220 What must I include in the deviation report?

In each report required under §60.2215, for any pollutant or parameter that deviated from the emission limitations or operating limits specified in this subpart, include the six items described in paragraphs (a) through (f) of this section.

(a) The calendar dates and times your unit deviated from the emission limitations or operating limit requirements.

(b) The averaged and recorded data for those dates.

(c) Durations and causes of each deviation from the emission limitations or operating limits and your corrective actions.

(d) A copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels.

(e) The dates, times, number, duration, and causes for monitor downtime incidents (other than downtime associated with zero, span, and other routine calibration checks).

(f) Whether each deviation occurred during a period of startup, shutdown, or malfunction, or during another period.

§60.2225 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?

(a) If all qualified operators are not accessible for 2 weeks or more, you must take the two actions in paragraphs (a)(1) and (2) of this section.

(1) Submit a notification of the deviation within 10 days that includes the three items in paragraphs (a)(1)(i) through (iii) of this section.

(i) A statement of what caused the deviation.

(ii) A description of what you are doing to ensure that a qualified operator is accessible.

(iii) The date when you anticipate that a qualified operator will be available.

(2) Submit a status report to the Administrator every 4 weeks that includes the three items in paragraphs (a)(2)(i) through (iii) of this section.

(i) A description of what you are doing to ensure that a qualified operator is accessible.

(ii) The date when you anticipate that a qualified operator will be accessible.

(iii) Request approval from the Administrator to continue operation of the CISWI unit.

(b) If your unit was shut down by the Administrator, under the provisions of § 60.2100(b)(2), due to a failure to provide an accessible qualified operator, you must notify the Administrator that you are resuming operation once a qualified operator is accessible.

§ 60.2230 Are there any other notifications or reports that I must submit?

Yes. You must submit notifications as provided by § 60.7.

§ 60.2235 In what form can I submit my reports?

Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

§ 60.2240 Can reporting dates be changed?

If the Administrator agrees, you may change the semiannual or annual reporting dates. See § 60.19(c) for procedures to seek approval to change your reporting date.

TITLE V OPERATING PERMITS

§ 60.2242 Am I required to apply for and obtain a title V operating permit for my unit?

Yes. Each CISWI unit must operate pursuant to a permit issued under section 129(e) and title V of the Clean Air Act by the later of the two dates in paragraphs (a) and (b) of this section.

(a) Thirty-six months after December 1, 2000.

(b) The effective date of the title V permit program to which your unit is subject. If your unit is subject to title V as a result of some triggering requirement(s) other than this subpart (for example, being a major source), then your unit may be required to apply for and obtain a title V permit prior to the deadlines noted above. If more than one requirement triggers the requirement to apply for a title V permit, the 12-month timeframe for filing a title V application is triggered by the requirement which first causes the source to be subject to title V.

AIR CURTAIN INCINERATORS

§ 60.2245 What is an air curtain incinerator?

(a) An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

(b) Air curtain incinerators that burn only the materials listed in paragraphs (b)(1) through (3) of this section are only required to meet the requirements under ''Air Curtain Incinerators'' (§§ 60.2245 through 60.2260).

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

§ 60.2250 What are the emission limitations for air curtain incinerators?

(a) Within 60 days after your air curtain incinerator reaches the charge rate at which it will operate, but no later than 180 days after its initial startup, you must meet the two limitations specified in paragraphs (a)(1) and (2) of this section.

(1) The opacity limitation is 10 percent (6-minute average), except as described in paragraph (a)(2) of this section.

(2) The opacity limitation is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) Except during malfunctions, the requirements of this subpart apply at all times, and each malfunction must not exceed 3 hours.

§60.2255 How must I monitor opacity for air curtain incinerators?

(a) Use Method 9 of appendix A of this part to determine compliance with the opacity limitation.

(b) Conduct an initial test for opacity as specified in §60.8.

(c) After the initial test for opacity, conduct annual tests no more than 12 calendar months following the date of your previous test.

§60.2260 What are the recordkeeping and reporting requirements for air curtain incinerators?

(a) Prior to commencing construction on your air curtain incinerator, submit the three items described in paragraphs (a)(1) through (3) of this section.

(1) Notification of your intent to construct the air curtain incinerators.

(2) Your planned initial startup date.

(3) Types of materials you plan to burn in your air curtain incinerator.

(b) Keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format, unless the Administrator approves another format, for at least 5 years.

(c) Make all records available for submittal to the Administrator or for an inspector's onsite review.

(d) You must submit the results (each 6-minute average) of the initial opacity tests no later than 60 days following the initial test. Submit annual opacity test results within 12 months following the previous report.

(e) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date.

(f) Keep a copy of the initial and annual reports onsite for a period of 5 years.

DEFINITIONS

§60.2265 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and subpart A (General Provisions) of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or Administrator of a State Air Pollution Control Agency.

Agricultural waste means vegetative agricultural materials such as nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds, and other vegetative waste materials generated as a result of agricultural operations.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

Auxiliary fuel means natural gas, liquified petroleum gas, fuel oil, or diesel fuel.

Bag leak detection system means an instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Commercial and industrial solid waste incineration (CISWI) unit means any combustion device that combusts commercial and industrial waste, as defined in this subpart. The boundaries of a CISWI unit are defined as, but not limited to, the commercial or industrial solid waste fuel feed system, grate system, flue gas system, and bottom ash. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the commercial and industrial solid waste hopper (if applicable) and extends through two areas:

(1) The combustion unit flue gas system, which ends immediately after the last combustion chamber.

(2) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

Commercial and industrial waste means solid waste combusted in an enclosed device using controlled flame combustion without energy recovery that is a distinct operating unit of any commercial or industrial facility (including field-erected, modular, and custom built incineration units operating with starved or excess air), or solid waste combusted in an air curtain incinerator without energy recovery that is a distinct operating unit of any commercial or industrial facility.

Contained gaseous material means gases that are in a container when that container is combusted.

Cyclonic barrel burner means a combustion device for waste materials that is attached to a 55 gallon, open-head drum. The device consists of a lid, which fits onto and encloses the drum, and a blower that forces combustion air into the drum in a cyclonic manner to enhance the mixing of waste material and air.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation, operating limit, or operator qualification and accessibility requirements;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation, operating limit, or operator qualification and accessibility requirement in this subpart during startup, shutdown, or malfunction, regardless or whether or not such failure is permitted by this subpart.

Dioxins/furans means tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Discard means, for purposes of this subpart and 40 CFR part 60, subpart DDDD, only, burned in an incineration unit without energy recovery.

Drum reclamation unit means a unit that burns residues out of drums (e.g., 55 gallon drums) so that the drums can be reused.

Energy recovery means the process of recovering thermal energy from combustion for useful purposes such as steam generation or process heating.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse.

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable Federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions.

Modification or *modified CISWI unit* means a CISWI unit you have changed later than June 1, 2001 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

(2) Any physical change in the CISWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Part reclamation unit means a unit that burns coatings off parts (e.g., tools, equipment) so that the parts can be reconditioned and reused.

Particulate matter means total particulate matter emitted from CISWI units as measured by Method 5 or Method 29 of appendix A of this part.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Rack reclamation unit means a unit that burns the coatings off racks used to hold small items for application of a coating. The unit burns the coating overspray off the rack so the rack can be reused.

Reconstruction means rebuilding a CISWI unit and meeting two criteria:

(1) The reconstruction begins on or after June 1, 2001.

(2) The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Shutdown means the period of time after all waste has been combusted in the primary chamber.

Solid waste means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1342), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014). For purposes of this subpart and 40 CFR part 60, subpart DDDD, only, solid waste does not include the waste burned in the fifteen types of units described in § 60.2020.

Standard conditions, when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup period means the period of time between the activation of the system and the first charge to the unit.

Wet scrubber means an add-on air pollution control device that utilizes an aqueous or alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Wood waste means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include:

(1) Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.

(2) Construction, renovation, or demolition wastes.

(3) Clean lumber.

TABLE 1 TO SUBPART CCCC OF PART 60—EMISSION LIMITATIONS

For the air pollutant	You must meet this emission limitation[a]	Using this averaging time	And determining compliance using this method
Cadmium	0.004 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part).
Carbon monoxide	157 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10, 10A, or 10B of appendix A of this part).
Dioxins/furans (toxic equivalency basis).	0.41 nanograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 23 of Appendix A of this part).
Hydrogen chloride	62 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 26A of appendix A of this part).
Lead	0.04 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part).
Mercury	0.47 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part).
Opacity	10 percent	6-minute averages	Performance test (Method 9 of appendix A of this part).
Oxides of nitrogen	388 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 7, 7A, 7C, 7D, or 7E of appendix A of this part).
Particulate matter	70 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 5 or 29 of appendix A of this part).
Sulfur dioxide	20 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6c of appendix A of this part.

[a] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.

[66 FR 16606, Mar. 27, 2001]

TABLE 2 TO SUBPART CCCC OF PART 60—OPERATING LIMITS FOR WET SCRUBBERS

For these operating parameters	You must establish these operating limits	And monitoring using these minimum frequencies		
		Data measurement	Data recording	Averaging time
Charge rate	Maximum charge rate	Continuous	Every hour	Daily (batch units) 3-hour rolling (continuous and intermittent units)[a]
Pressure drop across the wet scrubber or amperage to wet scrubber.	Minimum pressure drop or amperage.	Continuous	Every 15 minutes	3-hour rolling[a]
Scrubber liquor flow rate	Minimum flow rate	Continuous	Every 15 minutes	3-hour rolling[a]
Scrubber liquor pH	Minimum pH	Continuous	Every 15 minutes	3-hour rolling[a]

[a] Calculated each hour as the average of the previous 3 operating hours.

TABLE 3 TO SUBPART CCCC OF PART 60—TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01

Dioxin/furan congener	Toxic equivalency factor
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.001

TABLE 4 TO SUBPART CCCC OF PART 60—SUMMARY OF REPORTING REQUIREMENTS[a]

Report	Due date	Contents	Reference
Preconstruction report	Prior to commencing construction	• Statement of intent to construct • Anticipated date of commencement of construction • Documentation for siting requirements • Waste management plan • Anticipated date of initial startup	§ 60.2190
Startup notification	Prior to initial startup	• Type of waste to be burned • Maximum design waste burning capacity • Anticipated maximum charge rate • If applicable, the petition for site-specific operating limits	§ 60.2195
Initial test report	No later than 60 days following the initial performance test	• Complete test report for the initial performance test • The values for the site-specific operating limits • Installation of bag leak detection system for fabric filter	§ 60.2200
Annual report	No later than 12 months following the submission of the initial test report. Subsequent reports are to be submitted no more than 12 months following the previous report.	• Name and address • Statement and signature by responsible official • Date of report • Values for the operating limits • If no deviations or malfunctions were reported, a statement that no deviations occurred during the reporting period • Highest recorded 3-hour average and the lowest 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported • Information for deviations or malfunctions recorded under § 60.2175(b)(6) and (c) through (e) • If a performance test was conducted during the reporting period, the results of the test • If a performance test was not conducted during the reporting period, a statement that the requirements of § 60.2155(a) or (b) were met • Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours but less than 2 weeks	§§ 60.2205 and 60.2210

Report	Due date	Contents	Reference
Emission limitation or operating limit deviation report.	By August 1 of that year for data collected during the first half of the calendar year. By February 1 of the following year for data collected during the second half of the calendar year.	• Dates and times of deviation • Averaged and recorded data for those dates • Duration and causes of each deviation and the corrective actions taken • Copy of operating limit monitoring data and any test reports • Dates, times, and causes for monitor downtime incidents • Whether each deviation occurred during a period of startup, shutdown, or malfunction	§ 60.2215 and 60.2220
Qualified operator deviation notification.	Within 10 days of deviation	• Statement of cause of deviation • Description of efforts to have an accessible qualified operator • The date a qualified operator will be accessible	§ 60.2225(a)(1)
Qualified operator deviation status report.	Every 4 weeks following deviation	• Description of efforts to have an accessible qualified operator • The date a qualified operator will be accessible • Request for approval to continue operation	§ 60.2225(a)(2)
Qualified operator deviation notification of resumed operation.	Prior to resuming operation	• Notification that you are resuming operation	§ 60.2225(b)

[a] This table is only a summary, see the referenced sections of the rule for the complete requirements.

Subpart DDDD—Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999

SOURCE: 65 FR 75362, Dec. 1, 2000, unless otherwise noted.

INTRODUCTION

§ 60.2500 What is the purpose of this subpart?

This subpart establishes emission guidelines and compliance schedules for the control of emissions from commercial and industrial solid waste incineration (CISWI) units. The pollutants addressed by these emission guidelines are listed in Table 2 of this subpart. These emission guidelines are developed in accordance with sections 111(d) and 129 of the Clean Air Act and subpart B of this part.

§ 60.2505 Am I affected by this subpart?

(a) If you are the Administrator of an air quality program in a State or United States protectorate with one or more existing CISWI units that commenced construction on or before November 30, 1999, you must submit a State plan to U.S. Environmental Protection Agency (EPA) that implements the emission guidelines contained in this subpart.

(b) You must submit the State plan to EPA by December 3, 2001.

§ 60.2510 Is a State plan required for all States?

No. You are not required to submit a State plan if there are no existing CISWI units in your State, and you submit a negative declaration letter in place of the State plan.

§ 60.2515 What must I include in my State plan?

(a) You must include the nine items described in paragraphs (a)(1) through (9) of this section in your State plan.

(1) Inventory of affected CISWI units, including those that have ceased operation but have not been dismantled.

(2) Inventory of emissions from affected CISWI units in your State.

(3) Compliance schedules for each affected CISWI unit.

(4) Emission limitations, operator training and qualification requirements, a waste management plan, and

operating limits for affected CISWI units that are at least as protective as the emission guidelines contained in this subpart.

(5) Performance testing, recordkeeping, and reporting requirements.

(6) Certification that the hearing on the State plan was held, a list of witnesses and their organizational affiliations, if any, appearing at the hearing, and a brief written summary of each presentation or written submission.

(7) Provision for State progress reports to EPA.

(8) Identification of enforceable State mechanisms that you selected for implementing the emission guidelines of this subpart.

(9) Demonstration of your State's legal authority to carry out the sections 111(d) and 129 State plan.

(b) Your State plan may deviate from the format and content of the emission guidelines contained in this subpart. However, if your State plan does deviate in content, you must demonstrate that your State plan is at least as protective as the emission guidelines contained in this subpart. Your State plan must address regulatory applicability, increments of progress for retrofit, operator training and qualification, a waste management plan, emission limitations, performance testing, operating limits, monitoring, recordkeeping and reporting, and air curtain incinerator requirements.

(c) You must follow the requirements of subpart B of this part (Adoption and Submittal of State Plans for Designated Facilities) in your State plan.

§60.2520 Is there an approval process for my State plan?

Yes. The EPA will review your State plan according to §60.27.

§60.2525 What if my State plan is not approvable?

If you do not submit an approvable State plan (or a negative declaration letter) by December 2, 2002, EPA will develop a Federal plan according to §60.27 to implement the emission guidelines contained in this subpart. Owners and operators of CISWI units not covered by an approved State plan must comply with the Federal plan. The Federal plan is an interim action and will be automatically withdrawn when your State plan is approved.

§60.2530 Is there an approval process for a negative declaration letter?

No. The EPA has no formal review process for negative declaration letters. Once your negative declaration letter has been received, EPA will place a copy in the public docket and publish a notice in the FEDERAL REGISTER. If, at a later date, an existing CISWI unit is found in your State, the Federal plan implementing the emission guidelines contained in this subpart would automatically apply to that CISWI unit until your State plan is approved.

§60.2535 What compliance schedule must I include in my State plan?

(a) Your State plan must include compliance schedules that require CISWI units to achieve final compliance as expeditiously as practicable after approval of the State plan but not later than the earlier of the two dates specified in paragraphs (a)(1) and (2) of this section.

(1) December 1, 2005.

(2) Three years after the effective date of State plan approval.

(b) For compliance schedules more than 1 year following the effective date of State plan approval, State plans must include dates for enforceable increments of progress as specified in §60.2580.

§60.2540 Are there any State plan requirements for this subpart that apply instead of the requirements specified in subpart B?

Yes. Subpart B establishes general requirements for developing and processing section 111(d) plans. This subpart applies instead of the requirements in subpart B of this part for paragraphs (a) and (b) of this section:

(a) State plans developed to implement this subpart must be as protective as the emission guidelines contained in this subpart. State plans must require all CISWI units to comply by December 1, 2005 or 3 years after the effective date of State plan approval, whichever is sooner. This applies instead of the option for case-by-case less stringent emission standards and longer compliance schedules in § 60.24(f).

(b) State plans developed to implement this subpart are required to include two increments of progress for the affected CISWI units. These two minimum increments are the final control plan submittal date and final compliance date in § 60.21(h)(1) and (5). This applies instead of the requirement of § 60.24(e)(1) that would require a State plan to include all five increments of progress for all CISWI units.

§ 60.2545 Does this subpart directly affect CISWI unit owners and operators in my State?

(a) No. This subpart does not directly affect CISWI unit owners and operators in your State. However, CISWI unit owners and operators must comply with the State plan you develop to implement the emission guidelines contained in this subpart. States may choose to incorporate the model rule text directly in their State plan.

(b) If you do not submit an approvable plan to implement and enforce the guidelines contained in this subpart by December 2, 2002, the EPA will implement and enforce a Federal plan, as provided in § 60.2525, to ensure that each unit within your State reaches compliance with all the provisions of this subpart by December 1, 2005.

APPLICABILITY OF STATE PLANS

§ 60.2550 What CISWI units must I address in my State plan?

(a) Your State plan must address incineration units that meet all three criteria described in paragraphs (a)(1) through (3) of this section.

(1) Incineration units in your State that commenced construction on or before November 30, 1999.

(2) Incineration units that meet the definition of a CISWI unit as defined in § 60.2875.

(3) Incineration units not exempt under § 60.2555.

(b) If the owner or operator of a CISWI unit makes changes that meet the definition of modification or reconstruction on or after June 1, 2001, the CISWI unit becomes subject to subpart CCCC of this part and the State plan no longer applies to that unit.

(c) If the owner or operator of a CISWI unit makes physical or operational changes to an existing CISWI unit primarily to comply with your State plan, subpart CCCC of this part does not apply to that unit. Such changes do not qualify as modifications or reconstructions under subpart CCCC of this part.

§ 60.2555 What combustion units are exempt from my State plan?

This subpart exempts fifteen types of units described in paragraphs (a) through (o) of this section.

(a) *Pathological waste incineration units.* Incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste as defined in § 60.2875 are not subject to this subpart if you meet the two requirements specified in paragraphs (a)(1) and (2) of this section.

(1) Notify the Administrator that the unit meets these criteria.

(2) Keep records on a calendar quarter basis of the weight of pathological waste, low-level radioactive waste, and/or chemotherapeutic waste burned, and the weight of all other fuels and wastes burned in the unit.

(b) *Agricultural waste incineration units.* Incineration units burning 90 percent or more by weight (on a calendar quarter basis and excluding the weight of auxiliary fuel and combustion air) of agricultural wastes as defined in § 60.2875 are not subject to this subpart if you meet the two requirements specified in paragraphs (b)(1) and (2) of this section.

(1) Notify the Administrator that the unit meets these criteria.

(2) Keep records on a calendar quarter basis of the weight of agricultural waste burned, and the weight of all other fuels and wastes burned in the unit.

(c) *Municipal waste combustion units.* Incineration units that meet either of the two criteria specified in paragraphs (c)(1) or (2) of this section.

(1) Are regulated under subpart Ea of this part (Standards of Performance for Municipal Waste Combustors); subpart

Eb of this part (Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994); subpart Cb of this part (Emission Guidelines and Compliance Time for Large Municipal Combustors that are Constructed on or Before September 20, 1994); subpart AAAA of this part (Standards of Performance for New Stationary Sources: Small Municipal Waste Combustion Units); or subpart BBBB of this part (Emission Guidelines for Existing Stationary Sources: Small Municipal Waste Combustion Units).

(2) Burn greater than 30 percent municipal solid waste or refuse-derived fuel, as defined in subpart Ea, subpart Eb, subpart AAAA, and subpart BBBB, and that have the capacity to burn less than 35 tons (32 megagrams) per day of municipal solid waste or refuse-derived fuel, if you meet the two requirements in paragraphs (c)(2)(i) and (ii) of this section.

(i) Notify the Administrator that the unit meets these criteria.

(ii) Keep records on a calendar quarter basis of the weight of municipal solid waste burned, and the weight of all other fuels and wastes burned in the unit.

(d) *Medical waste incineration units.* Incineration units regulated under subpart Ec of this part (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996) or subpart Ca of this part (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators).

(e) *Small power production facilities.* Units that meet the three requirements specified in paragraphs (e)(1) through (3) of this section.

(1) The unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.

(3) You notify the Administrator that the unit meets all of these criteria.

(f) *Cogeneration facilities.* Units that meet the three requirements specified in paragraphs (f)(1) through (3) of this section.

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You notify the Administrator that the unit meets all of these criteria.

(g) *Hazardous waste combustion units.* Units that meet either of the two criteria specified in paragraph (g)(1) or (2) of this section.

(1) Units for which you are required to get a permit under section 3005 of the Solid Waste Disposal Act.

(2) Units regulated under subpart EEE of 40 CFR part 63 (National Emission Standards for Hazardous Air Pollutants from Hazardous Waste Combustors).

(h) *Materials recovery units.* Units that combust waste for the primary purpose of recovering metals, such as primary and secondary smelters.

(i) *Air curtain incinerators.* Air curtain incinerators that burn only the materials listed in paragraphs (i)(1) through (3) of this section are only required to meet the requirements under ''Air Curtain Incinerators'' (§§ 60.2810 through 60.2870).

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

(j) *Cyclonic barrel burners.* (See § 60.2875)

(k) *Rack, part, and drum reclamation units.* (See § 60.2875)

(l) *Cement kilns.* Kilns regulated under subpart LLL of part 63 of this chapter (National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry).

(m) *Sewage sludge incinerators.* Incineration units regulated under subpart O of this part (Standards of Performance for Sewage Treatment Plants).

(n) *Chemical recovery units.* Combustion units burning materials to recover chemical constituents or to produce chemical compounds where there is an existing commercial market for such recovered chemical constituents or compounds. The seven types of units described in paragraphs (n)(1) through (7) of this section are considered chemical recovery units.

(1) Units burning only pulping liquors (*i.e.*, black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process.

(2) Units burning only spent sulfuric acid used to produce virgin sulfuric acid.

(3) Units burning only wood or coal feedstock for the production of charcoal.

(4) Units burning only manufacturing byproduct streams/residues containing catalyst metals which are reclaimed and reused as catalysts or used to produce commercial grade catalysts.

(5) Units burning only coke to produce purified carbon monoxide that is used as an intermediate in the production of other chemical compounds.

(6) Units burning only hydrocarbon liquids or solids to produce hydrogen, carbon monoxide, synthesis gas, or other gases for use in other manufacturing processes.

(7) Units burning only photographic film to recover silver.

(o) *Laboratory analysis units.* Units that burn samples of materials for the purpose of chemical or physical analysis.

§ 60.2558 What if a chemical recovery unit is not listed in § 60.2555(n)?

(a) If a chemical recovery unit is not listed in § 60.2555(n), the owner or operator of the unit can petition the Administrator to add the unit to the list. The petition must contain the six items in paragraphs (a)(1) through (6) of this section.

(1) A description of the source of the materials being burned.

(2) A description of the composition of the materials being burned, highlighting the chemical constituents in these materials that are recovered.

(3) A description (including a process flow diagram) of the process in which the materials are burned, highlighting the type, design, and operation of the equipment used in this process.

(4) A description (including a process flow diagram) of the chemical constituent recovery process, highlighting the type, design, and operation of the equipment used in this process.

(5) A description of the commercial markets for the recovered chemical constituents and their use.

(6) The composition of the recovered chemical constituents and the composition of these chemical constituents as they are bought and sold in commercial markets.

(b) Until the Administrator approves the petition, the incineration unit is covered by this subpart.

(c) If a petition is approved, the Administrator will amend § 60.2555(n) to add the unit to the list of chemical recovery units.

USE OF MODEL RULE

§ 60.2560 What is the “model rule” in this subpart?

(a) The model rule is the portion of these emission guidelines (§§ 60.2575 through 60.2875) that addresses the regulatory requirements applicable to CISWI units. The model rule provides these requirements in regulation format. You must develop a State plan that is at least as protective as the model rule. You may use the model rule language as part of your State plan. Alternative language may be used in your State plan if you demonstrate that the alternative language is at least as protective as the model rule contained in this subpart.

(b) In the model rule of §§ 60.2575 to 60.2875, ‘‘you’’ means the owner or operator of a CISWI unit.

§ 60.2565 How does the model rule relate to the required elements of my State plan?

Use the model rule to satisfy the State plan requirements specified in § 60.2515(a)(4) and (5).

§ 60.2570 What are the principal components of the model rule?

The model rule contains the eleven major components listed in paragraphs (a) through (k) of this section.

(a) Increments of progress toward compliance.

(b) Waste management plan.

(c) Operator training and qualification.

(d) Emission limitations and operating limits.

(e) Performance testing.

(f) Initial compliance requirements.

(g) Continuous compliance requirements.

(h) Monitoring.

(i) Recordkeeping and reporting.

(j) Definitions.

(k) Tables.

MODEL RULE—INCREMENTS OF PROGRESS

§60.2575 What are my requirements for meeting increments of progress and achieving final compliance?

If you plan to achieve compliance more than 1 year following the effective date of State plan approval, you must meet the two increments of progress specified in paragraphs (a) and (b) of this section.

(a) Submit a final control plan.

(b) Achieve final compliance.

§60.2580 When must I complete each increment of progress?

Table 1 of this subpart specifies compliance dates for each of the increments of progress.

§60.2585 What must I include in the notifications of achievement of increments of progress?

Your notification of achievement of increments of progress must include the three items specified in paragraphs (a) through (c) of this section.

(a) Notification that the increment of progress has been achieved.

(b) Any items required to be submitted with each increment of progress.

(c) Signature of the owner or operator of the CISWI unit.

§60.2590 When must I submit the notifications of achievement of increments of progress?

Notifications for achieving increments of progress must be postmarked no later than 10 business days after the compliance date for the increment.

§60.2595 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the date for that increment of progress in Table 1 of this subpart. You must inform the Administrator that you did not meet the increment, and you must continue to submit reports each subsequent calendar month until the increment of progress is met.

§60.2600 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must satisfy the two requirements specified in paragraphs (a) and (b) of this section.

(a) Submit the final control plan that includes the five items described in paragraphs (a)(1) through (5) of this section.

(1) A description of the devices for air pollution control and process changes that you will use to comply with the emission limitations and other requirements of this subpart.

(2) The type(s) of waste to be burned.

(3) The maximum design waste burning capacity.

(4) The anticipated maximum charge rate.

(5) If applicable, the petition for site-specific operating limits under §60.2680.

(b) Maintain an onsite copy of the final control plan.

§60.2605 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete all process changes and retrofit construction of control devices, as specified in the final control plan, so that, if the affected CISWI unit is brought online, all necessary process changes and air pollution control devices would operate as designed.

§60.2610 What must I do if I close my CISWI unit and then restart it?

(a) If you close your CISWI unit but will restart it prior to the final compliance date in your State plan, you must meet the increments of progress specified in §60.2575.

(b) If you close your CISWI unit but will restart it after your final compliance date, you must complete emission control retrofits and meet the emission limitations and operating limits on the date your unit restarts operation.

§ 60.2615 What must I do if I plan to permanently close my CISWI unit and not restart it?

If you plan to close your CISWI unit rather than comply with the State plan, submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

MODEL RULE—WASTE MANAGEMENT PLAN

§ 60.2620 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the methods used to reduce or separate certain components of solid waste from the waste stream in order to reduce or eliminate toxic emissions from incinerated waste.

§ 60.2625 When must I submit my waste management plan?

You must submit a waste management plan no later than the date specified in Table 1 of this subpart for submittal of the final control plan.

§ 60.2630 What should I include in my waste management plan?

A waste management plan must include consideration of the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The plan must identify any additional waste management measures, and the source must implement those measures considered practical and feasible, based on the effectiveness of waste management measures already in place, the costs of additional measures, the emissions reductions expected to be achieved, and any other environmental or energy impacts they might have.

MODEL RULE—OPERATOR TRAINING AND QUALIFICATION

§ 60.2635 What are the operator training and qualification requirements?

(a) No CISWI unit can be operated unless a fully trained and qualified CISWI unit operator is accessible, either at the facility or can be at the facility within 1 hour. The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified CISWI unit operators are temporarily not accessible, you must follow the procedures in § 60.2665.

(b) Operator training and qualification must be obtained through a State-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the three elements described in paragraphs (c)(1) through (3) of this section.

(1) Training on the eleven subjects listed in paragraphs (c)(1)(i) through (xi) of this section.

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Actions to correct malfunctions or conditions that may lead to malfunction.

(viii) Bottom and fly ash characteristics and handling procedures.

(ix) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(x) Pollution prevention.

(xi) Waste management practices.

(2) An examination designed and administered by the instructor.

(3) Written material covering the training course topics that can serve as reference material following completion of the course.

§ 60.2640 When must the operator training course be completed?

The operator training course must be completed by the later of the three dates specified in paragraphs (a) through (c) of this section.

(a) The final compliance date (Increment 2).

(b) Six months after CISWI unit startup.

(c) Six months after an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit.

§ 60.2645 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under § 60.2635(b).

(b) Qualification is valid from the date on which the training course is completed and the operator successfully passes the examination required under § 60.2635(c)(2).

§ 60.2650 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the five topics described in paragraphs (a) through (e) of this section.

(a) Update of regulations.

(b) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling.

(c) Inspection and maintenance.

(d) Responses to malfunctions or conditions that may lead to malfunction.

(e) Discussion of operating problems encountered by attendees.

§ 60.2655 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification by one of the two methods specified in paragraphs (a) and (b) of this section.

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in § 60.2650.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in § 60.2645(a).

§ 60.2660 What site-specific documentation is required?

(a) Documentation must be available at the facility and readily accessible for all CISWI unit operators that addresses the ten topics described in paragraphs (a)(1) through (10) of this section. You must maintain this information and the training records required by paragraph (c) of this section in a manner that they can be readily accessed and are suitable for inspection upon request.

(1) Summary of the applicable standards under this subpart.

(2) Procedures for receiving, handling, and charging waste.

(3) Incinerator startup, shutdown, and malfunction procedures.

(4) Procedures for maintaining proper combustion air supply levels.

(5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(6) Monitoring procedures for demonstrating compliance with the incinerator operating limits.

(7) Reporting and recordkeeping procedures.

(8) The waste management plan required under §§ 60.2620 through 60.2630.

(9) Procedures for handling ash.

(10) A list of the wastes burned during the performance test.

(b) You must establish a program for reviewing the information listed in paragraph (a) of this section with each incinerator operator.

(1) The initial review of the information listed in paragraph (a) of this section must be conducted by the later of the three dates specified in paragraphs (b)(1)(i) through (iii) of this section.

(i) The final compliance date (Increment 2).

(ii) Six months after CISWI unit startup.

(iii) Six months after being assigned to operate the CISWI unit.

(2) Subsequent annual reviews of the information listed in paragraph (a) of this section must be conducted no later than 12 months following the previous review.

(c) You must also maintain the information specified in paragraphs (c)(1) through (3) of this section.

(1) Records showing the names of CISWI unit operators who have completed review of the information in § 60.2660(a) as required by § 60.2660(b), including the date of the initial review and all subsequent annual reviews.

(2) Records showing the names of the CISWI operators who have completed the operator training requirements under § 60.2635, met the criteria for qualification under § 60.2645, and maintained or renewed their qualification under § 60.2650 or § 60.2655. Records must include documentation of training, the dates of the initial refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(3) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

§ 60.2665 What if all the qualified operators are temporarily not accessible?

If all qualified operators are temporarily not accessible (i.e., not at the facility and not able to be at the facility within 1 hour), you must meet one of the two criteria specified in paragraphs (a) and (b) of this section, depending on the length of time that a qualified operator is not accessible.

(a) When all qualified operators are not accessible for more than 8 hours, but less than 2 weeks, the CISWI unit may be operated by other plant personnel familiar with the operation of the CISWI unit who have completed a review of the information specified in § 60.2660(a) within the past 12 months. However, you must record the period when all qualified operators were not accessible and include this deviation in the annual report as specified under § 60.2770.

(b) When all qualified operators are not accessible for 2 weeks or more, you must take the two actions that are described in paragraphs (b)(1) and (2) of this section.

(1) Notify the Administrator of this deviation in writing within 10 days. In the notice, state what caused this deviation, what you are doing to ensure that a qualified operator is accessible, and when you anticipate that a qualified operator will be accessible.

(2) Submit a status report to the Administrator every 4 weeks outlining what you are doing to ensure that a qualified operator is accessible, stating when you anticipate that a qualified operator will be accessible and requesting approval from the Administrator to continue operation of the CISWI unit. You must submit the first status report 4 weeks after you notify the Administrator of the deviation under paragraph (b)(1) of this section. If the Administrator notifies you that your request to continue operation of the CISWI unit is disapproved, the CISWI unit may continue operation for 90 days, then must cease operation. Operation of the unit may resume if you meet the two requirements in paragraphs (b)(2)(i) and (ii) of this section.

(i) A qualified operator is accessible as required under § 60.2635(a).

(ii) You notify the Administrator that a qualified operator is accessible and that you are resuming operation.

MODEL RULE—EMISSION LIMITATIONS AND OPERATING LIMITS

§ 60.2670 What emission limitations must I meet and by when?

You must meet the emission limitations specified in Table 2 of this subpart on the date the initial performance test is required or completed (whichever is earlier).

§ 60.2675 What operating limits must I meet and by when?

(a) If you use a wet scrubber to comply with the emission limitations, you must establish operating limits for four operating parameters (as specified in Table 3 of this subpart) as described in paragraphs (a)(1) through (4) of this section during the initial performance test.

(1) Maximum charge rate, calculated using one of the two different procedures in paragraph (a)(1)(i) or (ii), as appropriate.

(i) For continuous and intermittent units, maximum charge rate is 110 percent of the average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(ii) For batch units, maximum charge rate is 110 percent of the daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(2) Minimum pressure drop across the wet scrubber, which is calculated as 90 percent of the average pressure drop across the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations; or minimum amperage to the wet scrubber, which is calculated as 90 percent of the average amperage to the wet scrubber measured during the most recent performance test demonstrating compliance with the particulate matter emission limitations.

(3) Minimum scrubber liquor flow rate, which is calculated as 90 percent of the average liquor flow rate at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with all applicable emission limitations.

(4) Minimum scrubber liquor pH, which is calculated as 90 percent of the average liquor pH at the inlet to the wet scrubber measured during the most recent performance test demonstrating compliance with the HCl emission limitation.

(b) You must meet the operating limits established during the initial performance test on the date the initial performance test is required or completed (whichever is earlier).

(c) If you use a fabric filter to comply with the emission limitations, you must operate each fabric filter system such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month period. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm shall be counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alarm time shall be counted as the actual amount of time taken by you to initiate corrective action.

§ 60.2680 What if I do not use a wet scrubber to comply with the emission limitations?

If you use an air pollution control device other than a wet scrubber, or limit emissions in some other manner, to comply with the emission limitations under § 60.2670, you must petition the Administrator for specific operating limits to be established during the initial performance test and continuously monitored thereafter. You must not conduct the initial performance test until after the petition has been approved by the Administrator. Your petition must include the five items listed in paragraphs (a) through (e) of this section.

(a) Identification of the specific parameters you propose to use as additional operating limits.

(b) A discussion of the relationship between these parameters and emissions of regulated pollutants, identifying how emissions of regulated pollutants change with changes in these parameters, and how limits on these parameters will serve to limit emissions of regulated pollutants.

(c) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the operating limits on these parameters.

(d) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments.

(e) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

§ 60.2685 What happens during periods of startup, shutdown, and malfunction?

(a) The emission limitations and operating limits apply at all times except during CISWI unit startups, shutdowns, or malfunctions.

(b) Each malfunction must last no longer than 3 hours.

MODEL RULE—PERFORMANCE TESTING

§ 60.2690 How do I conduct the initial and annual performance test?

(a) All performance tests must consist of a minimum of three test runs conducted under conditions representative of normal operations.

(b) You must document that the waste burned during the performance test is representative of the waste burned under normal operating conditions by maintaining a log of the quantity of waste burned (as required in § 60.2740(b)(1)) and the types of waste burned during the performance test.

(c) All performance tests must be conducted using the minimum run duration specified in Table 2 of this subpart.

(d) Method 1 of appendix A of this part must be used to select the sampling location and number of traverse points.

(e) Method 3A or 3B of appendix A of this part must be used for gas composition analysis, including measurement of oxygen concentration. Method 3A or 3B of appendix A of this part must be used simultaneously with each method.

(f) All pollutant concentrations, except for opacity, must be adjusted to 7 percent oxygen using Equation 1 of this section:

$$C_{adj} = C_{meas}\ (20.9 - 7)/(20.9 - \%O_2) \qquad \text{(Eq. 1)}$$

Where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen;

C_{meas} = pollutant concentration measured on a dry basis;

$(20.9 - 7)$ = 20.9 percent oxygen − 7 percent oxygen (defined oxygen correction basis);

20.9 = oxygen concentration in air, percent; and

$\%O_2$ = oxygen concentration measured on a dry basis, percent.

(g) You must determine dioxins/furans toxic equivalency by following the procedures in paragraphs (g)(1) through (3) of this section.

(1) Measure the concentration of each dioxin/furan tetra- through octa-congener emitted using EPA Method 23.

(2) For each dioxin/furan congener measured in accordance with paragraph (g)(1) of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in Table 4 of this subpart.

(3) Sum the products calculated in accordance with paragraph (g)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

§ 60.2695 How are the performance test data used?

You use results of performance tests to demonstrate compliance with the emission limitations in Table 2 of this subpart.

MODEL RULE—INITIAL COMPLIANCE REQUIREMENTS

§ 60.2700 How do I demonstrate initial compliance with the emission limitations and establish the operating limits?

You must conduct an initial performance test, as required under § 60.8, to determine compliance with the emission limitations in Table 2 of this subpart and to establish operating limits using the procedure in § 60.2675 or § 60.2680. The initial performance test must be conducted using the test methods listed in Table 2 of this subpart and the procedures in § 60.2690.

§ 60.2705 By what date must I conduct the initial performance test?

The initial performance test must be conducted no later than 180 days after your final compliance date. Your final compliance date is specified in Table 1 of this subpart.

MODEL RULE—CONTINUOUS COMPLIANCE REQUIREMENTS

§ 60.2710 How do I demonstrate continuous compliance with the emission limitations and the operating limits?

(a) You must conduct an annual performance test for particulate matter, hydrogen chloride, and opacity for each CISWI unit as required under § 60.8 to determine compliance with the emission limitations. The annual performance test must be conducted using the test methods listed in Table 2 of this subpart and the procedures in § 60.2690.

(b) You must continuously monitor the operating parameters specified in § 60.2675 or established under § 60.2680. Operation above the established maximum or below the established minimum operating limits constitutes a deviation from the established operating limits. Three-hour rolling average values are used to determine compliance (except for baghouse leak detection system alarms) unless a different averaging period is established under § 60.2680. Operating limits do not apply during performance tests.

(c) You must only burn the same types of waste used to establish operating limits during the performance test.

§60.2715 By what date must I conduct the annual performance test?

You must conduct annual performance tests for particulate matter, hydrogen chloride, and opacity within 12 months following the initial performance test. Conduct subsequent annual performance tests within 12 months following the previous one.

§60.2720 May I conduct performance testing less often?

(a) You can test less often for a given pollutant if you have test data for at least 3 years, and all performance tests for the pollutant (particulate matter, hydrogen chloride, or opacity) over 3 consecutive years show that you comply with the emission limitation. In this case, you do not have to conduct a performance test for that pollutant for the next 2 years. You must conduct a performance test during the third year and no more than 36 months following the previous performance test.

(b) If your CISWI unit continues to meet the emission limitation for particulate matter, hydrogen chloride, or opacity, you may choose to conduct performance tests for these pollutants every third year, but each test must be within 36 months of the previous performance test.

(c) If a performance test shows a deviation from an emission limitation for particulate matter, hydrogen chloride, or opacity, you must conduct annual performance tests for that pollutant until all performance tests over a 3-year period show compliance.

§60.2725 May I conduct a repeat performance test to establish new operating limits?

(a) Yes. You may conduct a repeat performance test at any time to establish new values for the operating limits. The Administrator may request a repeat performance test at any time.

(b) You must repeat the performance test if your feed stream is different than the feed streams used during any performance test used to demonstrate compliance.

MODEL RULE—MONITORING

§60.2730 What monitoring equipment must I install and what parameters must I monitor?

(a) If you are using a wet scrubber to comply with the emission limitation under §60.2670, you must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the value of the operating parameters used to determine compliance with the operating limits listed in Table 3 of this subpart. These devices (or methods) must measure and record the values for these operating parameters at the frequencies indicated in Table 3 of this subpart at all times except as specified in §60.2735(a).

(b) If you use a fabric filter to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate a bag leak detection system as specified in paragraphs (b)(1) through (8) of this section.

(1) You must install and operate a bag leak detection system for each exhaust stack of the fabric filter.

(2) Each bag leak detection system must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.

(5) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(6) The bag leak detection system must be equipped with an alarm system that will sound automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.

(7) For positive pressure fabric filter systems, a bag leak detection system must be installed in each baghouse

compartment or cell. For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(c) If you are using something other than a wet scrubber to comply with the emission limitations under § 60.2670, you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor compliance with the site-specific operating limits established using the procedures in § 60.2680.

§ 60.2735 Is there a minimum amount of monitoring data I must obtain?

(a) Except for monitoring malfunctions, associated repairs, and required quality assurance or quality control activities (including, as applicable, calibration checks and required zero and span adjustments of the monitoring system), you must conduct all monitoring at all times the CISWI unit is operating.

(b) Do not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or quality control activities for meeting the requirements of this subpart, including data averages and calculations. You must use all the data collected during all other periods in assessing compliance with the operating limits.

MODEL RULE—RECORDKEEPING AND REPORTING

§ 60.2740 What records must I keep?

You must maintain the 13 items (as applicable) as specified in paragraphs (a) through (m) of this section for a period of at least 5 years:

(a) Calendar date of each record.

(b) Records of the data described in paragraphs (b)(1) through (6) of this section:

(1) The CISWI unit charge dates, times, weights, and hourly charge rates.

(2) Liquor flow rate to the wet scrubber inlet every 15 minutes of operation, as applicable.

(3) Pressure drop across the wet scrubber system every 15 minutes of operation or amperage to the wet scrubber every 15 minutes of operation, as applicable.

(4) Liquor pH as introduced to the wet scrubber every 15 minutes of operation, as applicable.

(5) For affected CISWI units that establish operating limits for controls other than wet scrubbers under § 60.2680, you must maintain data collected for all operating parameters used to determine compliance with the operating limits.

(6) If a fabric filter is used to comply with the emission limitations, you must record the date, time, and duration of each alarm and the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. You must also record the percent of operating time during each 6-month period that the alarm sounds, calculated as specified in § 60.2675(c).

(c) Identification of calendar dates and times for which monitoring systems used to monitor operating limits were inoperative, inactive, malfunctioning, or out of control (except for downtime associated with zero and span and other routine calibration checks). Identify the operating parameters not measured, the duration, reasons for not obtaining the data, and a description of corrective actions taken.

(d) Identification of calendar dates, times, and durations of malfunctions, and a description of the malfunction and the corrective action taken.

(e) Identification of calendar dates and times for which data show a deviation from the operating limits in Table 3 of this subpart or a deviation from other operating limits established under § 60.2680 with a description of the deviations, reasons for such deviations, and a description of corrective actions taken.

(f) The results of the initial, annual, and any subsequent performance tests conducted to determine compliance with the emission limits and/or to establish operating limits, as applicable. Retain a copy of the complete test report including calculations.

(g) Records showing the names of CISWI unit operators who have completed review of the information in § 60.2660(a) as required by § 60.2660(b), including the date of the initial review and all subsequent annual reviews.

(h) Records showing the names of the CISWI operators who have completed the operator training requirements under § 60.2635, met the criteria for qualification under § 60.2645, and maintained or renewed their qualification under § 60.2650 or § 60.2655. Records must include documentation of training, the dates of the initial and refresher training, and the dates of their qualification and all subsequent renewals of such qualifications.

(i) For each qualified operator, the phone and/or pager number at which they can be reached during operating hours.

(j) Records of calibration of any monitoring devices as required under § 60.2730.

(k) Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.

(l) The information listed in § 60.2660(a).

(m) On a daily basis, keep a log of the quantity of waste burned and the types of waste burned (always required).

§ 60.2745 Where and in what format must I keep my records?

All records must be available onsite in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

§ 60.2750 What reports must I submit?

See Table 5 of this subpart for a summary of the reporting requirements.

§ 60.2755 When must I submit my waste management plan?

You must submit the waste management plan no later than the date specified in Table 1 of this subpart for submittal of the final control plan.

§ 60.2760 What information must I submit following my initial performance test?

You must submit the information specified in paragraphs (a) through (c) of this section no later than 60 days following the initial performance test. All reports must be signed by the facilities manager.

(a) The complete test report for the initial performance test results obtained under § 60.2700, as applicable.

(b) The values for the site-specific operating limits established in § 60.2675 or § 60.2680.

(c) If you are using a fabric filter to comply with the emission limitations, documentation that a bag leak detection system has been installed and is being operated, calibrated, and maintained as required by § 60.2730(b).

§ 60.2765 When must I submit my annual report?

You must submit an annual report no later than 12 months following the submission of the information in § 60.2760. You must submit subsequent reports no more than 12 months following the previous report. (If the unit is subject to permitting requirements under title V of the Clean Air Act, you may be required by the permit to submit these reports more frequently.)

§ 60.2770 What information must I include in my annual report?

The annual report required under § 60.2765 must include the ten items listed in paragraphs (a) through (j) of this section. If you have a deviation from the operating limits or the emission limitations, you must also submit deviation reports as specified in §§ 60.2775, 60.2780, and 60.2785.

(a) Company name and address.

(b) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(c) Date of report and beginning and ending dates of the reporting period.

(d) The values for the operating limits established pursuant to § 60.2675 or § 60.2680.

(e) If no deviation from any emission limitation or operating limit that applies to you has been reported, a statement that there was no deviation from the emission limitations or operating limits during the reporting period, and that no monitoring system used to determine compliance with the operating limits was inoperative, inactive, malfunctioning or out of control.

(f) The highest recorded 3-hour average and the lowest recorded 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported.

(g) Information recorded under § 60.2740(b)(6) and (c) through (e) for the calendar year being reported.

(h) If a performance test was conducted during the reporting period, the results of that test.

(i) If you met the requirements of § 60.2720(a) or (b), and did not conduct a performance test during the reporting period, you must state that you met the requirements of § 60.2720(a) or (b), and, therefore, you were not required to conduct a performance test during the reporting period.

(j) Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours, but less than 2 weeks.

§ 60.2775 What else must I report if I have a deviation from the operating limits or the emission limitations?

(a) You must submit a deviation report if any recorded 3-hour average parameter level is above the maximum operating limit or below the minimum operating limit established under this subpart, if the bag leak detection system alarm sounds for more than 5 percent of the operating time for the 6-month reporting period, or if a performance test was conducted that deviated from any emission limitation.

(b) The deviation report must be submitted by August 1 of that year for data collected during the first half of the calendar year (January 1 to June 30), and by February 1 of the following year for data you collected during the second half of the calendar year (July 1 to December 31).

§ 60.2780 What must I include in the deviation report?

In each report required under § 60.2775, for any pollutant or parameter that deviated from the emission limitations or operating limits specified in this subpart, include the six items described in paragraphs (a) through (f) of this section.

(a) The calendar dates and times your unit deviated from the emission limitations or operating limit requirements.

(b) The averaged and recorded data for those dates.

(c) Duration and causes of each deviation from the emission limitations or operating limits and your corrective actions.

(d) A copy of the operating limit monitoring data during each deviation and any test report that documents the emission levels.

(e) The dates, times, number, duration, and causes for monitoring downtime incidents (other than downtime associated with zero, span, and other routine calibration checks).

(f) Whether each deviation occurred during a period of startup, shutdown, or malfunction, or during another period.

§ 60.2785 What else must I report if I have a deviation from the requirement to have a qualified operator accessible?

(a) If all qualified operators are not accessible for 2 weeks or more, you must take the two actions in paragraphs (a)(1) and (2) of this section.

(1) Submit a notification of the deviation within 10 days that includes the three items in paragraphs (a)(1)(i) through (iii) of this section.

(i) A statement of what caused the deviation.

(ii) A description of what you are doing to ensure that a qualified operator is accessible.

(iii) The date when you anticipate that a qualified operator will be available.

(2) Submit a status report to the Administrator every 4 weeks that includes the three items in paragraphs (a)(2)(i) through (iii) of this section.

(i) A description of what you are doing to ensure that a qualified operator is accessible.

(ii) The date when you anticipate that a qualified operator will be accessible.

(iii) Request approval from the Administrator to continue operation of the CISWI unit.

(b) If your unit was shut down by the Administrator, under the provisions of § 60.2665(b)(2), due to a failure to provide an accessible qualified operator, you must notify the Administrator that you are resuming operation once a qualified operator is accessible.

§ 60.2790 Are there any other notifications or reports that I must submit?

Yes. You must submit notifications as provided by § 60.7.

§ 60.2795 In what form can I submit my reports?

Submit initial, annual, and deviation reports electronically or in paper format, postmarked on or before the submittal due dates.

§ 60.2800 Can reporting dates be changed?

If the Administrator agrees, you may change the semiannual or annual reporting dates. See § 60.19(c) for procedures to seek approval to change your reporting date.

MODEL RULE—TITLE V OPERATING PERMITS

§ 60.2805 Am I required to apply for and obtain a title V operating permit for my unit?

Yes. Each CISWI unit must operate pursuant to a permit issued under section 129(e) and title V of the Clean Air Act by the later of the two dates in paragraphs (a) and (b) of this section.

(a) Thirty-six months after December 1, 2000.

(b) The effective date of the title V permit program to which your unit is subject. If your unit is subject to title V as a result of some triggering requirement(s) other than this subpart (for example, being a major source), then your unit may be required to apply for and obtain a title V permit prior to the deadlines noted above. If more than one requirement triggers the requirement to apply for a title V permit, the 12-month timeframe for filing a title V application is triggered by the requirement which first causes the source to be subject to title V.

MODEL RULE—AIR CURTAIN INCINERATORS

§ 60.2810 What is an air curtain incinerator?

(a) An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

(b) Air curtain incinerators that burn only the materials listed in paragraphs (b)(1) through (3) of this section are only required to meet the requirements under ''Air Curtain Incinerators'' (§§ 60.2810 through 60.2870).

(1) 100 percent wood waste.

(2) 100 percent clean lumber.

(3) 100 percent mixture of only wood waste, clean lumber, and/or yard waste.

§ 60.2815 What are my requirements for meeting increments of progress and achieving final compliance?

If you plan to achieve compliance more than 1 year following the effective date of State plan approval, you must meet the two increments of progress specified in paragraphs (a) and (b) of this section.

(a) Submit a final control plan.

(b) Achieve final compliance.

§ 60.2820 When must I complete each increment of progress?

Table 1 of this subpart specifies compliance dates for each of the increments of progress.

§ 60.2825 What must I include in the notifications of achievement of increments of progress?

Your notification of achievement of increments of progress must include the three items described in paragraphs (a) through (c) of this section.

(a) Notification that the increment of progress has been achieved.

(b) Any items required to be submitted with each increment of progress (see § 60.2840).

(c) Signature of the owner or operator of the incinerator.

§ 60.2830 When must I submit the notifications of achievement of increments of progress?

Notifications for achieving increments of progress must be postmarked no later than 10 business days after the compliance date for the increment.

§ 60.2835 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the date for that increment of progress in Table 1 of this subpart. You must inform the Administrator that you did not meet the increment, and you must continue to submit reports each subsequent calendar month until the increment of progress is met.

§ 60.2840 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must satisfy the two requirements specified in paragraphs (a) and (b) of this section.

(a) Submit the final control plan, including a description of any devices for air pollution control and any process changes that you will use to comply with the emission limitations and other requirements of this subpart.

(b) Maintain an onsite copy of the final control plan.

§ 60.2845 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete all process changes and retrofit construction of control devices, as specified in the final control plan, so that, if the affected incinerator is brought online, all necessary process changes and air pollution control devices would operate as designed.

§ 60.2850 What must I do if I close my air curtain incinerator and then restart it?

(a) If you close your incinerator but will reopen it prior to the final compliance date in your State plan, you must meet the increments of progress specified in § 60.2815.

(b) If you close your incinerator but will restart it after your final compliance date, you must complete emission control retrofits and meet the emission limitations on the date your incinerator restarts operation.

§ 60.2855 What must I do if I plan to permanently close my air curtain incinerator and not restart it?

If you plan to close your incinerator rather than comply with the State plan, submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

§ 60.2860 What are the emission limitations for air curtain incinerators?

(a) After the date the initial stack test is required or completed (whichever is earlier), you must meet the limitations in paragraphs (a)(1) and (2) of this section.

(1) The opacity limitation is 10 percent (6-minute average), except as described in paragraph (a)(2) of this section.

(2) The opacity limitation is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) Except during malfunctions, the requirements of this subpart apply at all times, and each malfunction must not exceed 3 hours.

§ 60.2865 How must I monitor opacity for air curtain incinerators?

(a) Use Method 9 of appendix A of this part to determine compliance with the opacity limitation.

(b) Conduct an initial test for opacity as specified in § 60.8 no later than 180 days after your final compliance date.

(c) After the initial test for opacity, conduct annual tests no more than 12 calendar months following the date of your previous test.

§ 60.2870 What are the recordkeeping and reporting requirements for air curtain incinerators?

(a) Keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format, unless the Administrator approves another format, for at least 5 years.

(b) Make all records available for submittal to the Administrator or for an inspector's onsite review.

(c) Submit an initial report no later than 60 days following the initial opacity test that includes the information specified in paragraphs (c) (1) and (2) of this section.

(1) The types of materials you plan to combust in your air curtain incinerator.

(2) The results (each 6-minute average) of the initial opacity tests.

(d) Submit annual opacity test results within 12 months following the previous report.

(e) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date and keep a copy onsite for a period of 5 years.

MODEL RULE—DEFINITIONS

§ 60.2875 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and subparts A and B of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or Administrator of a State Air Pollution Control Agency.

Agricultural waste means vegetative agricultural materials such as nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds, and other vegetative waste materials generated as a result of agricultural operations.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

Auxiliary fuel means natural gas, liquified petroleum gas, fuel oil, or diesel fuel.

Bag leak detection system means an instrument that is capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

Chemotherapeutic waste means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Commercial and industrial solid waste incineration (CISWI) unit means any combustion device that combusts commercial and industrial waste, as defined in this subpart. The boundaries of a CISWI unit are defined as, but not limited to, the commercial or industrial solid waste fuel feed system, grate system, flue gas system, and bottom ash. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the commercial and industrial solid waste hopper (if applicable) and extends through two areas:

(1) The combustion unit flue gas system, which ends immediately after the last combustion chamber.

(2) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

Commercial and industrial waste means solid waste combusted in an enclosed device using controlled flame combustion without energy recovery that is a distinct operating unit of any commercial or industrial facility (including field-erected, modular, and custom built incineration units operating with starved or excess air), or solid waste combusted in an air curtain incinerator without energy recovery that is a distinct operating unit of any commercial or industrial facility.

Contained gaseous material means gases that are in a container when that container is combusted.

Cyclonic barrel burner means a combustion device for waste materials that is attached to a 55 gallon, open-head drum. The device consists of a lid, which fits onto and encloses the drum, and a blower that forces combustion air into the drum in a cyclonic manner to enhance the mixing of waste material and air.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation, operating limit, or operator qualification and accessibility requirements;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation, operating limit, or operator qualification and accessibility requirement in this subpart during startup, shutdown, or malfunction, regardless or whether or not such failure is permitted by this subpart.

Dioxins/furans means tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Discard means, for purposes of this subpart and 40 CFR part 60, subpart DDDD, only, burned in an incineration unit without energy recovery.

Drum reclamation unit means a unit that burns residues out of drums (e.g., 55 gallon drums) so that the drums can be reused.

Energy recovery means the process of recovering thermal energy from combustion for useful purposes such as steam generation or process heating.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse.

Low-level radioactive waste means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable Federal or State standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or byproduct material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions.

Modification or *modified CISWI unit* means a CISWI unit you have changed later than June 1, 2001 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

(2) Any physical change in the CISWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Part reclamation unit means a unit that burns coatings off parts (e.g., tools, equipment) so that the parts can be reconditioned and reused.

Particulate matter means total particulate matter emitted from CISWI units as measured by Method 5 or Method 29 of appendix A of this part.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Rack reclamation unit means a unit that burns the coatings off racks used to hold small items for application of a coating. The unit burns the coating overspray off the rack so the rack can be reused.

Reconstruction means rebuilding a CISWI unit and meeting two criteria:

(1) The reconstruction begins on or after June 1, 2001.

(2) The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Shutdown means the period of time after all waste has been combusted in the primary chamber.

Solid waste means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1342), or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C. 2014). For purposes of this subpart and subpart CCCC, only, solid waste does not include the waste burned in the fifteen types of units described in §60.2555.

Standard conditions, when referring to units of measure, means a temperature of 68 °F (20 °C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup period means the period of time between the activation of the system and the first charge to the unit.

Wet scrubber means an add-on air pollution control device that utilizes an aqueous or alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Wood waste means untreated wood and untreated wood products, including tree stumps (whole or chipped), trees, tree limbs (whole or chipped), bark, sawdust, chips, scraps, slabs, millings, and shavings. Wood waste does not include:

(1) Grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.

(2) Construction, renovation, or demolition wastes.

(3) Clean lumber.

TABLE 1 TO SUBPART DDDD OF PART 60—MODEL RULE—INCREMENTS OF PROGRESS AND COMPLIANCE SCHEDULES

Comply with these increments of progress	By these dates[a]
Increment 1—Submit final control plan	(Dates to be specified in State plan)
Increment 2—Final compliance	(Dates to be specified in State plan)[b]

[a] Site-specific schedules can be used at the discretion of the State.

[b] The date can be no later than 3 years after the effective date of State plan approval or December 1, 2005.

TABLE 2 TO SUBPART DDDD OF PART 60—MODEL RULE—EMISSION LIMITATIONS

For the air pollutant	You must meet this emission limitation [a]	Using this averaging time	And determining compliance using this method
Cadmium	0.004 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part)
Carbon monoxide	157 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 10, 10A, or 10B, of appendix A of this part)
Dioxins/furans (toxic equivalency basis).	0.41 nanograms per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 23 of appendix A of this part)
Hydrogen chloride	62 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 26A of appendix A of this part)
Lead	0.04 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part)
Mercury	0.47 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 29 of appendix A of this part)
Opacity	10 percent	6-minute averages	Performance test (Method 9 of appendix A of this part)
Oxides of nitrogen	388 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Methods 7, 7A, 7C, 7D, or 7E of appendix A of this part)
Particulate matter	70 milligrams per dry standard cubic meter.	3-run average (1 hour minimum sample time per run).	Performance test (Method 5 or 29 of appendix A of ths part)
Sulfur dioxide	20 parts per million by dry volume.	3-run average (1 hour minimum sample time per run).	Performance test (Method 6 or 6c of appendix A of this part)

[a] All emission limitations (except for opacity) are measured at 7 percent oxygen, dry basis at standard conditions.

TABLE 3 TO SUBPART DDDD OF PART 60—MODEL RULE—OPERATING LIMITS FOR WET SCRUBBERS

For these operating parameters	You must establish these operating limits	And monitor using these minimum frequencies		
		Data measurement	Data recording	Averaging time
Charge rate	Maximum charge rate.	Continuous	Every hour	Daily (batch units). 3-hour rolling (continuous and intermittent units) [a]
Pressure drop across the wet scrubber or amperage to wet scrubber.	Minimum pressure drop or amperage.	Continuous	Every 15 minutes	3-hour rolling [a]
Scrubber liquor flow rate.	Minimum flow rate	Continuous	Every 15 minutes	3-hour rolling [a]
Scrubber liquor pH	Minimum pH	Continuous	Every 15 minutes	3-hour rolling [a]

[a] Calculated each hour as the average of the previous 3 operating hours.

TABLE 4 TO SUBPART DDDD OF PART 60—MODEL RULE—TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05

Dioxin/furan congener	Toxic equivalency factor
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
octachlorinated dibenzofuran	0.001

TABLE 5 TO SUBPART DDDD OF PART 60—MODEL RULE—SUMMARY OF REPORTING REQUIREMENTS[a]

Report	Due date	Contents	Reference
Waste Management Plan.	No later than the date specified in table 1 for submittal of the final control plan.	• Waste management plan	§ 60.2755.
Initial Test Report	No later than 60 days following the initial performance test.	• Complete test report for the initial performance test • The values for the site-specific operating limits • Installation of bag leak detection systems for fabric filters	§ 60.2760.
Annual Report	No later than 12 months following the submission of the initial test report. Subsequent reports are to be submitted no more than 12 months following the previous report.	• Name and address • Statement and signature by responsible official • Date of report • Values for the operating limits • If no deviations or malfunctions were reported, a statement that no deviations occurred during the reporting period • Highest recorded 3-hour average and the lowest 3-hour average, as applicable, for each operating parameter recorded for the calendar year being reported • Information for deviations or malfunctions recorded under § 60.2740(b)(6) and (c) through (e) • If a performance test was conducted during the reporting period, the results of the test • If a performance test was not conducted during the reporting period, a statement that the requirements of § 60.2155(a) or (b) were met • Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours but less than 2 weeks	§§ 60.2765 and 60.2770.
Emission Limitation or Operating Limit Deviation Report.	By August 1 of that year for data collected during the first half of the calendar year. By February 1 of the following year for data collected during the second half of the calendar year.	• Dates and times of deviations • Averaged and recorded data for these dates • Duration and causes for each deviation and the corrective actions taken • Copy of operating limit monitoring data and any test reports • Dates, times, and causes for monitor downtime incidents • Whether each deviation occurred during a period of startup, shutdown, or malfunction	§§ 60.2775 and 60.2780.
Qualified Operator Deviation Notification.	Within 10 days of deviation	• Statement of cause of deviation • Description of efforts to have an accessible qualified operator • The date a qualified operator will be accessible	§ 60.2785(a)(1).

Report	Due date	Contents	Reference
Qualified Operator Deviation Status Report.	Every 4 weeks following deviation ..	• Description of efforts to have an accessible qualified operator • The date a qualified operator will be accessible • Request for approval to continue operation	§ 60.2785(a)(2).
Qualified Operator Deviation Notification of Resumed Operation.	Prior to resuming operation	• Notification that you are resuming operation	§ 60.2785(b)

[a] This table is only a summary, see the referenced sections of the rule for the complete requirements.