For the reasons stated in the preamble, title 40, chapter I, parts 60, 63, 72, and 75 of the Code of the Federal Regulations are amended as follows:

PART 60–[AMENDED]

1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401, 7403, 7426, and 7601.

2. Section 60.17 amended by, in paragraph (a)(12), replacing the words “§§60.41(f),” by the words “§§60.24(h)(8)(v), 60.41(f),” and replacing the words “and 60.251(b) and (c).” by the words “60.251(b)and (c), and 60.4101.” and by adding paragraph (a)(65) to read as follows:

<u>§60.17 Incorporations by Reference</u>.

* * * * *

(a)* * *

(65) ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario-Hydro Method), for appendix B to part 60, Performance Specification 12A.

* * * * *

3. Section 60.21 is amended by:

a. Revise paragraphs (a) and (f); and

b. Add a new paragraph (k) to read as follows:

§60.21 Definitions.

* * * * *

(a) Designated pollutant means any air pollutant, the 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 that is not included on a list published under section 108(a) of the Act. Designated pollutant also means any air pollutant, the emissions of which are subject to a standard of performance for new stationary sources, that is on the section 112(b)(1) list and is emitted from a facility that is not part of a source category regulated under section 112. Designated pollutant does not include pollutants on the section 112(b)(1) list that are emitted from a facility that is part of a source category regulated under section 112.

* * * * *

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

* * * * *

(k) Allowance system means a control program under which the owner or operator of each designated facility is required to hold an authorization for each specified unit of a designated pollutant emitted from that facility during a specified period and which limits the total amount of such authorizations available to be held for a designated pollutant for a specified period and allows the transfer of such authorizations not used to meet the authorization-holding requirement.

* * * * *

4. Section 60.24 is amended by:

a. Revise paragraph (b)(1); and

b. Add a new paragraph (h) to read as follows:

§60.24 Emission standards and compliance schedules.

(a) * * *

(b)(1) Emission standards shall either be based on an allowance system or prescribe allowable rates of emissions except when it is clearly impracticable. * * *

* * * * *

(h) Each of the States identified in paragraph (h)(1) of this section shall be subject to the requirements of paragraphs (h)(2) through (7) of this section.

(1) Alaska, Alabama, Arkansas, Arizona, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana,

Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, and the District of Columbia shall each, and, if approved for treatment as a State under part 49 of this chapter, the Navajo Nation and the Ute Indian Tribe may each, submit a State plan meeting the requirements of paragraphs (h)(2) through (7) of this section and the other applicable requirements for a State plan under this subpart.

(2) The State's State plan under paragraph (h)(1) of this section must be submitted to the Administrator by no later than **[INSERT DATE 18 MONTHS (548 days) FROM THE DATE ON WHICH THE ADMINISTRATOR SIGNS THE FINAL CAMR]**. The State shall deliver five copies of the State plan to the appropriate Regional Office, with a letter giving notice of such action.

(3) The State's State plan under paragraph (h)(1) of this section shall contain emission standards and compliance schedules and demonstrate that they will result in compliance with the State's annual electrical generating unit (EGU) mercury (Hg) budget for the appropriate periods.

The amount of the annual EGU Hg budget, in tons of Hg per year, shall be as follows, for the indicated State for the indicated period:

State	Annual EGU Hg Budget (tons)	
	2010-2017	2018 and thereafter
Alaska	0.005	0.002
Alabama	1.289	0.509
Arkansas	0.516	0.204
Arizona	0.454	0.179
California	0.041	0.016
Colorado	0.706	0.279
Connecticut	0.053	0.021
Delaware	0.072	0.028
District of Columbia	0	0
Florida	1.233	0.487
Georgia	1.227	0.484
Hawaii	0.024	0.009
Idaho	0	0
Iowa	0.727	0.287
Illinois	1.594	0.629
Indiana	2.098	0.828
Kansas	0.723	0.285
Kentucky	1.525	0.602
Louisiana	0.601	0.237
Massachusetts	0.172	0.068
Maryland	0.49	0.193
Maine	0.001	0.001
Michigan	1.303	0.514
Minnesota	0.695	0.274
Missouri	1.393	0.55
Mississippi	0.291	0.115
Montana	0.378	0.149
North Carolina	1.133	0.447
North Dakota	1.564	0.617
Nebraska	0.421	0.166
New Hampshire	0.063	0.025
New Jersey	0.153	0.06
New Mexico	0.299	0.118
Nevada	0.285	0.112
New York	0.393	0.155
Ohio	2.056	0.812
Oklahoma	0.721	0.285
Oregon	0.076	0.03
Pennsylvania	1.78	0.702
Rhode Island	0	0

South Carolina	0.58	0.229
South Dakota	0.072	0.029
Tennessee	0.944	0.373
Texas	4.657	1.838
Utah	0.506	0.2
Virginia	0.592	0.234
Vermont	0	0
Washington	0.198	0.078
Wisconsin	0.89	0.351
West Virginia	1.394	0.55
Wyoming	0.952	0.376
Navajo Nation Indian country	0.601	0.237
Ute Indian Tribe Indian country	0.06	0.024

(4) Each State plan under paragraph (h)(1) of this section shall require EGUs to comply with the monitoring, record keeping, and reporting provisions of part 75 of this chapter with regard to Hg mass emissions.

(5) In addition to meeting the requirements of §60.26, each State plan under paragraph (h)(1) of this section must show that the State has legal authority to:

(I) Adopt emissions standards and compliance schedules necessary for attainment and maintenance of the State’s relevant annual EGU Hg budget under paragraph (h)(3) of this section; and

(ii) Require owners or operators of EGUs in the State to meet the monitoring, record keeping, and reporting requirements described in paragraph (h)(4) of this section.

(6)(I) Notwithstanding the provisions of paragraphs (h)(3) and (5)(i) of this section, if a State adopts regulations substantively identical to subpart HHHH of this part (Hg Budget Trading Program), incorporates such subpart by reference into its regulations, or adopts regulations that differ substantively from such subpart only as set forth in paragraph (h)(6)(ii) of this section, then such allowance system in the State’s State plan is automatically approved as meeting the requirements of paragraph (h)(3) of this section, provided that the State demonstrates that it has the legal authority to take such action and to implement its responsibilities under such regulations.

(ii) If a State adopts an allowance system that differs substantively from subpart HHHH of this part only as follows, then the emissions trading program is approved as set forth in paragraph (h)(6)(i) of this section.

(A) The State may decline to adopt the allocation provisions set forth in §§60.4141 and 60.4142 of this chapter and may instead adopt any methodology for allocating Hg allowances.

(B) The State’s methodology under paragraph (h)(6)(ii)(A) of this section must not allow the State to allocate Hg allowances for a year in excess of the amount in the State’s annual EGU Hg budget for such year under paragraph (h)(3) of this section;

(C) The State’s methodology under paragraph (h)(6)(ii)(A) of this section must require that, for EGUs commencing operation before January 1, 2001, the State will determine, and notify the Administrator of, each unit’s allocation of Hg allowances by October 31, 2006 for 2010, 2011, and 2012 and by October 31, 2009 and October 31 of each year thereafter for the fourth year after the year of the notification deadline; and

(D) The State’s methodology under paragraph (h)(6)(ii)(A) of this section must require that, for EGUs commencing operation on or after January 1, 2001, the State will determine, and notify the Administrator of, each unit’s allocation of Hg allowances by October 31 of the year for which the Hg allowances are allocated.

(7) If a State adopts an allowance system that differs substantively from subpart HHHH of this part, other than as set forth in paragraph (h)(6)(ii) of this section, then such allowance system is not automatically approved as set forth in paragraph (h)(6)(i) or (ii) of this section and will be reviewed by the Administrator for approvability in accordance with the other provisions of paragraphs (h)(2) through (5) of this section and the other applicable requirements for a State plan under this subpart, provided that the Hg allowances issued under such allowance system shall not, and the State plan under paragraph (h)(1) of this

section shall state that such Hg allowances shall not, qualify as Hg allowances under any allowance system approved under paragraph (h)(6)(i) or (ii) of this section.

(8) The terms used in this paragraph (h) shall have the following meanings:

Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator’s duly authorized representative.

Allocate or allocation means, with regard to Hg allowances, the determination of the amount of Hg allowances to be initially credited to a source.

Boiler means an enclosed fossil- or other fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

Bottoming-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

Coal means any solid fuel classified as anthracite, bituminous, subbituminous, or lignite by 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).

Coal-derived fuel means any fuel (whether in a solid, liquid, or gaseous state) produced by the mechanical, thermal, or chemical processing of coal.

Coal-fired means combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during any year.

Cogeneration unit means a stationary, coal-fired boiler or stationary, coal-fired combustion turbine:

(1) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and

(2) Producing during the 12-month period starting on the date the unit first produces electricity and during any calendar year after which the unit first produces electricity:

(i) For a topping-cycle cogeneration unit,

(A) Useful thermal energy not less than 5 percent of total energy output; and

(B) Useful power that, when added to one-half of useful thermal energy produced, is not less then 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output, or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output.

(ii) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input.

<u>Combustion turbine</u> means:

(1) An enclosed device comprising a compressor, a combustion, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustion passes through the turbine, rotating the turbine; and

(2) If the enclosed device under paragraph (1) of this definition is combined cycle, any associated heat recovery steam generator and steam turbine.

<u>Commence operation</u> means to have begun any mechanical, chemical, or electronic process, including, with regard to a unit, start-up of a unit's combustion chamber.

<u>Electric generating unit</u> or <u>EGU</u> means:

(1) Except as provided in paragraph (2) of this definition, a stationary, coal-fired boiler or stationary, coal-fired combustion turbine in the State serving at any time, since the start-up of a unit's combustion chamber, a generator with nameplate capacity of more than 25 megawatts electric (MW) producing electricity for sale.

(2) For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit

first produces electricity and continues to qualify as a cogeneration unit, a cogeneration unit in the State serving at any time a generator with nameplate capacity of more than 25 MW and supplying in any calendar year more than one-third of the unit’s potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale. If a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the unit shall be subject to paragraph (a) of this definition starting on the day on which the unit first no longer qualifies as a cogeneration unit.

<u>Generator</u> means a device that produces electricity.

<u>Gross electrical output</u> means, with regard to a cogeneration unit, electricity made available for use, including any such electricity used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

<u>Gross thermal energy</u> means, with regard to a cogeneration unit, useful thermal energy output plus, where such output is made available for an industrial or commercial process, any heat contained in condensate return

or makeup water.

Heat input means, with regard to a specified period of time, the product (in million British thermal units per unit time, MMBTU/time) of the gross calorific value of the fuel (in Btu per pound, Btu/lb) divided by 1,000,000 Btu/MMBTU and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the Hg designated representative and determined by the Administrator in accordance with §§60.4170 through 60.4176 and excluding the heat derived from preheated combustion air, reticulated flue gases, or exhaust from other sources.

Hg allowance means a limited authorization issued by the permitting authority to emit one ounce of Hg during a control period of the specified calendar year for which the authorization is allocated or of any calendar year thereafter.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy from any specified unit and pays its proportional amount of such unit's total costs, pursuant to a contract:

(1) For the life of the unit;

(2) For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or

(3) For a period no less than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means, starting from the initial installation of a unit, the maximum amount of fuel per hour (in Btu/hr) that a unit is capable of combusting on a steady-state basis as specified by the manufacturer of the unit, or, starting from the completion of any subsequent physical change in the unit resulting in a decrease in the maximum amount of fuel per hour (in Btu per hour, Btu/hr) that a unit is capable of combusting on a steady-state basis, such decreased maximum amount as specified by the person conducting the physical change.

Nameplate capacity means, starting from the initial installation of a generator, the maximum electrical generating output (in MW) that the generator is capable of producing on a steady-state basis and during continuous operation (when not restricted by seasonal or other derates) as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change in the generator resulting in an increase in the maximum electrical generating output (in MW) that the generator is capable of producing on a steady-state basis and during continuous operation (when not restricted by seasonal or other derates), such increased maximum amount as specified by the person conducting the physical change.

Operator means any person who operates, controls, or supervises an EGU or a source that includes an EGU and shall include, but not be limited to, any holding company, utility system, or plant manager of such EGU or source.

Ounce means 2.84 x 10^7 micrograms.

Owner means any of the following persons:

(1) With regard to a Hg Budget source or a Hg Budget unit at a source, respectively:

(I) Any holder of any portion of the legal or equitable title in a Hg Budget unit at the source or the Hg Budget unit;

(ii) Any holder of a leasehold interest in a Hg Budget unit at the source or the Hg Budget unit; or

(iii) Any purchaser of power from a Hg Budget unit at the source or the Hg Budget unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based (either directly or indirectly) on the revenues or income from such Hg Budget unit; or

(2) With regard to any general account, any person who has an ownership interest with respect to the Hg allowances held in the general account and who is subject to the binding agreement for the Hg authorized account representative to represent the person’s ownership interest with respect to Hg allowances.

Potential electrical output capacity means 33 percent of a unit’s maximum design heat input, divided by 3,413 Btu per kilowatt-hour (Btu/kWh), divided by 1,000 kWh per megawatt-hour (kWh/MWh), and multiplied by 8,760 hr/yr.

Sequential use of energy means:

(1) For a topping-cycle cogeneration unit, the use of reject heat from electricity production in a useful thermal energy application or process; or

(2) For a bottoming-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

Source means all buildings, structures, or installations located in one or more contiguous or adjacent properties under common control of the same person or persons.

State means:

(1) For purposes of referring to a governing entity, one of the States in the United States, the District of Columbia, or, if approved for treatment as a State under part 49 of this chapter, the Navajo Nation or Ute Indian Tribe that adopts the Hg Budget Trading Program pursuant to §60.24(h)(6) of this chapter; or

(2) For purposes of referring to a geographic area, one of the States in the United State, the District of Columbia, the Navajo Nation Indian country, or the Ute Tribe Indian country.

Topping-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

Total energy input means, with regard to a cogeneration unit, total energy of all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself.

Total energy output means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

Unit means a stationary coal-fired boiler or a stationary coal-fired combustion turbine.

Useful power means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any such energy used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

Useful thermal energy means, with regard to a cogeneration unit, thermal energy that is:

(1) Made available to an industrial or commercial process (not a power production process), excluding any heat contained in condensate return or makeup water;

(2) Used in a heat application (e.g., space heating or domestic hot water heating); or

(3) Used in a space cooling application (i.e., thermal energy used by an absorption chiller).

Utility power distribution system means the portion of an electricity grid owned or operated by a utility and dedicated to delivering electricity to customers.

Subpart Da–[AMENDED]

5. Section 60.41a is amended by revising the definition of “Electric utility steam generating unit,” and

by adding in alphabetical order the definitions of “Bituminous coal,” “Coal,” “Coal-fired electric utility steam generating unit,” “Cogeneration,” “Electric utility steam generating unit,” “Electrostatic precipitator,” “Emission limitation,” “Emission rate period,” “Federally enforceable,” “Gaseous fuel,” “Integrated gasification combined cycle electric utility steam generating unit,” “Natural gas,” and “Responsible official” to read as follows:

§60.41a Definitions.

* * * * *

Bituminous coal means coal that is classified as bituminous 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).

* * * * *

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by 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), 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-fired electric utility steam generating unit means an electric utility steam generating unit that burns coal, coal refuse, or a synthetic gas derived from coal either exclusively, in any combination together, or in any combination with other supplemental fuels in any amount. Examples of supplemental fuels include, but are not limited to, petroleum coke and tire-derived fuels.

* * * * *

Cogeneration means a facility that simultaneously produces both electrical (or mechanical) and useful thermal energy from the same primary energy source.

* * * * *

Dry flue gas desulfurization technology or dry FGD 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 FGD technology include, but are not limited to, lime and sodium.

* * * * *

Electric utility steam generating unit means any fossil fuel-fired combustion unit of more than 25 megawatts electric (MW) that serves a generator that produces electricity for sale. A unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 MW output to any utility power distribution system for sale is also considered an electric utility steam generating unit.

Electrostatic precipitator or ESP means an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper.

* * * * *

Emission limitation means any emissions limit or operating limit.

Emission rate period means any calendar month included in a 12-month rolling average period.

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 40 CFR 51.18 and 40 CFR 51.24.

*   *   *   *   *

<u>Gaseous fuel</u> means any fuel derived from coal or petroleum that is present as a gas at standard conditions and includes, but is not limited to, refinery fuel gas, process gas, and coke-oven gas.

*   *   *   *   *

<u>Integrated gasification combined cycle electric utility steam generating unit</u> or <u>ICC</u> means a coal-fired electric utility steam generating unit that burns a synthetic gas derived from coal in a combined-cycle gas turbine. No coal is directly burned in the unit during operation.

*   *   *   *   *

<u>Natural gas</u> 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 of Testing and Materials (ASTM) Standard Specification for Liquid Petroleum Gases D1835–82, 86, 87, 91, or 97, (Incorporated by reference — see §60.17).

*   *   *   *   *

Responsible official means responsible official as defined in 40 CFR 70.2.

* * * * *

Wet flue gas desulfurization technology or wet FGD 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 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 FGD technology include, but are not limited to, lime, limestone, and sodium.

* * * * *

6. Subpart Da is amended by:

a. Predesignate §60.49a as §60.51a;

b. Predesignate §60.48a as §60.50a;

c. Predesignate §60.47a as §60.49a;

d. Predesignate §60.46a as §60.48a;

e. Predesignate §60.45a as §60.47a; and

f. Adding new §§60.45a and 60.46a to read as follows:

§60.45a Standard for Mercury.

(a) For each coal-fired electric utility steam generating unit other than an integrated gasification combined cycle (ICC) electric utility steam generating unit, 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 for which construction or reconstruction commenced after January 30, 2004, any gases which contain mercury (Hg) emissions in excess of each Hg emissions limit in paragraphs (a)(1) through (5) of this section that applies to you. The Hg emissions limits in paragraphs (a)(1) through (5) of this section are based on a 12-month rolling average using the procedures in §60.50a(h).

(1) For each coal-fired electric utility steam generating unit that burns only bituminous coal, you must not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 21×10^{-6} pound per megawatt hour (lb/MWh) or 0.021 lb/gigawatt-hour (GWh) on an output basis. The International System of Units (SI) equivalent is 0.0026 nanograms per joule (ng/J).

(2) For each coal-fired electric utility steam generating unit that burns only subbituminous coal:

(i) If you utilize wet FGD technology to limit SO_2 emissions from your steam generating unit, you must not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 42 x 10^{-6} lb/MWh or 0.042 lb/GWh on an output basis. The SI equivalent is 0.0055 ng/J.

(ii) If you utilize dry FGD technology to limit SO_2 emissions from your steam generating unit, you must not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 78 x 10^{-6} lb/MWh or 0.078 lb/GWh on an output basis. The SI equivalent is 0.0103 ng/J.

(3) For each coal-fired electric utility steam generating unit that burns only lignite, you must not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 145 x 10^{-6} lb/MWh or 0.145 lb/GWh on an output basis. The SI equivalent is 0.0183 ng/J.

(4) For each coal-burning electric utility steam generating unit that burns only coal refuse, you must not discharge into the atmosphere any gases from a new affected source which contain Hg in excess of 1.4 x 10^{-6} lb/MWh or 0.0014 lb/GWh on an output basis. The SI equivalent is 0.00017 ng/J.

(5) For each coal-fired electric utility steam generating unit that burns a blend of coals from different

coal ranks (i.e., bituminous coal, subbituminous coal, lignite) or a blend of coal and coal refuse, you must not discharge into the atmosphere any gases from a new affected source that contain Hg in excess of the monthly unit-specific Hg emissions limit established according to paragraph (a)(5)(i) or (ii) of this section, as applicable to the affected unit.

(i) If you operate a coal-fired electric utility steam generating unit that burns a blend of coals from different coal ranks or a blend of coal and coal refuse, you must not discharge into the atmosphere any gases from a new affected source that contain Hg in excess of the computed weighted Hg emissions limit based on the proportion of energy output (in British thermal units, Btu) contributed by each coal rank burned during the compliance period and its applicable Hg emissions limit in paragraphs (a)(1) through (4) of this section as determined using Equation 1 of this section. You must meet the weighted Hg emissions limit calculated using Equation 1 of this section by calculating the unit emission rate based on the total Hg loading of the unit and the total Btu or megawatt hours contributed by all fuels burned during the compliance period.

$$EL_b = \frac{\sum_{i=1}^{n} EL_i\left(HH_i\right)}{\sum_{i=1}^{n} HH_i} \qquad \text{(Eq. 1)}$$

Where:

EBB = Total allowable Hg in lb/MWh that can be emitted to the atmosphere from any affected source being averaged under the blending provision.

Eli = Hg emissions limit for the subcategory i (coal rank) that applies to affected source, lb/MWh.

H.I. = Electricity output from affected source during the production period related to use of the corresponding subcategory i (coal rank) that falls within the compliance period, gross MWh generated by the electric utility steam generating unit.

n = Number of subcategories (coal ranks) being averaged for an affected source.

(ii) If you operate a coal-fired electric utility steam generating unit that burns a blend of coals from different coal ranks or a blend of coal and coal refuse together with one or more non-regulated, supplementary fuels, you must not discharge into the atmosphere any gases from the unit that contain Hg in excess of the computed weighted Hg emission limit based on the proportion of electricity output (in MWh) contributed by each coal rank burned during the compliance period and its applicable Hg emissions limit in paragraphs (a)(1) through (4) of this section as determined using Equation 1 of this section. You must meet the weighted Hg emissions limit calculated using Equation 1 of this section by calculating the unit emission rate based on the total Hg loading of the unit and the total megawatt hours contributed by both regulated and nonregulated fuels burned during the compliance period.

(b) For each ICC electric utility steam generating unit, 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 for which construction or reconstruction commenced after January 30, 2004, any gases which contain Hg emissions in excess of 20 x 10^{-6} lb/MWh or 0.020 lb/GWh on an output basis. The SI equivalent is 0.0025 ng/J. This Hg emissions limit is based on a 12-month rolling average using the procedures in §60.50a(g).

<u>§60.46a (Reserved)</u>.

7. Newly predesignated §60.48a is amended by:

a. Revising paragraph (c);

b. In paragraph (h) by revising the existing references from “§60.47a” to “§60.49a”;

c. In paragraph (i) by revising the existing references for “§§60.47a(c),” “60.47a(l),” and “60.47a(k)” to “§§60.49a(c),” “60.49a(l),” and “60.49a(k),” respectively;

d. In paragraph (j)(2) by revising the existing references from “§60.47a” to “§60.49a” twice;

e. In paragraph (k)(2)(ii) by revising the existing references from “§60.47a” and “60.47a(l)” to “§60.49a” and “60.49a(l),” respectively; in paragraph (k)(2)(iii) by revising the existing references from “§60.47a(k)” to “§60.49a(k)”; and in paragraph (k)(2)(iv) by revising the existing references from “§60.47a(l)” to “§60.49a(l)”; and

f. Adding new paragraph (m).

The revision and additions read as follows:

§60.48a Compliance provisions.

*   *   *   *   *

(c) The particulate matter emission standards under §60.42a, the nitrogen oxides emission standards under §60.44a, and the Hg emission standards under §60.45a apply at all times except during periods of startup, shutdown, or malfunction.

*   *   *   *   *

(m) Compliance provisions for sources subject to §60.45a. The owner or operator of an affected facility subject to §60.45a (new sources constructed or reconstructed after January 30, 2004) shall calculate the Hg emission rate (lb/MWh) for each calendar month of the year, using hourly Hg concentrations measured according to the provisions of §60.49a(p) in conjunction with hourly stack gas volumetric flow rates measured according to the provisions of §60.49a(l) or (m), and hourly gross electrical outputs, determined according to the provisions in §60.49a(k). Compliance with the applicable standard under §60.45a is determined on a 12-month rolling average basis.

8. Newly predesignated §60.49a is amended by:

a. In paragraph (c)(2) by revising the existing references from "§60.49a" to "§60.51a" twice;

b. In paragraph (g) by revising the existing reference from "§60.46a" to "§60.48a" and

c. Adding new paragraphs (p) through (s).

The revision and additions read as follows:

<u>§60.49a Emission monitoring</u>.

* * * * *

(p) The owner or operator of an affected facility demonstrating compliance with an Hg limit in §60.45a shall install and operate a continuous emissions monitoring system (CEMS) to measure and record the concentration of Hg in the exhaust gases from each stack according to the requirements in paragraphs (p)(1) through (p)(3) of this section. Alternatively, for an affected facility that is also subject to the requirements of subpart I of part 75 of this chapter, the owner or operator may install, certify, maintain, operate and quality-assure the data from a Hg CEMS according to §75.10 of this chapter and appendices A and B to part 75 of this chapter, in lieu of following the procedures in paragraphs (p)(1) through (p)(3) of this section.

(1) The owner or operator must install, operate, and maintain each CEMS according to Performance Specification 12A in appendix B to this part.

(2) The owner or operator must conduct a performance evaluation of each CEMS according to the requirements of §60.13 and Performance Specification 12A in appendix B to this part.

(3) The owner or operator must operate each CEMS according to the requirements in paragraphs (p)(3)(i) through (iv) of this section.

(i) As specified in §60.13(e)(2), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(ii) The owner or operator must reduce CEMS data as specified in §60.13(h).

(iii) The owner or operator shall use all valid data points collected during the hour to calculate the hourly average Hg concentration.

(iv) The owner or operator must record the results of each required certification and quality assurance test of the CEMS.

(4) Mercury CEMS data collection must conform to paragraphs (p)(4)(i) through (iv) of this section.

(i) For each calendar month in which the affected unit operates, valid hourly Hg concentration data, stack gas volumetric flow rate data, moisture data (if required), and electrical output data (i.e., valid data for all of these parameters) shall be obtained for at least 75 percent of the unit operating hours in the month.

(ii) Data reported to meet the requirements of this subpart shall not include hours of unit startup, shutdown, or malfunction. In addition, for an affected facility that is also subject to subpart I of part 75 of this chapter, data reported to meet the requirements of this subpart 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.

(iii) If valid data are obtained for less than 75 percent of the unit operating hours in a month, you must discard the data collected in that month and replace the data with the mean of the individual monthly emission rate values determined in the last 12 months. In the 12-month rolling average calculation, this substitute Hg emission rate shall be weighted according to the number of unit operating hours in the month for which the data capture requirement of §60.49a(p)(4)(i) was not met.

(iv) Notwithstanding the requirements of paragraph (p)(4)(iii) of this section, if valid data are obtained for less than 75 percent of the unit operating hours in another month in that same 12-month rolling average cycle, discard the data collected in that month and replace the data with the highest individual monthly emission rate determined in the last 12 months. In the 12-month rolling average calculation, this substitute Hg emission rate shall be weighted according to the number of unit operating hours in the month for which the data capture requirement of §60.49a(p)(4)(i) was not met.

(q) As an alternative to the CEMS required in paragraph (p) of this section, the owner or operator may use a sorbent trap monitoring system (as defined in §72.2 of this chapter) to monitor Hg concentration, according to the procedures described in §75.15 of this chapter and appendix K to part 75 of this chapter.

(r) For Hg CEMS that measure Hg concentration on a dry basis or for sorbent trap monitoring systems, the emissions data must be corrected for the stack gas moisture content. A certified continuous moisture monitoring system that meets the requirements of §75.11(b) of this chapter is acceptable for this purpose. Alternatively, the appropriate default moisture value, as specified in §75.11(b) or §75.12(b) of this chapter, may be used.

(s) The owner or operator shall prepare and submit to the Administrator for approval a unit-specific monitoring plan for each monitoring system, at least 45 days before commencing certification testing of the monitoring systems. The owner or operator shall comply with the requirements in your plan. The plan must address the requirements in paragraphs (s)(1) through (6) of this section.

(1) Installation of the CEMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of the exhaust emissions (e.g., on or downstream of the last control device);

(2) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems;

(3) Performance evaluation procedures and acceptance

criteria (e.g., calibrations, relative accuracy test audits (RATA), etc.);

(4) Ongoing operation and maintenance procedures in accordance with the general requirements of §60.13(d) or part 75 of this chapter (as applicable);

(5) Ongoing data quality assurance procedures in accordance with the general requirements of §60.13 or part 75 of this chapter (as applicable); and

(6) Ongoing record keeping and reporting procedures in accordance with the requirements of this subpart.

9. Newly predesignated §60.50a is amended by:

a. In paragraph (c)(5) by revising the existing references from “§60.47a(b) and (d)” to “§60.49a(b) and (d),” respectively;

b. In paragraph (d)(2) by revising the existing references from “§60.47a(c) and (d)” to “§60.49a(c) and (d),” respectively;

c. In paragraph (e)(2) by revising the existing reference from “§60.46a(d)(1)” to “§60.48a(d)(1)”; and

d. Adding new paragraphs (g) through (i).

The additions read as follows:

<u>§60.50a Compliance determination procedures and methods</u>.

* * * * *

(g) For the purposes of determining compliance with the emission limits in §§60.45a and 60.46a, the owner or operator of an electric utility steam generating unit which is also a cogeneration unit shall use the procedures in paragraphs (g)(1) and (2) of this section to calculate emission rates based on electrical output to the grid plus half of the equivalent electrical energy in the unit’s process stream.

(1) All conversions from Btu/hr unit input to MW unit output must use equivalents found in 40 CFR 60.40(a)(1) for electric utilities (i.e., 250 million Btu/hr input to a electric utility steam generating unit is equivalent to 73 MW input to the electric utility steam generating unit); 73 MW input to the electric utility steam generating unit is equivalent to 25 MW output from the boiler electric utility steam generating unit; therefore, 250 million Btu input to the electric utility steam generating unit is equivalent to 25 MW output from the electric utility steam generating unit).

(2) Use Equation 1 below in lieu of Equation 5 in paragraph (h) of this section, to determine the monthly average Hg emission rates for a cogeneration unit.

$$ER_{cogen} = \frac{M}{\left(\left(V_{grid} \right) + \left(\frac{V_{process}}{2} \right) \right)} \qquad \text{(Eq. 1)}$$

Where:

ER_{COGEN} = Cogeneration Hg emission rate for a particular month (lb/MWh;

M = Mass of Hg emitted from the stack over the same month, from Equation 2 or Equation 3 in paragraph h of this section (lb);

$_{Grid}$ = Amount of energy sent to the grid over the same month (MWh); and

$_{Process}$ = Amount of energy converted to steam for process use over the same month (MWh).

(h) The owner or operator shall determine compliance with the Hg limit in §60.45a according to the procedures in paragraphs (h)(1) through (3) of this section.

(1) The initial performance test shall be commenced by the applicable date specified in §60.8(a). The required continuous monitoring systems must be certified prior to commencing the test. The performance test consists of collecting hourly Hg emission data (lb/MWh) with the continuous monitoring systems for 12 successive months of unit operation (excluding hours of unit startup, shutdown and malfunction). The average Hg emission rate is calculated for each month, and then the weighted, 12-month average Hg emission rate is calculated according to paragraph (h)(2) or (h)(3) of this section, as applicable. If, for any month in the initial performance test, the minimum data capture requirement in §60.49a(p)(4)(i) is not met, the owner or operator shall report a substitute Hg emission rate for that month, as follows. For the first

such month, the substitute monthly Hg emission rate shall be the arithmetic average of all valid hourly Hg emission rates recorded to date. For any subsequent month(s) with insufficient data capture, the substitute monthly Hg emission rate shall be the highest valid hourly Hg emission rate recorded to date. When the 12-month average Hg emission rate for the initial performance test is calculated, for each month in which there was insufficient data capture, the substitute monthly Hg emission rate shall be weighted according to the number of unit operating hours in that month. Following the initial performance test, the owner or operator shall demonstrate compliance by calculating the weighted average of all monthly Hg emission rates (in lb/MWh) for each 12 successive calendar months, excluding data obtained during startup, shutdown, or malfunction.

(2) If a CEMS is used to demonstrate compliance, follow the procedures in paragraphs (h)(2)(i) through (iii) of this section to determine the 12-month rolling average.

(i) Calculate the total mass of Hg emissions over a month (M), in pounds (lb), using either Equation 2 in paragraph (h)(2)(i)(A) of this section or Equation 3 in paragraph (h)(2)(i)(B) of this section, in conjunction with Equation 4 in paragraph (h)(2)(i)(C) of this section.

(A) If the Hg CEMS measures Hg concentration on a wet basis, use Equation 2 below to calculate the Hg mass emissions for each valid hour:

$$E_h = K\, C_h\, Q_h\, t_h \qquad \text{(Eq. 2)}$$

Where:

E_h = Hg mass emissions for the hour, (lb)
K = Units conversion constant, 6.24 x 10^{-11} lb-scm/:g-scf
C_h = Hourly Hg concentration, wet basis, (:g/scm)
Q_h = Hourly stack gas volumetric flow rate, (scfh)
t_h = Unit operating time, i.e., the fraction of the hour for which the unit operated. For example, t_h = 0.50 for a half-hour of unit operation and 1.00 for a full hour of operation.

(B) If the Hg CEMS measures Hg concentration on a dry basis, use Equation 3 below to calculate the Hg mass emissions for each valid hour:

$$E_h = K\, C_h\, Q_h\, t_h\, (1-B_{ws}) \qquad \text{(Eq. 3)}$$

Where:

E_h = Hg mass emissions for the hour, (lb)
K = Units conversion constant, 6.24 x 10^{-11} lb-scm/:g-scf
C_h = Hourly Hg concentration, dry basis, (:g/dscm)
Q_h = Hourly stack gas volumetric flow rate, (scfh)
t_h = Unit operating time, i.e., the fraction of

the hour for which the unit operated

B_{ws} = Stack gas moisture content, expressed as a decimal fraction (e.g., for 8 percent H_2O, $B_{ws} = 0.08$)

(C) Use Equation 4, below, to calculate M, the total mass of Hg emitted for the month, by summing the hourly masses derived from Equation 2 or 3 (as applicable):

$$M = \sum_{h=1}^{n} E_h \qquad \text{(Eq. 4)}$$

Where:

M = Total Hg mass emissions for the month, (lb)

E_h = Hg mass emissions for hour “h”, from Equation 2 or 3 of this section, (lb)

n = The number of unit operating hours in the month with valid CEM and electrical output data, excluding hours of unit startup, shutdown and malfunction

(ii) Calculate the monthly Hg emission rate on an output basis (lb/MWh) using Equation 5, below. For a cogeneration unit, use Equation 1 in paragraph (g) of this section instead.

$$ER = \frac{M}{P} \qquad \text{(Eq. 5)}$$

Where:

ER = Monthly Hg emission rate, (lb/MWh)

M = Total mass of Hg emissions for the month, from Equation 4, above, (lb)

P = Total electrical output for the month, for the hours used to calculate M,(MWh)

(iii) Until 12 monthly Hg emission rates have been accumulated, calculate and report only the monthly averages. Then, for each subsequent calendar month, use Equation 6 below to calculate the 12-month rolling average as a weighted average of the Hg emission rate for the current month and the Hg emission rates for the previous 11 months, with one exception. Calendar months in which the unit does not operate (zero unit operating hours) shall not be included in the 12-month rolling average.

$$E_{avg} = \frac{\sum_{i=i}^{12} (ER)_i \, n_i}{\sum_{i=i}^{12} n_i} \qquad \text{(Eq. 6)}$$

Where:

E_{avg} = Weighted 12-month rolling average Hg emission rate, (lb/MWh)
$(ER)_i$ = Monthly Hg emission rate, for month “i”, (lb/MWh)
n = The number of unit operating hours in month “i” with valid CEM and electrical output data, excluding hours of unit startup, shutdown, and malfunction

(3) If a sorbent trap monitoring system is used in lieu of a Hg CEMS, as described in §75.15 of this chapter and in appendix K to part 75 of this chapter, calculate the monthly Hg emission rates using Equations 3 through 5 of this section, except that for a particular pair of sorbent traps, C_h in Equation 3 shall be the flow-proportional average Hg concentration measured over the data collection

period.

(i) Daily calibration drift (CD) tests and quarterly accuracy determinations shall be performed for Hg CEMS in accordance with Procedure 1 of appendix F to this part. For the CD assessments, you may use either elemental mercury or mercuric chloride (Hg^B or $HgCl_2$) standards. The four quarterly accuracy determinations shall consist of one RATA and three measurement error (ME) tests using $HgCl_2$ standards, as described in section 8.3 of Performance Specification 12-A in appendix B to this part (note: Hg^B standards may be used if the Hg monitor does not have a converter). Alternatively, the owner or operator may implement the applicable daily, weekly, quarterly, and annual quality assurance (QA) requirements for Hg CEMS in appendix B to part 75 of this chapter, in lieu of the QA procedures in appendices B and F to this part. Annual RATA of sorbent trap monitoring systems shall be performed in accordance with appendices A and B to part 75 of this chapter, and all other quality assurance requirements specified in appendix K to part 75 of this chapter shall be met for sorbent trap monitoring systems.

10. Newly redesignated §60.51a is amended by:

a. Revising paragraph (a);

b. In paragraph (c) introductory text by revising the existing references from “§60.47a” and “§60.46a(h)” to “§60.49a” and “§60.48a(h),” respectively;

c. In paragraph (d)(1) by revising the existing reference from “§60.46a(d)” to “§60.48a(d)”; and

d. In paragraph (e)(1) by revising the existing reference from “§60.48a” to “§60.50a.”

e. Redesignating paragraphs (g),(h), (i), and (j) as paragraphs (h), (i), (j), and (k), respectively, and adding a new paragraph (g); and

f. Revising the first sentence of newly redesignated paragraph (k).

The revisions and additions read as follows:

§60.51a Reporting requirements.

(a) For sulfur dioxide, nitrogen oxides, particulate matter, and Hg emissions, the performance test data from the initial and subsequent performance test and from the performance evaluation of the continuous monitors (including the transmissometer) are submitted to the Administrator.

* * * * *

(g) For Hg, the following information shall be reported to the Administrator:

(1) Company name and address;

(2) Date of report and beginning and ending dates of the reporting period;

(3) The applicable Hg emission limit (lb/MWh); and

(4) For each month in the reporting period:

(i) The number of unit operating hours;

(ii) The number of unit operating hours with valid data for Hg concentration, stack gas flow rate, moisture (if required), and electrical output;

(iii) The monthly Hg emission rate (lb/MWh);

(iv) The number of hours of valid data excluded from the calculation of the monthly Hg emission rate, due to unit startup, shutdown and malfunction; and

(v) The 12-month rolling average Hg emission rate (lb/MWh); and

(5) The data assessment report (DAR) required by appendix F to this part, or an equivalent summary of QA test results if the QA of part 75 of this chapter are implemented.

* * * * *

(k) The owner or operator of an affected facility may submit electronic quarterly reports for SO_2 and/or NO_x and/or opacity and/or Hg in lieu of submitting the written reports required under paragraphs (b), (g), and (i) of this section.

* * * * *

11. Section 60.52a is added to read as follows;

<u>§60.52a Recordkeeping Requirements</u>.

The owner or operator of an affected facility subject to the emissions limitations in §60.45a or §60.46a shall provide notifications in accordance with §60.7(a) and shall maintain records of all information needed to demonstrate compliance including performance tests, monitoring data, fuel analyses, and calculations, consistent with the requirements of §60.7(f).

* * * * *

Subpart GGGG–[ADDED]

12. Part 60 is amended by adding subpart GGGG to read as follows:

Subpart GGGG-[Reserved]

13.

Part 60 is amended by adding subpart HHHH to read as follows:

SUBPART HHHH– EMISSION GUIDELINES AND COMPLIANCE TIMES FOR COAL-FIRED ELECTRIC STEAM GENERATING UNITS

Sec.

Hg Budget Trading Program General Provisions

Hg Designated Representative for Hg Budget Sources

Permits

Hg Allowance Allocations

Hg Allowance Tracking System

Hg Allowance Transfers

Monitoring and Reporting

Hg Budget Trading Program General Provisions

§60.4101 Purpose.

This subpart establishes the model rule comprising general provisions and the designated representative, permitting, allowance, and monitoring provisions for the State mercury (Hg) Budget Trading Program, under section 111 of the Clean Air Act (CAA) and §60.24(h)(6) of this chapter, as a means of reducing national Hg emissions. The owner or operator of a unit or a source shall comply with the requirements of this subpart as a matter of Federal law only if the State with jurisdiction over the unit and the source incorporates by reference this subpart or otherwise adopts the requirements of this subpart in accordance with §60.24(h)(6) of this chapter, the State submits to the Administrator one or more revisions of the State plan that include such adoption, and the Administrator approves such revisions. If the State adopts the requirements of this subpart in accordance with §60.24(h)(6) of this chapter, then the State authorizes the Administrator to assist the State in implementing the Hg Budget Trading Program by carrying out the functions set forth for the Administrator in this subpart.

§60.4102 Definitions.

The terms used in this subpart shall have the meanings set forth in this section as follows:

Account number means the identification number given by the Administrator to each Hg Allowance Tracking System account.

Acid Rain emissions limitation means a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program.

Acid Rain Program means a multi-state sulfur dioxide and nitrogen oxides air pollution control and emission reduction program established by the Administrator under title IV of the CAA and parts 72 through 78 of this chapter.

Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator’s duly authorized representative.

Allocate or allocation means the determination by the permitting authority or the Administrator of the amount of Hg allowances to be initially credited to a Hg Budget unit or a new unit set-aside under §§60.4140 through 60.4142.

Allowance transfer deadline means, for a control period, midnight of March 1, if it is a business day, or, if

March 1 is not a business day, midnight of the first business day thereafter immediately following the control period and is the deadline by which a Hg allowance transfer must be submitted for recordation in a Hg Budget source’s compliance account in order to be used to meet the source’s Hg Budget emissions limitation for such control period in accordance with §60.4154.

Alternate Hg designated representative means, for a Hg Budget source and each Hg Budget unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source in accordance with §§60.4110 through 60.4114, to act on behalf of the Hg designated representative in matters pertaining to the Hg Budget Trading Program.

Automated data acquisition and handling system or DAHS means that component of the continuous emission monitoring system (CEMS), or other emissions monitoring system approved for use under §§60.4170 though 60.4176, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required §§60.4170 through 60.4176.

Boiler means an enclosed fossil- or other fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

Bottoming-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

CAIR NO_X Annual Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AA through II of part 96 of this chapter and §51.123 of this chapter, as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

CAIR NO_X Ozone Season Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AAAA through IIII of part 96 of this chapter and §51.123 of this chapter, as a means of mitigating interstate transport of ozone and nitrogen oxides.

CAIR SO_2 Trading Program means a multi-state sulfur dioxide air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AAA through III of part 96 of this chapter and §51.124 of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

Clean Air Act or CAA means the Clean Air Act, 42 U.S.C. 7401, et seq.

Coal means any solid fuel classified as anthracite, bituminous, subbituminous, or lignite by 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).

Coal-derived fuel means any fuel (whether in a solid, liquid, or gaseous state) produced by the mechanical, thermal, or chemical processing of coal.

Coal-fired means combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during any year.

Cogeneration unit means a stationary, coal-fired boiler or stationary, coal-fired combustion turbine:

(1) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and

(2) Producing during the 12-month period starting on the date the unit first produces electricity and during any

calendar year after which the unit first produces electricity:

(i) For a topping-cycle cogeneration unit,

(A) Useful thermal energy not less than 5 percent of total energy output; and

(B) Useful power that, when added to one-half of useful thermal energy produced, is not less then 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output, or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output.

(ii) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input.

Combustion turbine means:

(1) An enclosed device comprising a compressor, a combustor, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine; and

(2) If the enclosed device under paragraph (1) of this definition is combined cycle, any associated heat recovery steam generator and steam turbine.

Commence commercial operation means, with regard to a unit serving a generator:

(1) To have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation, except as provided in §60.4105.

(i) For a unit that is a Hg Budget unit under §60.4104 on the date the unit commences commercial operation as defined in paragraph (1) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the unit’s date of commencement of commercial operation.

(ii) For a unit that is a Hg Budget unit under §60.4104 on the date the unit commences commercial operation as defined in paragraph (1) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

(2) Notwithstanding paragraph (1) of this definition and except as provided in §60.4105, for a unit that is not a Hg Budget unit under §60.4104 on the date the unit commences commercial operation as defined in paragraph (1) of this definition, the unit’s date for commencement of commercial operation shall be the date on which the unit becomes a Hg

Budget unit under §60.4104.

(i) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the unit’s date of commencement of commercial operation.

(ii) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

<u>Commence operation</u> means:

(1) To have begun any mechanical, chemical, or electronic process, including, with regard to a unit, start-up of a unit’s combustion chamber, except as provided in §60.4105.

(i) For a unit that is a Hg Budget unit under §60.4104 on the date the unit commences operation as defined in paragraph (1) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the unit’s date of commencement of operation.

(ii) For a unit that is a Hg Budget unit under §60.4104 on the date the unit commences operation as defined in paragraph (1) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1) or (2) of this definition as appropriate.

(2) Notwithstanding paragraph (1) of this definition and except as provided in §60.4105, for a unit that is not a Hg Budget unit under §60.4104 on the date the unit commences operation as defined in paragraph (1) of this definition, the unit’s date for commencement of operation shall be the date on which the unit becomes a Hg Budget unit under §60.4104.

(i) For a unit with a date for commencement of operation as defined in paragraph (2) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the unit’s date of commencement of operation.

(ii) For a unit with a date for commencement of operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1) or (2) of this definition as appropriate.

Common stack means a single flue through which emissions from 2 or more units are exhausted.

Compliance account means a Hg Allowance Tracking System account, established by the Administrator for a Hg Budget source under §§60.4150 through 60.4157, in which any Hg allowance allocations for the Hg Budget units at the source are initially recorded and in which are held any Hg allowances available for use for a control period in order to meet the source’s Hg Budget emissions limitation in accordance with §60.4154.

Continuous emission monitoring system or CEMS means the equipment required under §§60.4170 through 60.4176 to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of Hg emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with part 75 of this chapter. The following systems are the principal types of CEMS required under §§60.4170 through

60.4176:

(1) A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in units of standard cubic feet per hour (scfh);

(2) A Hg concentration monitoring system, consisting of a Hg pollutant concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of Hg emissions in units of micrograms per dry standard cubic meter (:g/dscm);

(3) A moisture monitoring system, as defined in §75.11(b)(2) of this chapter and providing a permanent, continuous record of the stack gas moisture content, in percent H_2O.

(4) A carbon dioxide monitoring system, consisting of a CO_2 concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO_2 concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO_2 emissions, in percent CO_2; and

(5) An oxygen monitoring system, consisting of an O_2 concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record

of O_2, in percent O_2.

Control period means the period beginning January 1 of a calendar year and ending on December 31 of the same year, inclusive.

Emissions means air pollutants exhausted from a unit or source into the atmosphere, as measured, recorded, and reported to the Administrator by the Hg designated representative and as determined by the Administrator in accordance with §§60.4170 through 60.4176.

Excess emissions means any ounce of mercury emitted by the Hg Budget units at a Hg Budget source during a control period that exceeds the Hg Budget emissions limitation for the source.

General account means a Hg Allowance Tracking System account, established under §60.4151, that is not a compliance account.

Generator means a device that produces electricity.

Gross electrical output means, with regard to a cogeneration unit, electricity made available for use, including any such electricity used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

Heat input means, with regard to a specified period of time, the product (in MMBtu/time) of the gross calorific value of the fuel (in Btu/lb) divided by 1,000,000 Btu/MMBtu and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the Hg designated representative and determined by the Administrator in accordance with §§60.4170 through 60.4176 and excluding the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

Heat input rate means the amount of heat input (in MMBtu) divided by unit operating time (in hr) or, with regard to a specific fuel, the amount of heat input attributed to the fuel (in MMBtu) divided by the unit operating time (in hr) during which the unit combusts the fuel.

Hg authorized account representative means, with regard to a general account, a responsible natural person who is authorized, in accordance with §60.4152, to transfer and otherwise dispose of Hg allowances held in the general account and, with regard to a compliance account, the Hg designated representative of the source.

Hg allowance means a limited authorization issued by the permitting authority or the Administrator under §§60.4140 through 60.4142 to emit one ounce of mercury during a control period of the specified calendar year for which the authorization is allocated or of any calendar year thereafter under the Hg Budget Trading Program. An authorization to emit mercury that is not issued under the provisions of a State plan that adopt the requirements of this subpart and are approved by the Administrator in accordance with §60.24(h)(6) of this chapter shall not be a "Hg allowance."

Hg allowance deduction or deduct Hg allowances means the permanent withdrawal of Hg allowances by the Administrator from a compliance account in order to account for a specified number of ounces of total mercury emissions from all Hg Budget units at a Hg Budget source for a control period, determined in accordance with §§60.4150 though 60.4157 and §§60.4170 through 60.4176, or to account for excess emissions.

Hg allowances held or hold Hg allowances means the Hg allowances recorded by the Administrator, or submitted to the Administrator for recordation, in accordance with §§60.4150 through 60.4162, in a Hg Allowance Tracking System account.

Hg Allowance Tracking System means the system by which the Administrator records allocations, deductions, and transfers of Hg allowances under the Hg Budget Trading

Program. Such allowances will be allocated, held, deducted, or transferred only as whole allowances.

<u>Hg Allowance Tracking System account</u> means an account in the Hg Allowance Tracking System established by the Administrator for purposes of recording the allocation, holding, transferring, or deducting of Hg allowances.

<u>Hg Budget emissions limitation</u> means, for a Hg Budget source, the equivalent in ounces of the Hg allowances available for deduction for the source under §60.4154(a) and (b) for a control period.

<u>Hg Budget permit</u> means the legally binding and Federally enforceable written document, or portion of such document, issued by the permitting authority under §§60.4120 through 60.4124, including any permit revisions, specifying the Hg Budget Trading Program requirements applicable to a Hg Budget source, to each Hg Budget unit at the source, and to the owners and operators and the Hg designated representative of the source and each such unit.

<u>Hg Budget source</u> means a source that includes one or more Hg Budget units.

<u>Hg Budget Trading Program</u> means a multi-state Hg air pollution control and emission reduction program approved and administered by the Administrator in accordance with this subpart and §60.24(h)(6) of this chapter, as a means of

reducing national Hg emissions.

Hg Budget unit means a unit that is subject to the Hg Budget Trading Program under §60.4104.

Hg designated representative means, for a Hg Budget source and each Hg Budget unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with §§60.4110 through 60.4114, to represent and legally bind each owner and operator in matters pertaining to the Hg Budget Trading Program.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy from any specified generating unit and pays its proportional amount of such unit’s total costs, pursuant to a contract:

(1) For the life of the unit;

(2) For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or

(3) For a period no less than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or

release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

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).

Maximum design heat input means, starting from the initial installation of a unit, the maximum amount of fuel per hour (in Btu/hr) that a unit is capable of combusting on a steady-state basis as specified by the manufacturer of the unit, or, starting from the completion of any subsequent physical change in the unit resulting in a decrease in the maximum amount of fuel per hour (in Btu/hr) that a unit is capable of combusting on a steady-state basis, such decreased maximum amount as specified by the person conducting the physical change.

Monitoring system means any monitoring system that meets the requirements of §§60.4170 through 60.4176, including a continuous emissions monitoring system, an alternative monitoring system, or an excepted monitoring system under part 75 of this chapter.

Nameplate capacity means, starting from the initial installation of a generator, the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady-state basis and during continuous operation (when not restricted by seasonal or other deratings) as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change in the generator resulting in an increase in the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady-state basis and during continuous operation (when not restricted by seasonal or other deratings), such increased maximum amount as specified by the person conducting the physical change.

Operator means any person who operates, controls, or supervises a Hg Budget unit or a Hg Budget source and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

Ounce means 2.84×10^7 micrograms. For the purpose of determining compliance with the Hg Budget emissions limitation, total ounces of mercury emissions for a control period shall be calculated as the sum of all recorded hourly emissions (or the mass equivalent of the recorded hourly emission rates) in accordance with §§60.4170 through 60.4176, but with any remaining fraction of an ounce equal to or greater than 0.50 ounces deemed to equal one ounce and any remaining fraction of an ounce less than 0.50 ounces deemed to equal zero ounces.

<u>Owner</u> means any of the following persons:

(1) With regard to a Hg Budget source or a Hg Budget unit at a source, respectively:

(i) Any holder of any portion of the legal or equitable title in a Hg Budget unit at the source ro the Hg Budget unit;

(ii) Any holder of a leasehold interest in a Hg Budget unit at the source or the Hg Budget unit; or

(iii) Any purchaser of power from a Hg Budget unit at the source or the Hg Budget unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based (either directly or indirectly) on the revenues or income from such Hg Budget unit; or

(2) With regard to any general account, any person who has an ownership interest with respect to the Hg allowances held in the general account and who is subject to the binding agreement for the Hg authorized account representative to represent the person’s ownership interest with respect to Hg allowances.

Permitting authority means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the Hg Budget Trading Program in accordance with §§60.4120 through 60.4124 or, if no such agency has been so authorized, the Administrator.

Potential electrical output capacity means 33 percent of a unit’s maximum design heat input, divided by 3,413 Btu/kWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 hr/yr.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in hard copy or by authorized electronic transmission), as indicated in an official correspondence log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Recordation, record, or recorded means, with regard to Hg allowances, the movement of Hg allowances by the Administrator into or between Hg Allowance Tracking System accounts, for purposes of allocation, transfer, or deduction.

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in §75.22 of this chapter.

Repowered means, with regard to a unit, replacement of a coal-fired boiler with one of the following coal-fired technologies at the same source as the coal-fired boiler:

(1) Atmospheric or pressurized fluidized bed combustion;

(2) Integrated gasification combined cycle;

(3) Magnetohydrodynamics;

(4) Direct and indirect coal-fired turbines;

(5) Integrated gasification fuel cells; or

(6) As determined by the Administrator in consultation with the Secretary of Energy, a derivative of one or more of the technologies under paragraphs (1) through (5) of this definition and any other coal-fired 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 January 1, 2005.

Serial number means, for a Hg allowance, the unique identification number assigned to each Hg allowance by the Administrator.

Sequential use of energy means:

(1) For a topping-cycle cogeneration unit, the use of reject heat from electricity production in a useful thermal energy application or process; or

(2) For a bottoming-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

Source means all buildings, structures, or installations located in one or more contiguous or adjacent properties under common control of the same person or persons. For purposes of section 502(c) of the CAA, a “source,” including a “source” with multiple units, shall be considered a single “facility.”

State means:

(1) For purposes of referring to a governing entity, one of the States in the United States, the District of Columbia, or, if approved for treatment as a State under part 49 of this chapter, the Navajo Nation or Ute Indian Tribe that adopts the Hg Budget Trading Program pursuant to §60.24(h)(6) of this chapter; or

(2) For purposes of referring to geographic areas, one of the States in the United State, the District of Columbia, the Navajo Nation Indian country, or the Ute Tribe Indian country.

Subbituminous 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).

Submit or serve means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

(1) In person;

(2) By United States Postal Service; or

(3) By other means of dispatch or transmission and delivery. Compliance with any “submission” or “service” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

Title V operating permit means a permit issued under title V of the CAA and part 70 or part 71 of this chapter.

Title V operating permit regulations means the regulations that the Administrator has approved or issued as meeting the requirements of title V of the CAA and part 70 or 71 of this chapter.

Topping-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

Total energy input means, with regard to a cogeneration unit, total energy of all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself.

Total energy output means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

Unit means a stationary coal-fired boiler or a stationary coal-fired combustion turbine.

Unit operating day means a calendar day in which a unit combusts any fuel.

Unit operating hour or hour of unit operation means an hour in which a unit combusts any fuel.

Useful power means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any such energy used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

Useful thermal energy means, with regard to a cogeneration unit, thermal energy that is:

(1) Made available to an industrial or commercial process (not a power production process), excluding any heat contained in condensate return or makeup water;

(2) Used in a heat application (e.g., space heating or domestic hot water heating); or

(3) Used in a space cooling application (i.e., thermal energy used by an absorption chiller).

Utility power distribution system means the portion of an electricity grid owned or operated by a utility and dedicated to delivering electricity to customers.

§60.4103 Measurements, Abbreviations, and Acronyms.

Measurements, abbreviations, and acronyms used in this part are defined as follows:

Btu - British thermal unit.

CO_2 - carbon dioxide.

Hg - mercury.

hr - hour.

kW - kilowatt electrical.

kWh - kilowatt hour.

MMBtu - million Btu.

MWe - megawatt electrical.

MWh - megawatt hour.

NO_X - nitrogen oxides.

O_2 - oxygen.

ppm - parts per million.

lb - pound.

scfh - standard cubic feet per hour.

SO_2 - sulfur dioxide.

H_2O - water.

yr - year.

§60.4104 Applicability.

The following units in a State shall be Hg Budget units, and any source that includes one or more such units shall be a Hg Budget source, subject to the requirements of this subpart:

(a) Except as provided in paragraph (b) of this section, a unit serving at any time, since the start-up of the unit's combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale.

(b) For a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continues to qualify as a cogeneration unit, a cogeneration unit serving at any time a generator with nameplate capacity of more than 25 MWe and supplying in any calendar year more than one-third of the unit's potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale. If a unit that qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity but subsequently no longer qualifies as a cogeneration unit, the unit shall be subject to paragraph (a) of this section starting on the day on which the unit first no longer qualifies as a cogeneration unit.

§60.4105 Retired Unit Exemption.

(a)(1) Any Hg Budget unit that is permanently retired shall be exempt from the Hg Budget Trading Program, except for the provisions of this section, §60.4102, §60.4103, §60.4104, §60.4106(c)(4) through (8), §60.4107, and §§60.4150 through 60.4162.

(2) The exemption under paragraph (a)(1) of this section shall become effective the day on which the Hg Budget unit is permanently retired. Within 30 days of the unit’s permanent retirement, the Hg designated representative shall submit a statement to the permitting authority otherwise responsible for administering any Hg Budget permit for the unit and shall submit a copy of the statement to the Administrator. The statement shall state, in a format prescribed by the permitting authority, that the unit was permanently retired on a specific date and will comply with the requirements of paragraph (b) of this section.

(3) After receipt of the notice under paragraph (a)(2) of this section, the permitting authority will amend any permit under §§60.4120 through 60.4124 covering the source

at which the unit is located to add the provisions and requirements of the exemption under paragraphs (a)(1) and (b) of this section.

(b) Special provisions.

(1) A unit exempt under paragraph (a) of this section shall not emit any mercury, starting on the date that the exemption takes effect.

(2) The permitting authority will allocate Hg allowances under §§60.4140 through 60.4142 to a unit exempt under paragraph (a) of this section.

(3) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under paragraph (a) of this section shall retain at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time before the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(4) The owners and operators and, to the extent applicable, the Hg designated representative of a unit exempt under paragraph (a) of this section shall comply with the requirements of the Hg Budget Trading Program concerning all periods for which the exemption is not in effect, even

if such requirements arise, or must be complied with, after the exemption takes effect.

(5) A unit exempt under paragraph (a) of this section and located at a source that is required, or but for this exemption would be required, to have a title V operating permit shall not resume operation unless the Hg designated representative of the source submits a complete Hg Budget permit application under §60.4122 for the unit not less than 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2010 or the date on which the unit resumes operation.

(6) On the earlier of the following dates, a unit exempt under paragraph (a) of this section shall lose its exemption:

(i) The date on which the Hg designated representative submits a Hg Budget permit application for the unit under paragraph (b)(5) of this section;

(ii) The date on which the Hg designated representative is required under paragraph (b)(5) of this section to submit a Hg Budget permit application for the unit; or

(iii) The date on which the unit resumes operation, if the Hg designated representative is not required to submit a Hg Budget permit application for the unit.

(7) For the purpose of applying monitoring, reporting, and recordkeeping requirements under §§60.4170 through 60.4176, a unit that loses its exemption under paragraph (a) of this section shall be treated as a unit that commences operation and commercial operation on the first date on which the unit resumes operation.

§60.4106 Standard Requirements.

(a) Permit Requirements.

(1) The Hg designated representative of each Hg Budget source required to have a title V operating permit and each Hg Budget unit required to have a title V operating permit at the source shall:

(i) Submit to the permitting authority a complete Hg Budget permit application under §60.4122 in accordance with the deadlines specified in §60.4121(a) and (b); and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a Hg Budget permit application and issue or deny a Hg Budget permit.

(2) The owners and operators of each Hg Budget source required to have a title V operating permit and each Hg Budget unit required to have a title V operating permit at the source shall have a Hg Budget permit issued by the permitting authority under §§60.4120 through 60.4124 for the

source and operate the source and the unit in compliance with such Hg Budget permit.

(3) The owners and operators of a Hg Budget source that is not required to have a title V operating permit and each Hg Budget unit that is not required to have a title V operating permit are not required to submit a Hg Budget permit application, and to have a Hg Budget permit, under §§60.4120 through 60.4124 for such Hg Budget source and such Hg Budget unit.

(b) Monitoring, Reporting, and Recordkeeping Requirements.

(1) The owners and operators, and the Hg designated representative, of each Hg Budget source and each Hg Budget unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of §§60.4170 through 60.4176.

(2) The emissions measurements recorded and reported in accordance with §§60.4170 through 60.4176 shall be used to determine compliance by each Hg Budget source with the Hg Budget emissions limitation under paragraph (c) of this section.

(c) Mercury emission requirements.

(1) As of the allowance transfer deadline for a control period, the owners and operators of each Hg Budget

source and each Hg Budget unit at the source shall hold, in the source’s compliance account, Hg allowances available for compliance deductions for the control period under §60.4154(a) in an amount not less than the ounces of total mercury emissions for the control period from all Hg Budget units at the source, as determined in accordance with §§60.4170 through 60.4176.

(2) A Hg Budget unit shall be subject to the requirements under paragraph (c)(1) of this section starting on the later of January 1, 2010 or the deadline for meeting the unit’s monitor certification requirements under §60.4170(b)(1) or (2).

(3) A Hg allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of this section, for a control period in a calendar year before the year for which the Hg allowance was allocated.

(4) Hg allowances shall be held in, deducted from, or transferred into or among Hg Allowance Tracking System accounts in accordance with §§60.4160 through 60.4162.

(5) A Hg allowance is a limited authorization to emit one ounce of mercury in accordance with the Hg Budget Trading Program. No provision of the Hg Budget Trading Program, the Hg Budget permit application, the Hg Budget permit, or an exemption under §60.4105 and no provision of

law shall be construed to limit the authority of the State or the United States to terminate or limit such authorization.

(6) A Hg allowance does not constitute a property right.

(7) Upon recordation by the Administrator under §§60.4150 through 60.4162, every allocation, transfer, or deduction of a Hg allowance to or from a Hg Budget unit’s compliance account is incorporated automatically in any Hg Budget permit of the source that includes the Hg Budget unit.

(d) Excess emissions requirements.

(1) If a Hg Budget source emits mercury during any control period in excess of the Hg Budget emissions limitation, then:

(i) The owners and operators of the source and each Hg Budget unit at the source shall surrender the Hg allowances required for deduction under §60.4154(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(ii) Each ounce of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

(e) Recordkeeping and reporting requirements.

(1) Unless otherwise provided, the owners and operators of the Hg Budget source and each Hg Budget unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the Administrator.

(i) The certificate of representation under §60.4113 for the Hg designated representative for the source and each Hg Budget unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under §60.4113 changing the Hg designated representative.

(ii) All emissions monitoring information, in accordance with §§60.4170 through 60.4176, provided that to the extent that §§60.4170 through 60.4176 provides for a 3-year period for recordkeeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the Hg Budget Trading Program.

(iv) Copies of all documents used to complete a Hg Budget permit application and any other submission under the Hg Budget Trading Program or to demonstrate compliance with the requirements of the Hg Budget Trading Program.

(2) The Hg designated representative of a Hg Budget source and each Hg Budget unit at the source shall submit the reports required under the Hg Budget Trading Program, including those under §§60.4170 through 60.4176.

(f) Liability.

(1) Each Hg Budget source and each Hg Budget unit shall meet the requirements of the Hg Budget Trading Program.

(2) Any provision of the Hg Budget Trading Program that applies to a Hg Budget source or the Hg designated representative of a Hg Budget source shall also apply to the owners and operators of such source and of the Hg Budget units at the source.

(3) Any provision of the Hg Budget Trading Program that applies to a Hg Budget unit or the Hg designated representative of a Hg Budget unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities. No provision of the Hg Budget Trading Program, a Hg Budget permit application, a Hg Budget permit, or an exemption under §60.4105 shall be construed as exempting or excluding the owners and operators, and the Hg designated representative, of a Hg Budget source or Hg Budget unit from compliance with any other provision of the applicable, approved State implementation plan, a Federally enforceable permit, or the CAA.

§60.4107 Computation of Time.

(a) Unless otherwise stated, any time period scheduled, under the Hg Budget Trading Program, to begin on the occurrence of an act or event shall begin on the day the act or event occurs.

(b) Unless otherwise stated, any time period scheduled, under the Hg Budget Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(c) Unless otherwise stated, if the final day of any time period, under the Hg Budget Trading Program, falls on a weekend or a State or Federal holiday, the time period shall be extended to the next business day.

§60.4108 Appeal Procedures.

The appeal procedures for decisions of the Administrator under the Hg Budget Trading Program shall be the procedures set forth in part 78 of this chapter, applied by replacing the terms "subparts AA through II of part 96 of this chapter," "§96.141(b)(2) or (c)(2)," "§96.154," "§96.156," "§96.161," "§96.175," "CAIR NO_X allowances," "CAIR NO_X Allowance Tracking System account," "CAIR designated representative," "CAIR authorized account representative," and "§96.106" by the terms "subpart HHHH of this part," "§60.4141 (b)(2) or (c)(2)," "§60.4154," "§60.4156," "§60.4161," "§60.4175," "Hg allowances," "Hg Allowance Tracking System Account," "Hg designated representative," "Hg authorized account representative," and "§60.4106."

Hg Designated Representative for Hg Budget Sources

§60.4110 Authorization and Responsibilities of Hg Designated Representative.

(a) Except as provided under §60.4111, each Hg Budget source, including all Hg Budget units at the source, shall have one and only one Hg designated representative, with regard to all matters under the Hg Budget Trading Program concerning the source or any Hg Budget unit at the source.

(b) The Hg designated representative of the Hg Budget source shall be selected by an agreement binding on the owners and operators of the source and all Hg Budget units at the source and shall act in accordance with the certification statement in §60.4113(a)(5)(iv).

(c) Upon receipt by the Administrator of a complete certificate of representation under §60.4113, the Hg designated representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the Hg Budget source represented and each Hg Budget unit at the source in all matters pertaining to the Hg Budget Trading Program, notwithstanding any agreement between the Hg designated representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the Hg designated representative by the permitting authority, the Administrator, or a court regarding the source or unit.

(d) No Hg Budget permit will be issued, no emissions data reports will be accepted, and no Hg Allowance Tracking System account will be established for a Hg Budget unit at a source, until the Administrator has received a complete certificate of representation under §60.4113 for a Hg designated representative of the source and the Hg Budget units at the source.

(e)(1) Each submission under the Hg Budget Trading

Program shall be submitted, signed, and certified by the Hg designated representative for each Hg Budget source on behalf of which the submission is made. Each such submission shall include the following certification statement by the Hg designated representative: “I am authorized to make this submission on behalf of the owners and operators of the source or units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(2) The permitting authority and the Administrator will accept or act on a submission made on behalf of owner or operators of a Hg Budget source or a Hg Budget unit only if the submission has been made, signed, and certified in accordance with paragraph (e)(1) of this section.

§60.4111 Alternate Hg Designated Representative.

(a) A certificate of representation under §60.4113 may designate one and only one alternate Hg designated representative, who may act on behalf of the Hg designated representative. The agreement by which the alternate Hg designated representative is selected shall include a procedure for authorizing the alternate Hg designated representative to act in lieu of the Hg designated representative.

(b) Upon receipt by the Administrator of a complete certificate of representation under §60.4113, any representation, action, inaction, or submission by the alternate Hg designated representative shall be deemed to be a representation, action, inaction, or submission by the Hg designated representative.

(c) Except in this section and §§60.4102, 60.4110(a) and (d), 60.4112, 60.4113, 60.4151, and 60.4174, whenever the term “Hg designated representative” is used in this subpart, the term shall be construed to include the Hg designated representative or any alternate Hg designated representative.

§60.4112 Changing Hg Designated Representative and Alternate Hg Designated Representative; Changes in Owners and Operators.

(a) Changing Hg designated representative. The Hg designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §60.4113. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous Hg designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new Hg designated representative and the owners and operators of the Hg Budget source and the Hg Budget units at the source.

(b) Changing alternate Hg designated representative. The alternate Hg designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §60.4113. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate Hg designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new alternate Hg designated representative and the owners and operators of the Hg Budget source and the Hg Budget units at the source.

(c) Changes in owners and operators.

(1) In the event a new owner or operator of a Hg

Budget source or a Hg Budget unit is not included in the list of owners and operators in the certificate of representation under §60.4113, such new owner or operator shall be deemed to be subject to and bound by the certificate of representation, the representations, actions, inactions, and submissions of the Hg designated representative and any alternate Hg designated representative of the source or unit, and the decisions and orders of the permitting authority, the Administrator, or a court, as if the new owner or operator were included in such list.

(2) Within 30 days following any change in the owners and operators of a Hg Budget source or a Hg Budget unit, including the addition of a new owner or operator, the Hg designated representative or any alternate Hg designated representative shall submit a revision to the certificate of representation under §60.4113 amending the list of owners and operators to include the change.

§60.4113 Certificate of Representation.

(a) A complete certificate of representation for a Hg designated representative or an alternate Hg designated representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the Hg Budget source, and each

Hg Budget unit at the source, for which the certificate of representation is submitted.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the Hg designated representative and any alternate Hg designated representative.

(3) A list of the owners and operators of the Hg Budget source and of each Hg Budget unit at the source.

(4) The following certification statements by the Hg designated representative and any alternate Hg designated representative:

(i) “I certify that I was selected as the Hg designated representative or alternate Hg designated representative, as applicable, by an agreement binding on the owners and operators of the source and each Hg Budget unit at the source.”

(ii) “I certify that I have all the necessary authority to carry out my duties and responsibilities under the Hg Budget Trading Program on behalf of the owners and operators of the source and of each Hg Budget unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.”

(iii) “I certify that the owners and operators of the source and of each Hg Budget unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.”

(iv) “Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a Hg Budget unit, or where a customer purchases power from a Hg Budget unit under a life-of-the-unit, firm power contractual arrangement, I certify that: I have given a written notice of my selection as the ‘Hg designated representative’ or ‘alternate Hg designated representative,’ as applicable, and of the agreement by which I was selected to each owner and operator of the source and of each Hg Budget unit at the source; and Hg allowances and proceeds of transactions involving Hg allowances will be deemed to be held or distributed in proportion to each holder’s legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of Hg allowances by contract, Hg allowances and proceeds of transactions involving Hg allowances will be deemed to be held or distributed in accordance with the contract.”

(5) The signature of the Hg designated representative and any alternate Hg designated representative and the dates

signed.

(b) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the certificate of representation shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

§60.4114 Objections Concerning Hg Designated Representative.

(a) Once a complete certificate of representation under §60.4113 has been submitted and received, the permitting authority and the Administrator will rely on the certificate of representation unless and until a superseding complete certificate of representation under §60.4113 is received by the Administrator.

(b) Except as provided in §60.4112(a) or (b), no objection or other communication submitted to the permitting authority or the Administrator concerning the authorization, or any representation, action, inaction, or submission, of the Hg designated representative shall affect any representation, action, inaction, or submission of the Hg designated representative or the finality of any decision or order by the permitting authority or the Administrator under the Hg Budget Trading Program.

(c) Neither the permitting authority nor the Administrator will adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of any Hg designated representative, including private legal disputes concerning the proceeds of Hg allowance transfers.

Permits

§60.4120 General Hg Budget Trading Program Permit Requirements.

(a) For each Hg Budget source required to have a title V operating permit, such permit shall include a Hg Budget permit administered by the permitting authority for the title V operating permit. The Hg Budget portion of the title V permit shall be administered in accordance with the permitting authority's title V operating permits regulations promulgated under part 70 or 71 of this chapter, except as provided otherwise by this section and §§60.4121 through 60.4124.

(b) Each Hg Budget permit shall contain, with regard to the Hg Budget source and the Hg Budget units at the source covered by the Hg Budget permit, all applicable Hg Budget Trading Program requirements and shall be a complete and separable portion of the title V operating permit.

§60.4121 Submission of Hg Budget Permit Applications.

(a) Duty to apply. The Hg designated representative of any Hg Budget source required to have a title V operating permit shall submit to the permitting authority a complete Hg Budget permit application under §60.4122 for the source covering each Hg Budget unit at the source at least 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2010 or the date on which the Hg Budget unit commences operation.

(b) Duty to Reapply. For a Hg Budget source required to have a title V operating permit, the Hg designated representative shall submit a complete Hg Budget permit application under §60.4122 for the source covering each Hg Budget unit at the source to renew the Hg Budget permit in accordance with the permitting authority’s title V operating permits regulations addressing permit renewal.

§60.4122 Information Requirements for Hg Budget Permit Applications.

A complete Hg Budget permit application shall include the following elements concerning the Hg Budget source for which the application is submitted, in a format prescribed by the permitting authority:

(a) Identification of the Hg Budget source;

(b) Identification of each Hg Budget unit at the Hg

Budget source; and

(c) The standard requirements under §60.4106.

§60.4123 Hg Budget Permit Contents and Term.

(a) Each Hg Budget permit will contain, in a format prescribed by the permitting authority, all elements required for a complete Hg Budget permit application under §60.4122.

(b) Each Hg Budget permit is deemed to incorporate automatically the definitions of terms under §60.4102 and, upon recordation by the Administrator under §§60.4150 through 60.4162, every allocation, transfer, or deduction of a Hg allowance to or from the compliance account of the Hg Budget source covered by the permit.

(c) The term of the Hg Budget permit will be set by the permitting authority, as necessary to facilitate coordination of the renewal of the Hg Budget permit with issuance, revision, or renewal of the Hg Budget source's title V operating permit.

§60.4124 Hg Budget Permit Revisions.

Except as provided in §60.4123(b), the permitting authority will revise the Hg Budget permit, as necessary, in accordance with the permitting authority's title V operating permits regulations addressing permit revisions.

§60.4130 [Reserved]

§60.4124 Hg Budget Permit Revisions.

Except as provided in §60.4123(b), the permitting authority will revise the Hg Budget permit, as necessary, in accordance with the permitting authority’s title V operating permits regulations addressing permit revisions.

§60.4130 [Reserved]

Hg Allowance Allocations

§60.4140 State Trading Budgets.

The State trading budgets for annual allocations of Hg allowances for the control periods in 2010 through 2017 and in 2018 and thereafter are respectively as follows:

State	State Trading Budget (tons)	
	2010-2017	2018 and thereafter
Alaska	0.005	0.002
Alabama	1.289	0.509
Arkansas	0.516	0.204
Arizona	0.454	0.179
California	0.041	0.016
Colorado	0.706	0.279
Connecticut	0.053	0.021
Delaware	0.072	0.028
District of Columbia	0	0
Florida	1.233	0.487
Georgia	1.227	0.484
Hawaii	0.024	0.009
Idaho	0	0
Iowa	0.727	0.287
Illinois	1.594	0.629
Indiana	2.098	0.828
Kansas	0.723	0.285
Kentucky	1.525	0.602
Louisiana	0.601	0.237
Massachusetts	0.172	0.068
Maryland	0.49	0.193
Maine	0.001	0.001
Michigan	1.303	0.514
Minnesota	0.695	0.274
Missouri	1.393	0.55

Mississippi	0.291	0.115
Montana	0.378	0.149
Navajo Nation Indian country	0.601	0.237
North Carolina	1.133	0.447
North Dakota	1.564	0.617
Nebraska	0.421	0.166
New Hampshire	0.063	0.025
New Jersey	0.153	0.06
New Mexico	0.299	0.118
Nevada	0.285	0.112
New York	0.393	0.155
Ohio	2.057	0.812
Oklahoma	0.721	0.285
Oregon	0.076	0.03
Pennsylvania	1.78	0.702
Rhode Island	0	0
South Carolina	0.58	0.229
South Dakota	0.072	0.029
Tennessee	0.944	0.373
Texas	4.657	1.838
Utah	0.506	0.2
Ute Indian Tribe Indian country	0.06	0.024
Virginia	0.592	0.234
Vermont	0	0
Washington	0.198	0.078
Wisconsin	0.89	0.351
West Virginia	1.394	0.55
Wyoming	0.952	0.376

§60.4141 Timing Requirements for Hg Allowance Allocations.

(a) By October 31, 2006, the permitting authority will submit to the Administrator the Hg allowance allocations, in a format prescribed by the Administrator and in accordance with §60.4142(a) and (b), for the control periods in 2010, 2011, 2012, 2013, and 2014.

(b)(1) By October 31, 2008 and October 31 of each year thereafter, the permitting authority will submit to the Administrator the Hg allowance allocations, in a format prescribed by the Administrator and in accordance with §60.4142(a) and (b), for the control period in the sixth year after the year of the applicable deadline for submission under this paragraph.

(2) If the permitting authority fails to submit to the Administrator the Hg allowance allocations in accordance with paragraph (b)(1) of this section, the Administrator will assume that the allocations of Hg allowances for the applicable control period are the same as for the control period that immediately precedes the applicable control period, except that, if the applicable control period is in 2018, the Administrator will assume that the allocations equal the allocations for the control period in 2017, multiplied by the amount of ounces (i.e., tons multiplied by 32,000 ounces/ton) of Hg emissions in the applicable State trading budget under §60.4140 for 2018 and thereafter and divided by such amount of ounces of Hg emissions for 2010 through 2017.

(c)(1) By October 31, 2010 and October 31 of each year thereafter, the permitting authority will submit to the Administrator the Hg allowance allocations, in a format prescribed by the Administrator and in accordance with §60.4142(a), (c), and (d), for the control period in the year of the applicable deadline for submission under this paragraph.

(2) If the permitting authority fails to submit to the Administrator the Hg allowance allocations in accordance with paragraph (c)(1) of this section, the Administrator will assume that the allocations of Hg allowances for the applicable control period are the same as for the control period that immediately precedes the applicable control period, except that, if the applicable control period is in 2018, the Administrator will assume that the allocations equal the allocations for the control period in 2017, multiplied by the amount of ounces (i.e., tons multiplied by 32,000 ounces/ton) of Hg emissions in the applicable State trading budget under §60.4140 for 2018 and thereafter and divided by such amount of ounces of Hg emissions for 2010 through 2017 and except that any Hg Budget unit that would otherwise be allocated Hg allowances under §60.4142(a) and (b), as well as under §60.4142(a), (c), and (d), for the applicable control period will be assumed to be allocated no Hg allowances under §60.4142(a), (c), and (d) for the applicable control period.

§60.4142 Hg Allowance Allocations.

(a)(1) The baseline heat input (in MMBtu) used with respect to Hg allowance allocations under paragraph (b) of this section for each Hg Budget unit will be:

(i) For units commencing operation before January 1, 2001, the average of the three highest amounts of the unit’s adjusted control period heat input for 2000 through 2004, with the adjusted control period heat input for each year calculated as the sum of the following:

(A) Any portion of the unit’s control period heat input for the year that results from the unit’s combustion of lignite, multiplied by 3.0;

(B) Any portion of the unit’s control period heat input for the year that results from the unit’s combustion of subbituminous coal, multiplied by 1.25; and

(C) Any portion of the unit’s control period heat input for the year that is not covered by paragraph (a)(1)(i)(A) or (B) of this section, multiplied by 1.0.

(ii) For units commencing operation on or after January 1, 2001 and operating each calendar year during a period of 5 or more consecutive calendar years, the average of the 3 highest amounts of the unit’s total converted control period heat input over the first such 5 years.

(2)(i) A unit’s control period heat input for a calendar year under paragraphs (a)(1)(i) of this section, and a unit’s total ounces of Hg emissions during a calendar year under paragraph (c)(3) of this section, will be determined in accordance with part 75 of this chapter, to the extent the unit was otherwise subject to the requirements of part 75 of this chapter for the year, or will be based on the best available data reported to the permitting authority for the unit, to the extent the unit was not otherwise subject to the requirements of part 75 of this chapter for the year. The unit’s types and amounts of fuel combusted, under paragraph (a)(1)(i) of this section, will be based on the best available data reported to the permitting authority for the unit.

(ii) A unit’s converted control period heat input for a calendar year specified under paragraph (a)(1)(ii) of this section equals:

(A) Except as provided in paragraph (a)(2)(ii)(B) or (C) of this section, the control period gross electrical output of the generator or generators served by the unit multiplied by 7,900 Btu/kWh and divided by 1,000,000 Btu/MMBtu, provided that if a generator is served by 2 or more units, then the gross electrical output of the generator will be attributed to each unit in proportion to the unit’s share of the total control period heat input of such units for the year;

(B) For a unit that is a boiler and has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the total heat energy (in Btu) of the steam produced by the boiler during the control period, divided by 0.8 and by 1,000,000 Btu/MMBtu; or

(C) For a unit that is a combustion turbine and has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the control period gross electrical output of the enclosed device comprising the compressor, combustor, and turbine multiplied by 3,413 Btu/kWh, plus the total heat energy (in Btu) of the steam produced by any associated heat recovery steam generator during the control period multiplied by 0.8, and with the sum divided by 1,000,000 Btu/MMBtu.

(b)(1) For each control period in 2010 and thereafter, the permitting authority will allocate to all Hg Budget units in the State that have a baseline heat input (as determined under paragraph (a) of this section) a total amount of Hg allowances equal to 95 percent for a control period in 2010 through 2014, and 97 percent for a control period in 2015 and thereafter, of the amount of ounces (i.e., tons multiplied by 32,000 ounces/ton) of Hg emissions in the applicable State trading budget under §60.4140 (except as provided in paragraph (d) of this section).

(2) The permitting authority will allocate Hg

allowances to each Hg Budget unit under paragraph (b)(1) of this section in an amount determined by multiplying the total amount of Hg allowances allocated under paragraph (b)(1) of this section by the ratio of the baseline heat input of such Hg Budget unit to the total amount of baseline heat input of all such Hg Budget units in the State and rounding to the nearest whole allowance as appropriate.

(c) For each control period in 2010 and thereafter, the permitting authority will allocate Hg allowances to Hg Budget units in the State that commenced operation on or after January 1, 2001 and do not yet have a baseline heat input (as determined under paragraph (a) of this section), in accordance with the following procedures:

(1) The permitting authority will establish a separate new unit set-aside for each control period. Each new unit set-aside will be allocated Hg allowances equal to 5 percent for a control period in 2010 through 2014, and 3 percent for a control period in 2015 and thereafter, of the amount of ounces (i.e., tons multiplied by 32,000 ounces/ton) of Hg emissions in the applicable State trading budget under §60.4140.

(2) The Hg designated representative of such a Hg Budget unit may submit to the permitting authority a request, in a format specified by the permitting authority,

to be allocated Hg allowances, starting with the later of the control period in 2010 or the first control period after the control period in which the Hg Budget unit commences commercial operation and until the first control period for which the unit is allocated Hg allowances under paragraph (b) of this section. The Hg allowance allocation request must be submitted on or before July 1 of the first control period for which the Hg allowances are requested and after the date on which the Hg Budget unit commences commercial operation.

(3) In a Hg allowance allocation request under paragraph (c)(2) of this section, the Hg designated representative may request for a control period Hg allowances in an amount not exceeding the Hg Budget unit's total ounces of Hg emissions during the control period immediately before such control period.

(4) The permitting authority will review each Hg allowance allocation request under paragraph (c)(2) of this section and will allocate Hg allowances for each control period pursuant to such request as follows:

(i) The permitting authority will accept an allowance allocation request only if the request meets, or is adjusted by the permitting authority as necessary to meet, the requirements of paragraphs (c)(2) and (3) of this section.

(ii) On or after July 1 of the control period, the permitting authority will determine the sum of the Hg allowances requested (as adjusted under paragraph (c)(4)(i) of this section) in all allowance allocation requests accepted under paragraph (c)(4)(i) of this section for the control period.

(iii) If the amount of Hg allowances in the new unit set-aside for the control period is greater than or equal to the sum under paragraph (c)(4)(ii) of this section, then the permitting authority will allocate the amount of Hg allowances requested (as adjusted under paragraph (c)(4)(i) of this section) to each Hg Budget unit covered by an allowance allocation request accepted under paragraph (c)(4)(i) of this section.

(iv) If the amount of Hg allowances in the new unit set-aside for the control period is less than the sum under paragraph (c)(4)(ii) of this section, then the permitting authority will allocate to each Hg Budget unit covered by an allowance allocation request accepted under paragraph (c)(4)(i) of this section the amount of the Hg allowances requested (as adjusted under paragraph (c)(4)(i) of this section), multiplied by the amount of Hg allowances in the new unit set-aside for the control period, divided by the sum determined under paragraph (c)(4)(ii) of this section, and rounded to the nearest whole allowance as appropriate.

(v) The permitting authority will notify each Hg designated representative that submitted an allowance allocation request of the amount of Hg allowances (if any) allocated for the control period to the Hg Budget unit covered by the request.

(d) If, after completion of the procedures under paragraph (c)(4) of this section for a control period, any unallocated Hg allowances remain in the new unit set-aside for the control period, the permitting authority will allocate to each Hg Budget unit that was allocated Hg allowances under paragraph (b) of this section an amount of Hg allowances equal to the total amount of such remaining unallocated Hg allowances, multiplied by the unit’s allocation under paragraph (b) of this section, divided by 95 percent for 2010 through 2014, and 97 percent for 2014 and thereafter, of the amount of ounces (i.e., tons multiplied by 32,000 ounces/ton) of Hg emissions in the applicable State trading budget under §60.4140, and rounded to the nearest whole allowance as appropriate.

Hg Allowance Tracking System

§60.4150 [Reserved].

§60.4151 Establishment of Accounts.

(a) Compliance accounts. Upon receipt of a complete certificate of representation under §60.4113, the Administrator will establish a compliance account for the Hg Budget source for which the certificate of representation was submitted unless the source already has a compliance account.

(b) General accounts.

(1) Application for general account.

(i) Any person may apply to open a general account for the purpose of holding and transferring Hg allowances. An application for a general account may designate one and only one Hg authorized account representative and one and only one alternate Hg authorized account representative who may act on behalf of the Hg authorized account representative. The agreement by which the alternate Hg authorized account representative is selected shall include a procedure for authorizing the alternate Hg authorized account representative to act in lieu of the Hg authorized account representative.

(ii) A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(A) Name, mailing address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the Hg authorized account representative and any alternate Hg authorized account representative;

(B) Organization name and type of organization, if applicable;

(C) A list of all persons subject to a binding agreement for the Hg authorized account representative and any alternate Hg authorized account representative to represent their ownership interest with respect to the allowances held in the general account;

(D) The following certification statement by the Hg authorized account representative and any alternate Hg authorized account representative: “I certify that I was selected as the Hg authorized account representative or the alternate Hg authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to allowances held in the general account. I certify that I have all the necessary authority to carry out my duties and responsibilities under the Hg Budget Trading Program on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Administrator or a court regarding the general account.”

(E) The signature of the Hg authorized account representative and any alternate Hg authorized account representative and the dates signed.

(iii) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the application for a general account shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

(2) Authorization of Hg authorized account representative.

(i) Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section:

(A) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(B) The Hg authorized account representative and any alternate Hg authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to Hg allowances held in the general account in all matters pertaining to the Hg Budget Trading Program, notwithstanding any agreement between the Hg authorized account representative or any alternate Hg authorized account representative and such person. Any such person shall be bound by any order or decision issued to the Hg authorized account representative or any alternate Hg authorized account representative by the Administrator or a court regarding the general account.

(C) Any representation, action, inaction, or submission by any alternate Hg authorized account representative shall be deemed to be a representation, action, inaction, or submission by the Hg authorized account representative.

(ii) Each submission concerning the general account shall be submitted, signed, and certified by the Hg authorized account representative or any alternate Hg authorized account representative for the persons having an ownership interest with respect to Hg allowances held in the general account. Each such submission shall include the following certification statement by the Hg authorized account representative or any alternate Hg authorized account representative: “I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the Hg allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(iii) The Administrator will accept or act on a submission concerning the general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(ii) of this section.

(3) Changing Hg authorized account representative and alternate Hg authorized account representative; changes in persons with ownership interest.

(i) The Hg authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous Hg authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new Hg authorized account representative and the persons with an ownership interest with respect to the Hg allowances in the general account.

(ii) The alternate Hg authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate Hg authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new alternate Hg authorized account representative and the persons with an ownership interest with respect to the Hg allowances in the general account.

(iii)(A) In the event a new person having an ownership interest with respect to Hg allowances in the general account is not included in the list of such persons in the application for a general account, such new person shall be deemed to be subject to and bound by the application for a general account, the representation, actions, inactions, and submissions of the Hg authorized account representative and any alternate Hg authorized account representative of the account, and the decisions and orders of the Administrator or a court, as if the new person were included in such list.

(B) Within 30 days following any change in the persons having an ownership interest with respect to Hg allowances in the general account, including the addition of persons, the Hg authorized account representative or any alternate Hg authorized account representative shall submit a revision to the application for a general account amending the list of persons having an ownership interest with respect to the Hg allowances in the general account to include the change.

(4) Objections concerning Hg authorized account representative.

(i) Once a complete application for a general account under paragraph (b)(1) of this section has been submitted and received, the Administrator will rely on the application unless and until a superseding complete application for a general account under paragraph (b)(1) of this section is received by the Administrator.

(ii) Except as provided in paragraph (b)(3)(i) or (ii) of this section, no objection or other communication submitted to the Administrator concerning the authorization, or any representation, action, inaction, or submission of the Hg authorized account representative or any alternative

Hg authorized account representative for a general account shall affect any representation, action, inaction, or submission of the Hg authorized account representative or any alternative Hg authorized account representative or the finality of any decision or order by the Administrator under the Hg Budget Trading Program.

(iii) The Administrator will not adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the Hg authorized account representative or any alternative Hg authorized account representative for a general account, including private legal disputes concerning the proceeds of Hg allowance transfers.

(c) Account identification. The Administrator will assign a unique identifying number to each account established under paragraph (a) or (b) of this section.

§60.4152 Responsibilities of Hg Authorized Account Representative.

Following the establishment of a Hg Allowance Tracking System account, all submissions to the Administrator pertaining to the account, including, but not limited to, submissions concerning the deduction or transfer of Hg allowances in the account, shall be made only by the Hg authorized account representative for the account.

§60.4153 Recordation of Hg Allowance Allocations.

(a) By December 1, 2006, the Administrator will record in the Hg Budget source’s compliance account the Hg allowances allocated for the Hg Budget units at a source, as submitted by the permitting authority in accordance with §60.4141(a), for the control periods in 2010, 2011, 2012, 2013, and 2014.

(b) By December 1, 2008, the Administrator will record in the Hg Budget source’s compliance account the Hg allowances allocated for the Hg Budget units at the source, as submitted by the permitting authority or as determined by the Administrator in accordance with §60.4141(b), for the control period in 2015.

(c) In 2011 and each year thereafter, after the Administrator has made all deductions (if any) from a Hg Budget source’s compliance account under §60.4154, the Administrator will record in the Hg Budget source’s compliance account the Hg allowances allocated for the Hg Budget units at the source, as submitted by the permitting authority or determined by the Administrator in accordance with §60.4141(b), for the control period in the sixth year after the year of the control period for which such deductions were or could have been made.

(d) By December 1, 2010 and December 1 of each year thereafter, the Administrator will record in the Hg Budget source's compliance account the Hg allowances allocated for the Hg Budget units at the source, as submitted by the permitting authority or determined by the Administrator in accordance with §60.4141(c), for the control period in the year of the applicable deadline for recordation under this paragraph.

(e) Serial numbers for allocated Hg allowances. When recording the allocation of Hg allowances for a Hg Budget unit in a compliance account, the Administrator will assign each Hg allowance a unique identification number that will include digits identifying the year of the control period for which the Hg allowance is allocated.

§60.4154 Compliance with Hg Budget Emissions Limitation.

(a) Allowance transfer deadline. The Hg allowances are available to be deducted for compliance with a source's Hg Budget emissions limitation for a control period in a given calendar year only if the Hg allowances:

(1) Were allocated for the control period in the year or a prior year;

(2) Are held in the compliance account as of the allowance transfer deadline for the control period or are transferred into the compliance account by a Hg allowance transfer correctly submitted for recordation under

§§60.4160 through 60.4162 by the allowance transfer deadline for the control period; and

(3) Are not necessary for deductions for excess emissions for a prior control period under paragraph (d) of this section.

(b) Deductions for compliance. Following the recordation, in accordance with §§60.4160 through 60.4162, of Hg allowance transfers submitted for recordation in a source’s compliance account by the allowance transfer deadline for a control period, the Administrator will deduct from the compliance account Hg allowances available under paragraph (a) of this section in order to determine whether the source meets the Hg Budget emissions limitation for the control period, as follows:

(1) Until the amount of Hg allowances deducted equals the number of ounces of total Hg emissions, determined in accordance with §§60.4170 through 60.4176, from all Hg Budget units at the source for the control period; or

(2) If there are insufficient Hg allowances to complete the deductions in paragraph (b)(1) of this section, until no more Hg allowances available under paragraph (a) of this section remain in the compliance account.

(c)(1) Identification of Hg allowances by serial number. The Hg authorized account representative for a source’s compliance account may request that specific Hg allowances, identified by serial number, in the compliance account be deducted for emissions or excess emissions for a control period in accordance with paragraph (b) or (d) of this section. Such request shall be submitted to the Administrator by the allowance transfer deadline for the control period and include, in a format prescribed by the Administrator, the identification of the Hg Budget source and the appropriate serial numbers.

(2) First-in, first-out. The Administrator will deduct Hg allowances under paragraph (b) or (d) of this section from the source’s compliance account, in the absence of an identification or in the case of a partial identification of Hg allowances by serial number under paragraph (c)(1) of this section, on a first-in, first-out (FIFO) accounting basis in the following order:

(i) Any Hg allowances that were allocated to the units at the source, in the order of recordation; and then

(ii) Any Hg allowances that were allocated to any unit and transferred and recorded in the compliance account pursuant to §§60.4160 through 60.4162, in the order of recordation.

(d) Deductions for excess emissions.

(1) After making the deductions for compliance under

paragraph (b) of this section for a control period in a calendar year in which the Hg Budget source has excess emissions, the Administrator will deduct from the source’s compliance account an amount of Hg allowances, allocated for the control period in the immediately following calendar year, equal to 3 times the number of ounces of the source’s excess emissions.

(2) Any allowance deduction required under paragraph (d)(1) of this section shall not affect the liability of the owners and operators of the Hg Budget source or the Hg Budget units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violation, as ordered under the Clean Air Act or applicable State law.

(e) Recordation of deductions. The Administrator will record in the appropriate compliance account all deductions from such an account under paragraph (b) or (d) of this section.

(f) Administrator’s action on submissions.

(1) The Administrator may review and conduct independent audits concerning any submission under the Hg Budget Trading Program and make appropriate adjustments of the information in the submissions.

(2) The Administrator may deduct Hg allowances from or

transfer Hg allowances to a source’s compliance account based on the information in the submissions, as adjusted under paragraph (f)(1) of this section.

§60.4155 Banking.

(a) Hg allowances may be banked for future use or transfer in a compliance account or a general account in accordance with paragraph (b) of this section.

(b) Any Hg allowance that is held in a compliance account or a general account will remain in such account unless and until the Hg allowance is deducted or transferred under §60.4154, §60.4156, or §§60.4160 through 60.4162..

§60.4156 Account Error.

The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any Hg Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the Hg authorized account representative for the account.

§60.4157 Closing of General Accounts.

(a) The Hg authorized account representative of a general account may submit to the Administrator a request to close the account, which shall include a correctly submitted allowance transfer under §60.4160 through 60.4162 for any Hg allowances in the account to one or more other Hg Allowance Tracking System accounts.

(b) If a general account has no allowance transfers in or out of the account for a 12-month period or longer and does not contain any Hg allowances, the Administrator may notify the Hg authorized account representative for the account that the account will be closed following 20 business days after the notice is sent. The account will be closed after the 20-day period unless, before the end of the 20-day period, the Administrator receives a correctly submitted transfer of Hg allowances into the account under §60.4160 through 60.4162 or a statement submitted by the Hg authorized account representative demonstrating to the satisfaction of the Administrator good cause as to why the account should not be closed.

Hg Allowance Transfers

§60.4160 Submission of Hg Allowance Transfers.

An Hg authorized account representative seeking recordation of a Hg allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the Hg allowance transfer shall include the following elements, in a format specified by the Administrator:

(a) The account numbers for both the transferor and transferee accounts;

(b) The serial number of each Hg allowance that is in the transferor account and is to be transferred; and

(c) The name and signature of the Hg authorized account representative of the transferor account and the date signed.

§60.4161 EPA Recordation.

(a) Within 5 business days (except as provided in paragraph (b) of this section) of receiving a Hg allowance transfer, the Administrator will record a Hg allowance transfer by moving each Hg allowance from the transferor account to the transferee account as specified by the request, provided that:

(1) The transfer is correctly submitted under §60.4160; and

(2) The transferor account includes each Hg allowance identified by serial number in the transfer.

(b) A Hg allowance transfer that is submitted for recordation after the allowance transfer deadline for a control period and that includes any Hg allowances allocated for any control period before such allowance transfer deadline will not be recorded until after the Administrator completes the deductions under §60.4154 for the control period immediately before such allowance transfer deadline.

(c) Where a Hg allowance transfer submitted for recordation fails to meet the requirements of paragraph (a) of this section, the Administrator will not record such transfer.

§60.4162 Notification.

(a) Notification of recordation. Within 5 business days of recordation of a Hg allowance transfer under §60.4161, the Administrator will notify the Hg authorized account representatives of both the transferor and transferee accounts.

(b) Notification of non-recordation. Within 10 business days of receipt of a Hg allowance transfer that fails to meet the requirements of §60.4161(a), the Administrator will notify the Hg authorized account representatives of both accounts subject to the transfer of:

(1) A decision not to record the transfer, and

(2) The reasons for such non-recordation.

(c) Nothing in this section shall preclude the submission of a Hg allowance transfer for recordation following notification of non-recordation.

Monitoring and Reporting

§60.4170 General Requirements.

The owners and operators, and to the extent applicable, the Hg designated representative, of a Hg Budget unit, shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this section, §§60.4171 through

60.4176, and subpart I of part 75 of this chapter. For purposes of complying with such requirements, the definitions in §60.4102 and in §72.2 of this chapter shall apply, and the terms “affected unit,” “designated representative,” and “continuous emission monitoring system” (or “CEMS”) in part 75 of this chapter shall be deemed to refer to the terms “Hg Budget unit,” “Hg designated representative,” and “continuous emission monitoring system” (or “CEMS”) respectively, as defined in §60.4102. The owner or operator of a unit that is not a Hg Budget unit but that is monitored under §75.82(b)(2)(i) of this chapter shall comply with the same monitoring, recordkeeping, and reporting requirements as a Hg Budget unit.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each Hg Budget unit shall:

(1) Install all monitoring systems required under this section and §§60.4171 through 60.4176 for monitoring Hg mass emissions and individual unit heat input (including all systems required to monitor Hg concentration, stack gas moisture content, stack gas flow rate, and CO_2 or O_2 concentration, as applicable, in accordance with §§75.81 and 75.82 of this chapter);

(2) Successfully complete all certification tests

required under §60.4171 and meet all other requirements of this section, §§60.4171 through 60.4176, and subpart I of part 75 of this chapter applicable to the monitoring systems under paragraph (a)(1) of this section; and

(3) Record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section.

(b) Compliance deadlines. The owner or operator shall meet the monitoring system certification and other requirements of paragraphs (a)(1) and (2) of this section on or before the following dates. The owner or operator shall record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section on and after the following dates.

(1) For the owner or operator of a Hg Budget unit that commences commercial operation before July 1, 2008, by January 1, 2009.

(2) For the owner or operator of a Hg Budget unit that commences commercial operation on or after July 1, 2008, by the later of the following dates:

(i) January 1, 2009; or

(ii) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which the unit commences commercial operation.

(3) For the owner or operator of a Hg Budget unit for which construction of a new stack or flue or installation of add-on Hg emission controls, a flue gas desulfurization system, a selective catalytic reduction system, or a compact hybrid particulate collector system is completed after the applicable deadline under paragraph (b)(1)or (2) of this section, by 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue, add-on Hg emissions controls, flue gas desulfurization system, selective catalytic reduction system, or compact hybrid particulate collector system.

(c) Reporting data.

(1) Except as provided in paragraph (c)(2) of this section, the owner or operator of a Hg Budget unit that does not meet the applicable compliance date set forth in paragraph (b) of this section for any monitoring system under paragraph (a)(1) of this section shall, for each such monitoring system, determine, record, and report maximum potential (or, as appropriate, minimum potential) values for Hg concentration, stack gas flow rate, stack gas moisture content, and any other parameters required to determine Hg mass emissions and heat input in accordance with §75.80(g) of this chapter.

(2) The owner or operator of a Hg Budget unit that does not meet the applicable compliance date set forth in paragraph (b)(3) of this section for any monitoring system under paragraph (a)(1) of this section shall, for each such monitoring system, determine, record, and report substitute data using the applicable missing data procedures in subpart D of part 75 of this chapter, in lieu of the maximum potential (or, as appropriate, minimum potential) values, for a parameter if the owner or operator demonstrates that there is continuity between the data streams for that parameter before and after the construction or installation under paragraph (b)(3) of this section.

(d) Prohibitions.

(1) No owner or operator of a Hg Budget unit shall use any alternative monitoring system, alternative reference method, or any other alternative to any requirement of this section and §§60.4171 through 60.4176 without having obtained prior written approval in accordance with §60.4175.

(2) No owner or operator of a Hg Budget unit shall operate the unit so as to discharge, or allow to be discharged, Hg emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this section, §§60.4171 through 60.4176, and subpart I of part 75 of this chapter.

(3) No owner or operator of a Hg Budget unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording Hg mass emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this section, §§60.4171 through 60.4176, and subpart I of part 75 of this chapter.

(4) No owner or operator of a Hg Budget unit shall retire or permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved monitoring system under this subpart, except under any one of the following circumstances:

(i) During the period that the unit is covered by an exemption under §60.4105 that is in effect;

(ii) The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of this section, §§60.4171 through 60.4176, and subpart I of part 75 of this chapter, by the permitting authority for use at that unit that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system; or

(iii) The Hg designated representative submits notification of the date of certification testing of a replacement monitoring system for the retired or discontinued monitoring system in accordance with §60.4171(c)(3)(i).

§60.4171 Initial Certification and Recertification Procedures.

(a) The owner or operator of a Hg Budget unit shall be exempt from the initial certification requirements of this section for a monitoring system under §60.4170(a)(1) if the following conditions are met:

(1) The monitoring system has been previously certified in accordance with part 75 of this chapter; and

(2) The applicable quality-assurance and quality-control requirements of §75.21 of this chapter and appendix B to part 75 of this chapter are fully met for the certified monitoring system described in paragraph (a)(1) of this section.

(b) The recertification provisions of this section shall apply to a monitoring system under §60.4170(a)(1) exempt from initial certification requirements under paragraph (a) of this section.

(c) Except as provided in paragraph (a) of this section, the owner or operator of a Hg Budget unit shall comply with the following initial certification and recertification procedures for a continuous monitoring system (e.g., a continuous emission monitoring system and an excepted monitoring system (sorbent trap monitoring system) under §75.15) under §60.4170(a)(1). The owner or operator of a unit that qualifies to use the Hg low mass emissions excepted monitoring methodology under §75.81(b) of this chapter or that qualifies to use an alternative monitoring system under subpart E of part 75 of this chapter shall comply with the procedures in paragraph (d) or (e) of this section respectively.

(1) Requirements for initial certification. The owner or operator shall ensure that each monitoring system under §60.4170(a)(1)(including the automated data acquisition and handling system) successfully completes all of the initial certification testing required under §75.20 of this chapter by the applicable deadline in §60.4170(b). In addition, whenever the owner or operator installs a monitoring system to meet the requirements of this subpart in a location where no such monitoring system was previously installed, initial certification in accordance with §75.20 of this chapter is required.

(2) Requirements for recertification. Whenever the owner or operator makes a replacement, modification, or

change in any certified continuous emission monitoring system, or an excepted monitoring system (sorbent trap monitoring system) under §75.15, under §60.4170(a)(1) that may significantly affect the ability of the system to accurately measure or record Hg mass emissions or heat input rate or to meet the quality-assurance and quality-control requirements of §75.21 of this chapter or appendix B to part 75 of this chapter, the owner or operator shall recertify the monitoring system in accordance with §75.20(b) of this chapter. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit's operation that may significantly change the stack flow or concentration profile, the owner or operator shall recertify each continuous emission monitoring system, and each excepted monitoring system (sorbent trap monitoring system) under §75.15, whose accuracy is potentially affected by the change, in accordance with §75.20(b) of this chapter. Examples of changes to a continuous emission monitoring system that require recertification include replacement of the analyzer, complete replacement of an existing continuous emission monitoring system, or change in location or orientation of the sampling probe or site.

(3) Approval process for initial certification and

recertification. Paragraphs (c)(3)(i) through (iv) of this section apply to both initial certification and recertification of a continuous monitoring system under §60.4170(a)(1). For recertifications, replace the words “certification” and “initial certification” with the word “recertification,” replace the word “certified” with the word “recertified,” and follow the procedures in §75.20(b)(5) of this chapter in lieu of the procedures in paragraph (c)(3)(v) of this section.

(i) Notification of certification. The Hg designated representative shall submit to the permitting authority, the appropriate EPA Regional Office, and the Administrator written notice of the dates of certification testing, in accordance with §60.4173.

(ii) Certification application. The Hg designated representative shall submit to the permitting authority a certification application for each monitoring system. A complete certification application shall include the information specified in §75.63 of this chapter.

(iii) Provisional certification date. The provisional certification date for a monitoring system shall be determined in accordance with §75.20(a)(3) of this chapter. A provisionally certified monitoring system may be used under the Hg Budget Trading Program for a period not to exceed 120 days after receipt by the permitting authority of the complete certification application for the monitoring system under paragraph (c)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the permitting authority does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of the date of receipt of the complete certification application by the permitting authority.

(iv) Certification application approval process. The permitting authority will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under paragraph (c)(3)(ii) of this section. In the event the permitting authority does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the Hg Budget Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of part 75 of this chapter, then the permitting authority will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. If the certification application is not complete, then the permitting authority will issue a written notice of incompleteness that sets a reasonable date by which the Hg designated representative must submit the additional information required to complete the certification application. If the Hg designated representative does not comply with the notice of incompleteness by the specified date, then the permitting authority may issue a notice of disapproval under paragraph (c)(3)(iv)(C) of this section. The 120-day review period shall not begin before receipt of a complete certification application.

(C) Disapproval notice. If the certification application shows that any monitoring system does not meet the performance requirements of part 75 of this chapter or if the certification application is incomplete and the requirement for disapproval under paragraph (c)(3)(iv)(B) of this section is met, then the permitting authority will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the permitting authority and the data measured and recorded by each uncertified monitoring system shall not be considered valid quality-assured data beginning with the date and hour of provisional certification (as defined under §75.20(a)(3) of this chapter). The owner or operator shall follow the procedures for loss of certification in paragraph (c)(3)(v) of this section for each monitoring system that is disapproved for initial certification.

(D) Audit decertification. The permitting authority may issue a notice of disapproval of the certification status of a monitor in accordance with §60.4172(b).

(v) Procedures for loss of certification. If the permitting authority issues a notice of disapproval of a certification application under paragraph (c)(3)(iv)(C) of this section or a notice of disapproval of certification status under paragraph (c)(3)(iv)(D) of this section, then:

(A) The owner or operator shall substitute the following values, for each disapproved monitoring system, for each hour of unit operation during the period of invalid data specified under §75.20(a)(4)(iii), §75.20(b)(5), or §75.21(e) of this chapter and continuing until the applicable date and hour specified under §75.20(a)(5)(i) of this chapter:

(*1*) For a disapproved Hg pollutant concentration monitors and disapproved flow monitor, respectively, the maximum potential concentration of Hg and the maximum potential flow rate, as defined in sections 2.1.7.1 and 2.1.4.1 of appendix A to part 75 of this chapter; and

(*2*) For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential CO_2 concentration or the minimum potential O_2 concentration (as applicable), as defined in sections 2.1.3.1, and 2.1.3.2, and 2.1.5 of appendix A to part 75 of this chapter.

(*3*) For a disapproved excepted monitoring system (sorbent trap monitoring system) under §75.15 and disapproved flow monitor, respectively, the maximum potential concentration of Hg and maximum potential flow rate, as defined in sections 2.1.7.1 and 2.1.4.1 of appendix A to part 75 of this chapter.

(B) The Hg designated representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (c)(3)(i) and (ii) of this section.

(C) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the permitting authority's notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(d) Initial certification and recertification procedures for units using the Hg low mass emission excepted methodology under §75.81(b) of this chapter. The owner or operator of a unit qualified to use the Hg low mass emissions (HgLME) excepted methodology under §75.81(b) of this chapter shall meet the applicable certification and recertification requirements in §75.81(c) through (f) of this chapter.

(e) Certification/recertification procedures for alternative monitoring systems. The Hg designated representative of each unit for which the owner or operator intends to use an alternative monitoring system approved by the Administrator and, if applicable, the permitting authority under subpart E of part 75 of this chapter shall comply with the applicable notification and application procedures of §75.20(f) of this chapter.

<u>§60.4172 Out of Control Periods</u>.

(a) Whenever any monitoring system fails to meet the quality-assurance and quality-control requirements or data validation requirements of part 75 of this chapter, data shall be substituted using the applicable missing data procedures in subpart D of part 75 of this chapter.

(b) Audit decertification. Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §60.4171 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the permitting authority will issue a notice of disapproval of the certification status of such monitoring system. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the permitting authority or the Administrator. By issuing the notice of disapproval, the permitting authority revokes prospectively the certification status of the monitoring system. The data measured and recorded by the monitoring system shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the monitoring system. The owner or operator shall follow the applicable initial certification or recertification procedures in §60.4171 for each disapproved monitoring system.

§60.4173 Notifications.

The Hg designated representative for a Hg Budget unit shall submit written notice to the permitting authority and the Administrator in accordance with §75.61 of this chapter, except that if the unit is not subject to an Acid Rain emissions limitation, the notification is only required to be sent to the permitting authority.

§60.4174 Recordkeeping and Reporting.

(a) General provisions.

(1) The Hg designated representative shall comply with all recordkeeping and reporting requirements in this section and the requirements of §60.4110(e)(1).

(2) If a Hg Budget unit is subject to an Acid Rain emission limitation or the CAIR NO_x Annual Trading Program, CAIR SO_2 Trading Program, or CAIR NO_x Ozone Season Trading Program, and the Hg designated representative who signed and certified any submission that is made under subpart F or G of part 75 of this chapter and that includes data and information required under this section, §§60.4170 through 60.4173, §60.4175, §60.4176, or subpart I of part 75 of this

chapter is not the same person as the designated representative or alternative designated representative, or the CAIR designated representative or alternate CAIR designated representative, for the unit under part 72 of this chapter and the CAIR NO_x Annual Trading Program, CAIR SO_2 Trading Program, or CAIR NO_x Ozone Season Trading Program, then the submission must also be signed by the designated representative or alternative designated representative, or the CAIR designated representative or alternate CAIR designated representative, as applicable.

(b) Monitoring Plans. The owner or operator of a Hg Budget unit shall comply with requirements of §75.84(e) of this chapter.

(c) Certification Applications. The Hg designated representative shall submit an application to the permitting authority within 45 days after completing all initial certification or recertification tests required under §60.4171, including the information required under §75.63 of this chapter.

(d) Quarterly reports. The Hg designated representative shall submit quarterly reports, as follows:

(1) The Hg designated representative shall report the Hg mass emissions data and heat input data for the Hg Budget unit, in an electronic quarterly report in a format

prescribed by the Administrator, for each calendar quarter beginning with:

(i) For a unit that commences commercial operation before July 1, 2008, the calendar quarter covering January 1, 2009 through March 31, 2009; or

(ii) For a unit that commences commercial operation on or after July 1, 2008, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §60.4170(b), unless that quarter is the third or fourth quarter of 2008, in which case reporting shall commence in the quarter covering January 1, 2009 through March 31, 2009.

(2) The Hg designated representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in §75.84(f) of this chapter.

(3) For Hg Budget units that are also subject to an Acid Rain emissions limitation or the CAIR NO_X Annual Trading Program, CAIR SO_2 Trading Program, or CAIR NO_X Ozone Season Trading Program, quarterly reports shall include the applicable data and information required by subparts F through H of part 75 of this chapter as applicable, in addition to the Hg mass emission data, heat input data, and

other information required by this section, §§60.4170 through 60.4173, §60.4175, and §60.4176.

(e) Compliance certification. The Hg designated representative shall submit to the Administrator a compliance certification (in a format prescribed by the Administrator) in support of each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit’s emissions are correctly and fully monitored. The certification shall state that:

(1) The monitoring data submitted were recorded in accordance with the applicable requirements of this section, §§60.4170 through 60.4173, §60.4175, §60.4176, and part 75 of this chapter, including the quality assurance procedures and specifications; and

(2) For a unit with add-on Hg emission controls, a flue gas desulfurization system, a selective catalytic reduction system, or a compact hybrid particulate collector system and for all hours where Hg data are substituted in accordance with §75.34(a)(1) of this chapter, the Hg add-on emission controls, flue gas desulfurization system, selective catalytic reduction system, or compact hybrid particulate collector system were operating within the range of parameters listed in the quality assurance/quality

control program under appendix B to part 75 of this chapter, or quality-assured SO_2 emission data recorded in accordance with part 75 of this chapter document that the flue gas desulfurization system, or quality-assured NO_X emission data recorded in accordance with part 75 of this chapter document that the selective catalytic reduction system, was operating properly, as applicable, and the substitute data values do not systematically underestimate Hg emissions.

<u>§60.4175 Petitions</u>.

The Hg designated representative of a Hg unit may submit a petition under §75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of §§60.4170 through 60.4174 and §60.4176. Application of an alternative to any requirement of §§60.4170 through 60.4174 and §60.4176 is in accordance with this section and §§60.4170 through 60.4174 and §60.4176 only to the extent that the petition is approved in writing by the Administrator, in consultation with the permitting authority.

<u>§60.4176 Additional Requirements to Provide Heat Input Data</u>.

The owner or operator of a Hg Budget unit that monitors and reports Hg mass emissions using a Hg concentration monitoring system and a flow monitoring system shall also monitor and report heat input rate at the unit level using the procedures set forth in part 75 of this chapter.

14. Appendix B to part 60 is amended by adding in numerical order new Performance Specification 12A to read as follows:

PERFORMANCE SPECIFICATION 12A - SPECIFICATIONS AND TEST PROCEDURES FOR TOTAL VAPOR PHASE MERCURY CONTINUOUS EMISSION MONITORING SYSTEMS IN STATIONARY SOURCES

1.0 Scope and Application.

1.1 Analyte.

Analyte	CAS No.
Mercury (Hg)	7439-97-6

1.2 Applicability.

1.2.1 This specification is for evaluating the acceptability of total vapor phase Hg continuous emission monitoring systems (CEMS) installed on the exit gases from fossil fuel fired boilers at the time of or soon after installation and whenever specified in the regulations. The Hg CEMS must be capable of measuring the total concentration in :g/m^3 (regardless of speciation) of vapor phase Hg, and recording that concentration on a wet or dry basis. Particle bound Hg is not included in the measurements.

This specification is not designed to evaluate an installed CEMS’s performance over an extended period of time nor does it identify specific calibration techniques and auxiliary procedures to assess the CEMS’s performance. The source owner or operator, however, is responsible to calibrate, maintain, and operate the CEMS properly. The Administrator may require, under Clean Air Act (CAA) section 114, the operator to conduct CEMS performance evaluations at other times besides the initial test to evaluate the CEMS performance. See §60.13(c).

1.2.2 For an affected facility that is also subject to the requirements of subpart I of part 75 of this chapter, the owner or operator may conduct the performance evaluation of the Hg CEMS according to §75.20(c)(1) of this chapter and section 6 of appendix A to part 75 of this chapter, in lieu of following the procedures in this performance specification.

2.0 Summary of Performance Specification.

Procedures for measuring CEMS relative accuracy, measurement error and drift are outlined. CEMS installation and measurement location specifications, and data reduction procedures are included. Conformance of the CEMS with the Performance Specification is determined.

3.0 Definitions.

3.1 Continuous Emission Monitoring System (CEMS) means the total equipment required for the determination of a pollutant concentration. The system consists of the following major subsystems:

3.2 Sample Interface means that portion of the CEMS used for one or more of the following: sample acquisition, sample transport, sample conditioning, and protection of the monitor from the effects of the stack effluent.

3.3 Hg Analyzer means that portion of the Hg CEMS that measures the total vapor phase Hg mass concentration and generates a proportional output.

3.4 Data Recorder means that portion of the CEMS that provides a permanent electronic record of the analyzer output. The data recorder may provide automatic data reduction and CEMS control capabilities.

3.5 Span Value means the upper limit of the intended Hg concentration measurement range. The span value is a value equal to two times the emission standard. Alternatively, for an affected facility that is also subject to the requirements of subpart I of part 75 of this chapter, the Hg span value(s) may be determined according to section 2.1.7 of appendix A to part 75 of this chapter.

3.6 Measurement Error (ME) means the absolute value of the difference between the concentration indicated by the Hg analyzer and the known concentration generated by a reference gas, expressed as a percentage of the span value, when the entire CEMS, including the sampling interface, is challenged. An ME test procedure is performed to document the accuracy and linearity of the Hg CEMS at several points over the measurement range.

3.7 Upscale Drift (UD) means the absolute value of the difference between the CEMS output response and an upscale Hg reference gas, expressed as a percentage of the span value, when the entire CEMS, including the sampling interface, is challenged after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

3.8 Zero Drift (ZD) means the absolute value of the difference between the CEMS output response and a zero-level Hg reference gas, expressed as a percentage of the span value, when the entire CEMS, including the sampling interface, is challenged after a stated period of operation during which no unscheduled maintenance, repair, or adjustment took place.

3.9 Relative Accuracy (RA) means the absolute mean difference between the pollutant concentration(s) determined by the CEMS and the value determined by the reference method (RM) plus the 2.5 percent error confidence coefficient of a series of tests divided by the mean of the RM tests.

Alternatively, for low concentration sources, the RA may be expressed as the absolute value of the difference between the mean CEMS and RM values.

4.0 Interferences. [Reserved]

5.0 Safety.

The procedures required under this performance specification may involve hazardous materials, operations, and equipment. This performance specification may not address all of the safety problems associated with these procedures. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicable regulatory limitations prior to performing these procedures. The CEMS user’s manual and materials recommended by the RM should be consulted for specific precautions to be taken.

6.0 Equipment and Supplies.

6.1 CEMS Equipment Specifications.

6.1.1 Data Recorder Scale. The Hg CEMS data recorder output range must include zero and a high level value. The high level value must be approximately two times the Hg concentration corresponding to the emission standard level for the stack gas under the circumstances existing as the stack gas is sampled. A lower high level value may be used, provided that the measured values do not exceed 95 percent of the high level value. Alternatively, for an affected facility that is also subject to the requirements of subpart I of part 75 of this chapter, the owner or operator may set the full-scale range(s) of the Hg analyzer according to section 2.1.7 of appendix A to part 75 of this chapter.

6.1.2 The CEMS design should also provide for the determination of calibration drift at a zero value (zero to 20 percent of the span value) and at an upscale value (between 50 and 100 percent of the high-level value).

6.2 Reference Gas Delivery System. The reference gas delivery system must be designed so that the flowrate of reference gas introduced to the CEMS is the same at all three challenge levels specified in Section 7.1 and at all times exceeds the flow requirements of the CEMS.

6.3 Other equipment and supplies, as needed by the applicable reference method used. See Section 8.6.2.

7.0 Reagents and Standards.

7.1 Reference Gases. Reference gas standards are required for both elemental and oxidized Hg (Hg^{B} and mercuric chloride, $HgCl_2$). The use of National Institute of Standards and Technology (NIST)-certified or NIST-traceable standards and reagents is required. The following gas concentrations are required.

7.1.1 Zero-level. 0 to 20 percent of the span value.

7.1.2 Mid-level. 50 to 60 percent of the span value.

7.1.3 High-level. 80 to 100 percent of the span value.

7.2 Reference gas standards may also be required for the reference methods. See Section 8.6.2.

8.0 Performance Specification (PS) Test Procedure.

8.1 Installation and Measurement Location Specifications.

8.1.1 CEMS Installation. Install the CEMS at an accessible location downstream of all pollution control equipment. Since the Hg CEMS sample system normally extracts gas from a single point in the stack, use a location that has been shown to be free of stratification for SO_2 and NO_x through concentration measurement traverses for those gases. If the cause of failure to meet the RA test requirement is determined to be the measurement location and a satisfactory correction technique cannot be established, the Administrator may require the CEMS to be relocated.

Measurement locations and points or paths that are most likely to provide data that will meet the RA requirements are listed below.

8.1.2 Measurement Location. The measurement location should be (1) at least two equivalent diameters downstream of the nearest control device, point of pollutant generation or other point at which a change of pollutant concentration may occur, and (2) at least half an equivalent diameter upstream from the effluent exhaust. The equivalent duct diameter is calculated as per 40 CFR part 60, appendix A, Method 1.

8.1.3 Hg CEMS Sample Extraction Point. Use a sample extraction point (1) no less than 1.0 meter from the stack or duct wall, or (2) within the centroidal velocity traverse area of the stack or duct cross section.

8.2 RM Measurement Location and Traverse Points. Refer to PS 2 of this appendix. The RM and CEMS locations need not be immediately adjacent.

8.3 ME Test Procedure. The Hg CEMS must be constructed to permit the introduction of known concentrations of Hg^B and $HgCl_2$ separately into the sampling system of the CEMS immediately preceding the sample extraction filtration system such that the entire CEMS can be challenged. Sequentially inject each of the three reference gases (zero, mid-level, and high level) for each Hg species. Record the CEMS response and subtract the reference value from the CEMS value, and express the absolute value of the difference as a percentage of the span value (see example data sheet in Figure 12A-1). For each reference gas, the absolute value of the difference between the CEMS response and the reference value shall not exceed 5 percent of the span value. If this specification is not met, identify and correct the problem before proceeding.

8.4 UD Test Procedure.

8.4.1 UD Test Period. While the affected facility is operating at more than 50 percent of normal load, or as specified in an applicable subpart, determine the magnitude of the UD once each day (at 24-hour intervals, to the extent practicable) for 7 consecutive unit operating days according to the procedure given in Sections 8.4.2 through 8.4.3. The 7 consecutive unit operating days need not be 7 consecutive calendar days. Use either Hg^B or $HgCl_2$ standards for this test.

8.4.2 The purpose of the UD measurement is to verify the ability of the CEMS to conform to the established CEMS response used for determining emission concentrations or emission rates. Therefore, if periodic automatic or manual adjustments are made to the CEMS zero and response settings, conduct the UD test immediately before these adjustments, or conduct it in such a way that the UD can be determined.

8.4.3 Conduct the UD test at either the mid-level or high-level point specified in Section 7.1. Introduce the reference gas to the CEMS. Record the CEMS response and subtract the reference value from the CEMS value, and express the absolute value of the difference as a percentage of the span value (see example data sheet in Figure 12A-1). For the reference gas, the absolute value of the difference between the CEMS response and the reference value shall not exceed 5 percent of the span value. If this specification is not met, identify and correct the problem before proceeding.

8.5 ZD Test Procedure.

8.5.1 ZD Test Period. While the affected facility is operating at more than 50 percent of normal load, or as specified in an applicable subpart, determine the magnitude of the ZD once each day (at 24-hour intervals, to the extent practicable) for 7 consecutive unit operating days according to the procedure given in Sections 8.5.2 through 8.5.3. The 7 consecutive unit operating days need not be 7 consecutive calendar days. Use either nitrogen, air, Hg^B, or $HgCl_2$ standards for this test.

8.5.2 The purpose of the ZD measurement is to verify the ability of the CEMS to conform to the established CEMS response used for determining emission concentrations or emission rates. Therefore, if periodic automatic or manual adjustments are made to the CEMS zero and response settings, conduct the ZD test immediately before these adjustments, or conduct it in such a way that the ZD can be determined.

8.5.3 Conduct the ZD test at the zero level specified in Section 7.1. Introduce the zero gas to the CEMS. Record the CEMS response and subtract the zero value from the CEMS value and express the absolute value of the difference as a percentage of the span value (see example data sheet in Figure 12A-1). For the zero gas, the absolute value of the difference between the CEMS response and the reference value shall not exceed 5 percent of the span value. If this specification is not met, identify and correct the problem before proceeding.

8.6 RA Test Procedure.

8.6.1 RA Test Period. Conduct the RA test according to the procedure given in Sections 8.6.2 through 8.6.6 while the affected facility is operating at normal full load, or as specified in an applicable subpart. The RA test may be conducted during the ZD and UD test period.

8.6.2 RM. Unless otherwise specified in an applicable subpart of the regulations, use either Method 29 in appendix A to this part, or American Society of Testing and Materials (ASTM) Method D 6784-02 (incorporated by reference in §60.17) as the RM for Hg concentration. Alternatively, an instrumental RM may be used, subject to the approval of the Administrator. Do not include the filterable portion of the sample when making comparisons to the CEMS results. When Method 29 or ASTM D6784-02 is used, conduct the RM test runs with paired or duplicate sampling systems. When an approved instrumental method is used, paired sampling systems are not required. If the RM and CEMS measure on a different moisture basis, data derived with Method 4 in appendix A to this part shall also be obtained during the RA test.

8.6.3 Sampling Strategy for RM Tests. Conduct the RM tests in such a way that they will yield results representative of the emissions from the source and can be compared to the CEMS data. It is preferable to conduct moisture measurements (if needed) and Hg measurements simultaneously, although moisture measurements that are taken within an hour of the Hg measurements may be used to adjust the Hg concentrations to a consistent moisture basis. In order to correlate the CEMS and RM data properly, note the beginning and end of each RM test period for each paired RM run (including the exact time of day) on the CEMS chart recordings or other permanent record of output.

8.6.4 Number and length of RM Tests. Conduct a minimum of nine RM test runs. When Method 29 or ASTM D6784-02 is used, only test runs for which the data from the paired RM trains meet the relative deviation (RD) criteria of this PS shall be used in the RA calculations. In addition, for Method 29 and ASTM D 6784-02, use a minimum sample run time of 2 hours.

NOTE: More than nine sets of RM tests may be performed. If this option is chosen, paired RM test results may be excluded so long as the total number of paired RM test results used to determine the CEMS RA is greater than or equal to nine. However, all data must be reported, including the excluded data.

8.6.5 Correlation of RM and CEMS Data. Correlate the CEMS and the RM test data as to the time and duration by first determining from the CEMS final output (the one used for reporting) the integrated average pollutant concentration for each RM test period. Consider system response time, if important, and confirm that the results are on a consistent moisture basis with the RM test. Then, compare each integrated CEMS value against the corresponding RM value. When Method 29 or ASTM D6784-02 is used, compare each CEMS value against the corresponding average of the paired RM values.

8.6.6 Paired RM Outliers.

8.6.6.1 When Method 29 or ASTM D6784-02 is used, outliers are identified through the determination of relative deviation (RD) of the paired RM tests. Data that do not meet this criteria should be flagged as a data quality problem. The primary reason for performing paired RM sampling is to ensure the quality of the RM data. The percent RD of paired data is the parameter used to quantify data quality. Determine RD for two paired data points as follows:

$$RD = 100 \times *(C_a - C_b)*/(C_a + C_b) \qquad \text{(Eq. 12A-1)}$$

where C_a and C_b are concentration values determined from each of the two samples respectively.

8.6.6.2 A minimum performance criteria for RM Hg data is that RD for any data pair must be #10 percent as long as the mean Hg concentration is greater than 1.0 µg/m^3. If the mean Hg concentration is less than or equal to 1.0 µg/m^3, the RD must be #20 percent. Pairs of RM data exceeding these RD criteria should be eliminated from the data set used to develop a Hg CAMS correlation or to assess CAMS RA.

8.6.7 Calculate the mean difference between the RM and CAMS values in the units of micrograms per cubic meter (:g/m^3), the standard deviation, the confidence coefficient, and the RA according to the procedures in Section 12.0.

8.7 Reporting. At a minimum (check with the appropriate EPA Regional Office, State or local Agency for additional requirements, if any), summarize in tabular form the results of the RD tests and the RA tests or alternative RA procedure, as appropriate. Include all data sheets, calculations, charts (records of CAMS responses), reference gas concentration certifications, and any other information necessary to confirm that the performance of the CAMS meets the performance criteria.

9.0 Quality Control. [Reserved]

10.0 Calibration and Standardization. [Reserved]

11.0 Analytical Procedure.

Sample collection and analysis are concurrent for this PS (see Section 8.0). Refer to the RM employed for specific analytical procedures.

12.0 Calculations and Data Analysis.

Summarize the results on a data sheet similar to that shown in Figure 2-2 for PS 2.

12.1 Consistent Basis. All data from the RM and CAMS must be compared in units of :g/m^3, on a consistent and identified moisture and volumetric basis (STP = 20°C, 760 millimeters (mm) Hg).

12.1.1 Moisture Correction (as applicable). If the RM and CAMS measure Hg on a different moisture basis, use Equation 12A-2 to make the appropriate corrections to the Hg concentrations.

$$\text{Concentration}_{(dry)} = \frac{\text{Concentration}_{(wet)}}{(1-B_{ws})} \qquad \textbf{(Eq. 12A-2)}$$

In Equation 12-A-2, B_{ws} is the moisture content of the flue gas from Method 4, expressed as a decimal fraction (e.g., for 8.0 percent H_2O, $B_{ws} = 0.08$).

12.2 Arithmetic Mean. Calculate the arithmetic mean of the difference, d, of a data set as follows:

$$\bar{d} = \frac{1}{n}\sum_{i=1}^{n} d_i \qquad \textbf{(Eq. 12A-3)}$$

Where:

n = Number of data points.

12.3 Standard Deviation. Calculate the standard deviation, S_d, as follows:

$$S_d = \left[\frac{\sum_{i=1}^{n} d_i^2 - \frac{\left[\sum_{i=1}^{n} d_i\right]^2}{n}}{n-1}\right]^{\frac{1}{2}} \qquad \textbf{(Eq. 12A-4)}$$

Where:

$\sum_{i=1}^{n} d_i$ = Algebraic summation of the individual differences d_i.

12.4 Confidence Coefficient (CC). Calculate the 2.5 percent error confidence coefficient (one-tailed), CC, as follows:

$$CC = t_{0.975}\frac{S_d}{\sqrt{n}} \qquad \textbf{(Eq. 12A-5)}$$

12.5 RA. Calculate the RA of a set of data as follows:

$$RA = \frac{\left[\left|\bar{d}\right| + \left|CC\right|\right]}{\overline{RM}} \times 100 \qquad \textbf{(Eq. 12A-6)}$$

Where:

$|\bar{d}|$ = Absolute value of the mean differences (from Equation 12A-3).
$|CC|$ = Absolute value of the confidence coefficient (from Equation 12A-5).
$\overline{RM}$ = Average RM value.

13.0 <u>Method Performance</u>.

13.1 ME. ME is assessed at zero-level, mid-level and high-level values as given below using standards for both Hg^0 and $HgCl_2$. The mean difference between the indicated CAMS concentration and the reference concentration value for each standard shall be no greater than 5 percent of the span value.

13.2 UD. The UD shall not exceed 5 percent of the span value on any of the 7 days of the UD test.

13.3 ZD. The ZD shall not exceed 5 percent of the span value on any of the 7 days of the ZD test.

13.4 RA. The RA of the CAMS must be no greater than 20 percent of the mean value of the RM test data in terms of units of μg/m^3. Alternatively, if the mean RM is less than

5.0 :g/m^3, the results are acceptable if the absolute value of the difference between the mean RM and CAMS values does not exceed 1.0 :g/m^3.

14.0 Pollution Prevention. [Reserved]

15.0 Waste Management. [Reserved]

16.0 Alternative Procedures. [Reserved]

17.0 Bibliography.

17.1 40 CFR part 60, appendix B, "Performance Specification 2 - Specifications and Test Procedures for SO_2 and NO_X Continuous Emission Monitoring Systems in Stationary Sources."

17.2 40 CFR part 60, appendix A, "Method 29 - Determination of Metals Emissions from Stationary Sources."

17.3 ASTM Method D6784-02, "Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method)."

18.0 Tables and Figures.

TABLE 12A-1. t-VALUES.

n^a	$t_{0.975}$	n^a	$t_{0.975}$	n^a	$t_{0.975}$
2	12.706	7	2.447	12	2.201
3	4.303	8	2.365	13	2.179
4	3.182	9	2.306	14	2.160
5	2.776	10	2.262	15	2.145
6	2.571	11	2.228	16	2.131

[a] The values in this table are already corrected for n-1 degrees of freedom. Use n equal to the number of individual values.

	Date	Time	Reference Gas Value :g/m^3	CAMS Measured Value :g/m^3	Absolute Difference	Drift or Measurement Error (% of span value)
Zero Level						
Mid-level						
High-level						

Figure 12A-1. ME, ZD and UD Determination.

* * * * *

PART 72 — PERMITS REGULATION

15. The authority citation for part 72 continues to read as follows:

Authority: 42 U.S.C. 7601 and 7651, et. seq.

16. Section 72.2 is amended in the definition of “Continuous emission monitoring system or CAMS” by revising the introductory text and adding paragraph (7); and by adding, in alphabetical order, a new definition for “sorbent trap monitoring system,” to read as follows:

§72.2 Definitions

* * * * *

Continuous emission monitoring system *or* CAMS means the equipment required by part 75 of this chapter used to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of SO_2, NO_x, Hg, or CO_2 emissions or stack gas volumetric flow rate. The following are the principal types of continuous emission monitoring systems required under part 75 of this chapter. Sections 75.10 through 75.18, §75.71(a) and 75.81 of this chapter indicate which type(s) of CAMS is required for specific applications:

* * * * *

(7) A Hg concentration monitoring system, consisting of a Hg pollutant concentration monitor and an automated

DAHS. A Hg concentration monitoring system provides a permanent, continuous record of Hg emissions in units of micrograms per standard cubic meter (:g/scm).

* * * * *

<u>Sorbent trap monitoring system</u> means the equipment required by part 75 of this chapter for the continuous monitoring of Hg emissions, using paired sorbent traps containing iodinized charcoal (IC) or other suitable reagent(s). This excepted monitoring system consists of a probe, the paired sorbent traps, a heated umbilical line, moisture removal components, an air-tight sample pump, a dry gas meter, and an automated data acquisition and handling system. The monitoring system samples the stack gas at a rate proportional to the stack gas volumetric flow rate. The sampling is a batch process. Using the sample volume measured by the dry gas meter and the results of the analyses of the sorbent traps, the average Hg concentration in the stack gas for the sampling period is determined, in units of micrograms per dry standard cubic meter (:g/dscm). Mercury mass emissions for each hour in the sampling period are calculated using the average Hg concentration for that period, in conjunction with contemporaneous hourly measurements of the stack gas flow rate, corrected for the stack gas moisture content.

*   *   *   *   *

PART 75 — CONTINUOUS EMISSION MONITORING

17. The authority citation for Part 75 continues to read as follows:

Authority: 42 U.S.C. 7601, 7651k, and 7651k note.

18. Section 75.2 is amended by adding paragraph (d), to read as follows:

§75.2 Applicability.

*   *   *   *   *

(d) The provisions of this part apply to sources subject to a State or Federal mercury (Hg) mass emission reduction program, to the extent that these provisions are adopted as requirements under such a program.

*   *   *   *   *

19. Section 75.10 is amended by revising the second sentence of paragraph (d)(1) and revising the first sentence of paragraph (d)(3) to read as follows:

§75.10 General operating requirements.

*   *   *   *   *

(d) * * * * *

(1) * * * * * The owner or operator shall reduce all SO_2 concentrations, volumetric flow, SO_2 mass emissions, CO_2 concentration, O_2 concentration, CO_2 mass emissions (if applicable), NO_x concentration, NO_x emission rate, and Hg

concentration data collected by the monitors to hourly averages.

*   *   *   *   *

(3) Failure of an SO_2, CO_2, or O_2 emissions concentration monitor, NO_x concentration monitor, Hg concentration monitor, flow monitor, moisture monitor, or NO_x-diluent continuous emission monitoring system to acquire the minimum number of data points for calculation of an hourly average in paragraph (d)(1) of this section shall result in the failure to obtain a valid hour of data and the loss of such component data for the entire hour. *   *   *   *   *

*   *   *   *   *

20. Section 75.15 is added to read as follows:

<u>§75.15 Special provisions for measuring Hg mass emissions using the excepted sorbent trap monitoring methodology</u>.

For an affected coal-fired unit under a State or Federal Hg mass emission reduction program that adopts the provisions of subpart I of this part, if the owner or operator elects to use sorbent trap monitoring systems (as defined in §72.2 of this chapter) to quantify Hg mass emissions, the guidelines in paragraphs (a) through (j) of this section shall be followed for this excepted monitoring methodology:

(a) For each sorbent trap monitoring system (whether primary or redundant backup), the use of paired sorbent traps, as described in appendix K to this part, is required;

(b) Each sorbent trap shall have both a main section, a backup section, and a third section to allow spiking with a calibration gas of known Hg concentration, as described in appendix K to this part;

(c) A certified flow monitoring system is required;

(d) Correction for stack gas moisture content is required, and in some cases, a certified O_2 or CO_2 monitoring system is required (see §75.81(a)(4));

(e) Each sorbent trap monitoring system shall be installed and operated in accordance with appendix K to this part. The automated data acquisition and handling system shall ensure that the sampling rate is proportional to the stack gas volumetric flow rate.

(f) At the beginning and end of each sample collection period, and at least once in each unit operating hour during the collection period, the dry gas meter reading shall be recorded.

(g) After each sample collection period, the mass of Hg adsorbed in each sorbent trap (in all three sections) shall be determined according to the applicable procedures in appendix K to this part.

(h) The hourly Hg mass emissions for each collection period are determined using the results of the analyses in conjunction with contemporaneous hourly data recorded by a certified stack flow monitor, corrected for the stack gas moisture content. For each pair of sorbent traps analyzed, the average of the two Hg concentrations shall be used for reporting purposes under §75.84(f). Notwithstanding this requirement, if, due to circumstances beyond the control of the owner or operator, one of the paired traps is accidentally lost, damaged, or broken and cannot be analyzed, the results of the analysis of the other trap, if valid, may be used for reporting purposes.

(i) All unit operating hours for which valid Hg concentration data are obtained with the primary sorbent trap monitoring system (as verified using the quality assurance procedures in appendix K to this part) shall be reported in the electronic quarterly report under §75.84(f). For hours in which data from the primary monitoring system are invalid, the owner or operator may report valid Hg concentration data from a certified redundant backup CAMS or sorbent trap monitoring system or from an applicable reference method under §75.22. If no quality-assured Hg concentration are available for a particular hour, the owner or operator shall report the appropriate substitute data value in accordance with §75.39.

(j) Initial certification requirements and additional quality-assurance requirements for the sorbent trap monitoring systems are found in §75.20(c)(9), in section 6.5.7 of appendix A to this part, in sections 1.5 and 2.3 of appendix B to this part, and in appendix K to this part.

21. Section 75.20 is amended by:

a. Revising paragraph (a)(5)(i);

b. Revising the first sentence of paragraph (b) introductory text;

c. Revising paragraph (c)(1);

d. Redesignating existing paragraphs (c)(9) and (c)(10) as paragraphs (c)(10) and (c)(11), respectively;

e. Adding a new paragraph (c)(9); and

f. Revising paragraph (d)(2)(v).

The revisions and additions read as follows:

<u>§75.20 Initial certification and recertification procedures</u>.

(a) * * * * *

(5) * * * * *

(i) Until such time, date, and hour as the continuous emission monitoring system can be adjusted, repaired, or replaced and certification tests successfully completed (or, if the conditional data validation procedures in paragraphs (b)(3)(ii) through (b)(3)(ix) of this section are used, until a probationary calibration error test is passed following corrective actions in accordance with paragraph (b)(3)(ii) of this section), the owner or operator shall substitute the following values, as applicable, for each hour of unit operation during the period of invalid data specified in paragraph (a)(4)(iii) of this section or in §75.21: the maximum potential concentration of SO_2, as defined in section 2.1.1.1 of appendix A to this part, to report SO_2 concentration; the maximum potential NO_x emission rate, as defined in §72.2 of this chapter, to report NO_x emissions in lb/MMBtu; the maximum potential concentration of NO_x, as defined in section 2.1.2.1 of appendix A to this part, to report NO_x emissions in ppm (when a NO_x concentration monitoring system is used to determine NO_x mass emissions, as defined under §75.71(a)(2)); the maximum potential concentration of Hg, as defined in section 2.1.7 of appendix A to this part, to report Hg emissions in :g/scm (when a Hg concentration monitoring system or a sorbent trap monitoring system is used to determine Hg mass emissions, as defined under §75.81(b)); the maximum potential flow rate, as defined in section 2.1.4.1 of appendix A to this part, to report volumetric flow; the maximum potential concentration of CO_2, as defined in section 2.1.3.1 of appendix A to this part, to report CO_2 concentration data; and either the minimum potential moisture percentage, as defined in section 2.1.5 of appendix A to this part or, if Equation 19-3, 19-4 or 19-8 in Method 19 in appendix A to part 60 of this chapter is used to determine NO_x emission rate, the maximum potential moisture percentage, as defined in section 2.1.6 of appendix A to this part; and

* * * * *

(b) Recertification approval process. Whenever the owner or operator makes a replacement, modification, or change in a certified continuous emission monitoring system or continuous opacity monitoring system that may significantly affect the ability of the system to accurately measure or record the SO_2 or CO_2 concentration, stack gas volumetric flow rate, NO_x emission rate, NO_x concentration, Hg concentration, percent moisture, or opacity, or to meet the requirements of §75.21 or appendix B to this part, the owner or operator shall recertify the continuous emission monitoring system or continuous opacity monitoring system, according to the procedures in this paragraph. * * * * *

* * * * *

(c) * * * * *

(1) For each SO_2 pollutant concentration monitor, each

NO_x concentration monitoring system used to determine NO_x mass emissions, as defined under §75.71(a)(2), each Hg concentration monitoring system, and each NO_x-diluent continuous emission monitoring system:

(i) A 7-day calibration error test, where, for the NO_x-diluent continuous emission monitoring system, the test is performed separately on the NO_x pollutant concentration monitor and the diluent gas monitor;

(ii) A linearity check, where, for the NO_x-diluent continuous emission monitoring system, the test is performed separately on the NO_x pollutant concentration monitor and the diluent gas monitor. For Hg monitors, perform this check with elemental Hg standards;

(iii) A relative accuracy test audit. For the NO_x-diluent continuous emission monitoring system, the RATA shall be done on a system basis, in units of lb/MMBtu. For the NO_x concentration monitoring system, the RATA shall be done on a ppm basis. For the Hg concentration monitoring system, the RATA shall be done on a :g/scm basis;

(iv) A bias test;

(v) A cycle time test; and

(vi) For Hg monitors only, a 3-level system integrity check, using a NIST-traceable source of oxidized Hg, as described in section 6.2 of appendix A to this part. This test is not required for an Hg monitor that does not have a converter.

* * * * *

(9) For each sorbent trap monitoring system, perform a RATA, on a :g/dscm basis, and a bias test.

* * * * *

(d) * * * * *

(2) * * * * *

(v) For each parameter monitored (i.e., SO_2, CO_2, O_2, NO_x, Hg or flow rate) at each unit or stack, a regular non-redundant backup CAMS may not be used to report data at that affected unit or common stack for more than 720 hours in any one calendar year (or 720 hours in any ozone season, for sources that report emission data only during the ozone season, in accordance with §75.74(c)), unless the CAMS passes a RATA at that unit or stack. For each parameter monitored at each unit or stack, the use of a like-kind replacement non-redundant backup analyzer (or analyzers) is restricted to 720 cumulative hours per calendar year (or ozone season, as applicable), unless the owner or operator redesignates the like-kind replacement analyzer(s) as component(s) of regular non-redundant backup CAMS and each redesignated CAMS passes a RATA at that unit or stack.

* * * * *

22. Section 75.21 is amended by revising paragraph (a)(3) to read as follows:

<u>§75.21 Quality assurance and quality control requirements</u>.

(a) * * * * *

(3) The owner or operator shall perform quality assurance upon a reference method backup monitoring system according to the requirements of method 2, 6C, 7E, or 3A in appendix A of part 60 of this chapter (supplemented, as necessary, by guidance from the Administrator), or one of the Hg reference methods in §75.22, as applicable, instead of the procedures specified in appendix B of this part.

* * * * *

23. Section 75.22 is amended by adding new paragraphs (a)(7) and (b)(5), to read as follows:

<u>§75.22 Reference methods</u>.

(a) * * * * *

(7) ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound, and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (also known as the Ontario-Hydro Method) is the reference method for determining Hg concentration. When this method is used, paired sampling trains are required, and to validate a RATA run, the relative deviation (RD), calculated according to section 11.7 of appendix K to this part, must not exceed 10

percent. If the RD criterion is met, use the average Hg concentration measured by the two trains (vapor phase Hg, only) in the relative accuracy calculations. Alternatively, an instrumental reference method capable of measuring total vapor phase Hg may be used, subject to the approval of the Administrator.

(b) * * * * *

(5) ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound, and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (also known as the Ontario-Hydro Method) for determining Hg concentration. Alternatively, an instrumental reference method capable of measuring total vapor phase Hg may be used, subject to the approval of the Administrator.

* * * * *

24. Section 75.24 is amended by revising paragraph (d), to read as follows:

§75.24 Out-of-control periods and adjustment for system bias.

* * * * *

(d) When the bias test indicates that an SO_2 monitor, a flow monitor, a NO_x-diluent continuous emission monitoring system, a NO_x concentration monitoring system used to determine NO_x mass emissions, as defined in §75.71(a)(2), a

Hg concentration monitoring system or a sorbent trap monitoring system is biased low (i.e., the arithmetic mean of the differences between the reference method value and the monitor or monitoring system measurements in a relative accuracy test audit exceed the bias statistic in section 7 of appendix A to this part), the owner or operator shall adjust the monitor or continuous emission monitoring system to eliminate the cause of bias such that it passes the bias test or calculate and use the bias adjustment factor as specified in section 2.3.4 of appendix B to this part.

* * * * *

25. Section 75.31 is amended by:

a. Revising the first sentence of paragraph (a);

b. Revising paragraph (b) introductory text; and

c. Revising paragraphs (b)(1) and (b)(2).

The revisions read as follows:

§75.31 Initial missing data procedures.

(a) During the first 720 quality-assured monitor operating hours following initial certification of the required SO_2, CO_2, O_2, Hg concentration, or moisture monitoring system(s) at a particular unit or stack location

* * * * *

(b) SO_2, CO_2, or O_2 concentration data, Hg concentration data, and moisture data. For each hour of missing SO_2, Hg, or CO_2 emissions concentration data (including CO_2 data converted from O_2 data using the procedures in appendix F of this part), or missing O_2 or CO_2 diluent concentration data used to calculate heat input, or missing moisture data, the owner or operator shall calculate the substitute data as follows:

(1) Whenever prior quality-assured data exist, the owner or operator shall substitute, by means of the data acquisition and handling system, for each hour of missing data, the average of the hourly SO_2, CO_2, Hg, or O_2 concentrations, or moisture percentages recorded by a certified monitor for the unit operating hour immediately before and the unit operating hour immediately after the missing data period.

(2) Whenever no prior quality assured SO_2, CO_2, Hg, or O_2 concentration data, or moisture data exist, the owner or operator shall substitute, as applicable, for each hour of missing data, the maximum potential SO_2 concentration or the maximum potential CO_2 concentration or the minimum potential O_2 concentration or (unless Equation 19-3, 19-4 or 19-8 in Method 19 in appendix A to part 60 of this chapter is used to determine NO_x emission rate) the minimum potential moisture percentage, or the maximum potential Hg concentration, as specified, respectively, in sections

2.1.1.1, 2.1.3.1, 2.1.3.2, 2.1.5, and 2.1.7 of appendix A to this part. If Equation 19-3, 19-4 or 19-8 in Method 19 in appendix A to part 60 of this chapter is used to determine NO_x emission rate, substitute the maximum potential moisture percentage, as specified in section 2.1.6 of appendix A to this part.

* * * * *

26. Section 75.32 is amended by revising the first sentence of paragraph (a) introductory text to read as follows:

§75.32 Determination of monitor data availability for standard missing data procedures.

(a) Following initial certification of the required SO_2, CO_2, O_2, or Hg concentration, or moisture monitoring system(s) at a particular unit or stack location * * * *
*

* * * * *

27. Table 1 in §75.33 is revised as follows:

§75.33 Standard missing data procedures for SO_2, NO_x, and flow rate.

* * * * *

Table 1. Missing Data Procedure for SO_2 CAMS, CO_2 CAMS, Moisture CAMS, Hg CAMS, and Diluent (CO_2 or O_2) Monitors for Heat Input Determination

Trigger conditions		Calculation routines	
Monitor data availability (percent)	Duration (N) of CAMS outage (hours)[2]	Method	Lookback period
95 or more . . (90 or more for Hg)	N # 24	Average	HB/HA
	N > 24	For SO_2, CO_2, Hg, and H_2O^{**}, the greater of:	
		Average	HB/HA
		90th percentile	720 hours[*]
		For O_2 and H_2O^{x}, the lesser of:	
		Average	HB/HA
		10th percentile	720 hours[*]
90 or more, but below 95 . . . (≥ 80 but < 90 for Hg)	N # 8	Average	HB/HA
	N > 8	For SO_2, CO_2, Hg, and H_2O^{**}, the greater of:	
		Average	HB/HA
		95th percentile	720 hours[*]
		For O_2 and H_2O^{x}, the lesser of:	
		Average	HB/HA
		5th percentile	720 hours[*]
80 or more, but below 90........... (≥70 but < 80 for Hg)	N > 0	For SO_2, CO_2, Hg, and H_2O^{**},	
		Maximum value[1]	720 hours[*]
		For O_2 and H_2O^{x}:	
		Minimum value[1]	720 hours[*]

Trigger conditions		Calculation routines	
Monitor data availability (percent)	Duration (N) of CAMS outage (hours)[2]	Method	Lookback period
Below 80............ (Below 70 for Hg)	N > 0	Maximum potential concentration or % (for SO_2, CO_2, Hg, and H_2O^{**}) *or* Minimum potential concentration or % (for O_2 and H_2O^{x})	None

HB/HA = hour before and hour after the CAMS outage.

[*] Quality-assured, monitor operating hours, during unit operation. May be either fuel-specific or non-fuel-specific. For units that report data only for the ozone season, include only quality assured monitor operating hours within the ozone season in the lookback period. Use data from no earlier than 3 years prior to the missing data period.

[1] Where a unit with add-on SO_2 or Hg emission controls can demonstrate that the controls are operating properly, as provided in §75.34, the unit may, upon approval, use the maximum controlled emission rate from the previous 720 operating hours.

[2] During unit operating hours.

[x] Use this algorithm for moisture except when Equation 19-3, 19-4 or 19-8 in Method 19 in appendix A to part 60 of this chapter is used for NO_x emission rate.

[**] Use this algorithm for moisture *only* when Equation 19-3, 19-4 or 19-8 in Method 19 in appendix A to part 60 of this chapter is used for NO_x emission rate.

* * * * *

28. Subpart D is further amended by adding two new sections, §75.38 and §75.39, to read as follows:

§75.38 Standard missing data procedures for Hg CAMS.

(a) Once 720 quality assured monitor operating hours of Hg concentration data have been obtained following initial certification, the owner or operator shall provide substitute data for Hg concentration in accordance with the procedures in §§75.33(b)(1) through (b)(4), except that the term “Hg concentration” shall apply rather than “SO_2 concentration,” the term “Hg concentration monitoring system” shall apply rather than “SO_2 pollutant concentration monitor,” and the term “maximum potential Hg concentration, as defined in section 2.1.7 of appendix A to this part” shall apply, rather than “maximum potential SO_2 concentration.”

(b) For a unit equipped with a flue gas desulfurization (FGD) system that significantly reduces the concentration of Hg emitted to the atmosphere (including circulating fluidized bed units that use limestone injection), or for a unit equipped with add-on Hg emission controls (e.g. , carbon injection), the standard missing data procedures in paragraph (a) of this section may only be used for hours in which the SO_2 or Hg emission controls are documented to be operating properly, as described in §75.58(b)(3). For any hour(s) in the missing data period for which this documentation is unavailable, the owner or operator shall report, as applicable, the maximum potential Hg concentration, as defined in section 2.1.7 of appendix A to this part. In addition, under §75.64(c), the designated representative shall submit as part of each electronic quarterly report, a certification statement, verifying the proper operation of the SO_2 or Hg emission controls for each missing data period in which the procedures in paragraph (a) of this section are applied.

(c) For units with FGD systems or add-on Hg controls, when the percent monitor data availability is less than 80.0 percent, and a missing data period occurs, the owner or operator may petition to report the maximum controlled Hg concentration in the previous 720 quality-assured monitor operating hours, consistent with §75.34(a)(3).

§75.39 Missing data procedures for sorbent trap monitoring systems.

(a) If a sorbent trap monitoring system has not been certified by the applicable compliance date specified under a State or Federal Hg mass emission reduction program that adopts the requirements of subpart I of this part, the owner or operator shall report the maximum potential Hg concentration, as defined in section 2.1.7 of appendix A to this part, until the system is certified.

(b) For a certified sorbent trap system, a missing data period will occur whenever:

(1) A gas sample is not extracted from the stack (e.g. during a monitoring system malfunction or when the system

undergoes maintenance); or

(2) The results of the Hg analysis for the paired sorbent traps are missing or invalid (as determined using the quality assurance procedures in appendix K to this part). The missing data period begins with the hour in which the paired sorbent traps for which the Hg analysis is missing or invalid were put into service. The missing data period ends at the first hour in which valid Hg concentration data are obtained with another pair of sorbent traps (i.e., the hour at which this pair of traps was placed in service).

(c) Initial missing data procedures. Use these missing data procedures until 720 hours of quality-assured data have been collected with the sorbent trap monitoring system(s), following initial certification. For each hour of the missing data period, the substitute data value for Hg concentration shall be the average Hg concentration from all valid sorbent trap analyses to date, including data from the initial certification test runs.

(d) Standard missing data procedures. Once 720 quality-assured hours of data have been obtained with the sorbent trap system(s), begin reporting the percent monitor data availability in accordance with §75.32 and switch from the initial missing data procedures in paragraph (c) of this section to the following standard missing data procedures:

(1) If the percent monitor data availability (PMA) is ≥ 90.0 percent, report the average Hg concentration for all valid sorbent trap analyses in the previous 12 months.

(2) If the PMA is ≥ 80.0 percent, but < 90.0 percent, report the 95th percentile Hg concentration obtained from all of the valid sorbent trap analyses in the previous 12 months.

(3) If the PMA is ≥ 70.0 percent, but < 80.0 percent, report the maximum Hg concentration obtained from all of the valid sorbent trap analyses in the previous 12 months.

(4) If the PMA is < 70.0 percent, report the maximum potential Hg concentration, as defined in section 2.1.7 of appendix A to this part.

(5) For the purposes of paragraphs (d)(1), (d)(2), and (d)(3) of this section, if fewer than 12 months have elapsed since initial certification, use whatever valid sorbent trap analyses are available to determine the appropriate substitute data values.

(e) Notwithstanding the requirements of paragraphs (c) and (d) of this section, if the unit has add-on Hg emission controls or is equipped with a flue gas desulfurization system that significantly reduces Hg emissions, the owner or operator shall report the maximum potential Hg concentration, as defined in section 2.1.7 of appendix A to this part, for any hour(s) in the missing data period for which proper operation of the Hg emission controls or FGD system is not documented according to §75.58(b)(3).

29. Section 75.53 is amended by:

a. Revising paragraph (e)(1)(i)(E);

b. Revising paragraph (e)(1)(iv) introductory text; and

c. Revising paragraph (e)(1)(x).

The revisions read as follows:

<u>§75.53 Monitoring plan</u>.

* * * * *

(e) * * * * *

(1) * * * * *

(i) * * * * *

(E) Type(s) of emission controls for SO_2, NO_x, Hg, and particulates installed or to be installed, including specifications of whether such controls are pre-combustion, post-combustion, or integral to the combustion process; control equipment code, installation date, and optimization date; control equipment retirement date (if applicable); primary/secondary controls indicator; and an indicator for whether the controls are an original installation;

* * * * *

(iv) Identification and description of each monitoring component (including each monitor and its identifiable components, such as analyzer and/or probe) in the CAMS (e.g., SO_2 pollutant concentration monitor, flow monitor, moisture monitor; NO_x pollutant concentration monitor, Hg monitor, and diluent gas monitor), the sorbent trap monitoring system, the continuous opacity monitoring system, or the excepted monitoring system (e.g., fuel flowmeter, data acquisition and handling system), including:

* * * * *

(x) For each parameter monitored: scale, maximum potential concentration (and method of calculation), maximum expected concentration (if applicable) (and method of calculation), maximum potential flow rate (and method of calculation), maximum potential NO_x emission rate, span value, full-scale range, daily calibration units of measure, span effective date/hour, span inactivation date/hour, indication of whether dual spans are required, default high range value, flow rate span, and flow rate span value and full scale value (in scfh) for each unit or stack using SO_2, NO_x, CO_2, O_2, Hg, or flow component monitors.

* * * * *

30. Section 75.57 is amended by adding new paragraphs (i) and (j), to read as follows:

§75.57 General recordkeeping provisions.

* * * * *

(i) Hg emission record provisions (CAMS). The owner or operator shall record for each hour the information required by this paragraph for each affected unit using Hg CAMS in combination with flow rate, and (in certain cases) moisture, and diluent gas monitors, to determine Hg mass emissions and (if applicable) unit heat input under a State or Federal Hg mass emissions reduction program that adopts the requirements of subpart I of this part.

(1) For Hg concentration during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination:

(i) Component-system identification code, as provided in §75.53;

(ii) Date and hour;

(iii) Hourly Hg concentration (:g/scm, rounded to the nearest tenth). For a particular pair of sorbent traps, this will be the flow-proportional average concentration for the data collection period;

(iv) The bias-adjusted hourly average Hg concentration (:g/scm, rounded to the nearest hundredth) if a bias adjustment factor is required, as provided in §75.24(d);

(v) Method of determination for hourly Hg concentration using Codes 1-55 in Table 4a of this section; and

(vi) The percent monitor data availability (to the nearest tenth of a percent), calculated pursuant to §75.32.

(2) For flue gas moisture content during unit operation (if required), as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination (except where a default moisture value is used in accordance with §75.11(b), §75.12(b), or approved under §75.66):

(i) Component-system identification code, as provided in §75.53;

(ii) Date and hour;

(iii) Hourly average moisture content of flue gas (percent, rounded to the nearest tenth). If the continuous moisture monitoring system consists of wet- and dry-basis oxygen analyzers, also record both the wet- and dry-basis oxygen hourly averages (in percent O_2, rounded to the nearest tenth);

(iv) Percent monitor data availability (recorded to the nearest tenth of a percent) for the moisture monitoring system, calculated pursuant to §75.32; and

(v) Method of determination for hourly average moisture percentage, using Codes 1-55 in Table 4a of this section.

(3) For diluent gas (O_2 or CO_2) concentration during unit operation (if required), as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination:

(i) Component-system identification code, as provided in §75.53;

(ii) Date and hour;

(iii) Hourly average diluent gas (O_2 or CO_2) concentration (in percent, rounded to the nearest tenth);

(iv) Method of determination code for diluent gas (O_2 or CO_2) concentration data using Codes 1-55, in Table 4a of this section; and

(v) The percent monitor data availability (to the nearest tenth of a percent) for the O_2 or CO_2 monitoring system (if a separate O_2 or CO_2 monitoring system is used for heat input determination), calculated pursuant to §75.32.

(4) For stack gas volumetric flow rate during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination, record the information required under paragraphs (c)(2)(i) through

(c)(2)(vi) of this section.

(5) For Hg mass emissions during unit operation, as measured and reported from the certified primary monitoring system(s), certified redundant or non-redundant back-up monitoring system(s), or other approved method(s) of emissions determination:

(i) Date and hour;

(ii) Hourly Hg mass emissions (ounces, rounded to three decimal places);

(iii) Hourly Hg mass emissions (ounces, rounded to three decimal places), adjusted for bias if a bias adjustment factor is required, as provided in §75.24(d); and

(iv) Identification code for emissions formula used to derive hourly Hg mass emissions from Hg concentration, flow rate and moisture data, as provided in §75.53.

(j) Hg emission record provisions (sorbent trap systems). The owner or operator shall record for each hour the information required by this paragraph, for each affected unit using sorbent trap monitoring systems in combination with flow rate, moisture, and (in certain cases) diluent gas monitors, to determine Hg mass emissions and (if required) unit heat input under a State or Federal Hg mass emissions reduction program that adopts the requirements of subpart I of this part.

(1) For Hg concentration during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination:

(i) Component-system identification code, as provided in §75.53;

(ii) Date and hour;

(iii) Hourly Hg concentration (:g/dscm, rounded to the nearest tenth). For a particular pair of sorbent traps, this will be the flow-proportional average concentration for the data collection period;

(iv) The bias-adjusted hourly average Hg concentration (:g/dscm, rounded to the nearest tenth) if a bias adjustment factor is required, as provided in §75.24(d);

(v) Method of determination for hourly average Hg concentration using Codes 1-55 in Table 4a of this section; and

(vi) Percent monitor data availability (recorded to the nearest tenth of a percent), calculated pursuant to §75.32;

(2) For flue gas moisture content during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination (except where a

default moisture value is used in accordance with §75.11(b), §75.12(b), or approved under §75.66), record the information required under paragraphs (i)(2)(i) through (i)(2)(v) of this section;

(3) For diluent gas (O_2 or CO_2) concentration during unit operation (if required for heat input determination), record the information required under paragraphs (i)(3)(i) through (i)(3)(v) of this section.

(4) For stack gas volumetric flow rate during unit operation, as measured and reported from each certified primary monitor, certified back-up monitor, or other approved method of emissions determination, record the information required under paragraphs (c)(2)(i) through (c)(2)(vi) of this section.

(5) For Hg mass emissions during unit operation, as measured and reported from the certified primary monitoring system(s), certified redundant or non-redundant back-up monitoring system(s), or other approved method(s) of emissions determination, record the information required under paragraph (i)(5) of this section.

(6) Record the average flow rate of stack gas through each sorbent trap (in appropriate units, e.g., liters/min, cc/min, dscm/min).

(7) Record the dry gas meter reading (in dscm, rounded

to the nearest hundredth), at the beginning and end of the collection period and at least once in each unit operating hour during the collection period.

(8) Calculate and record the ratio of the bias-adjusted stack gas flow rate to the sample flow rate, as described in section 11.2 of appendix K to this part.

31. Section 75.58 is amended by revising paragraphs (b)(3) introductory text, (b)(3)(i), and (b)(3)(ii), to read as follows:

§75.58 General recordkeeping provisions for specific situations.

* * * * *

(b) * * * * *

(3) Except as otherwise provided in §75.34 (d), for units with add-on SO_2 or NO_x emission controls following the provisions of §75.34(a)(1), (a)(2) or (a)(3), or for units with add-on Hg emission controls, the owner or operator shall record:

(i) Parametric data which demonstrate, for each hour of missing SO_2, Hg, or NO_x emission data, the proper operation of the add-on emission controls, as described in the quality assurance/quality control program for the unit. The parametric data shall be maintained on site and shall be submitted, upon request, to the Administrator, EPA Regional office, State, or local agency. Alternatively, for units equipped with flue gas desulfurization (FGD) systems, the owner or operator may use quality-assured data from a certified SO_2 monitor to demonstrate proper operation of the emission controls during periods of missing Hg data;

(ii) A flag indicating, for each hour of missing SO_2, Hg, or NO_x emission data, either that the add-on emission controls are operating properly, as evidenced by all parameters being within the ranges specified in the quality assurance/quality control program, or that the add-on emission controls are not operating properly;

* * * * *

32. Section 75.59 is amended by:

a. Revising the introductory text of paragraphs (a)(1), (a)(3),(a)(5), (a)(5)(ii), (a)(6), and (a)(9);

b. Adding paragraphs (a)(7)(vii), (a)(7)(viii), and (a)(14);

c. Revising paragraph (a)(9)(vi); and

d. Revising the introductory text of paragraph (c).

The revisions read as follows:

§75.59 Certification, quality assurance, and quality control record provisions.

* * * * *

(a) * * * * *

(1) For each SO_2 or NO_x pollutant concentration monitor, flow monitor, CO_2 emissions concentration monitor (including O_2 monitors used to determine CO_2 emissions), Hg monitor, or diluent gas monitor (including wet- and dry-basis O_2 monitors used to determine percent moisture), the owner or operator shall record the following for all daily and 7-day calibration error tests, all daily system integrity checks (Hg monitors, only), and all off-line calibration demonstrations, including any follow-up tests after corrective action:

* * * * *

(3) For each SO_2 or NO_x pollutant concentration monitor, CO_2 emissions concentration monitor (including O_2 monitors used to determine CO_2 emissions), Hg concentration monitor, or diluent gas monitor (including wet- and dry-basis O_2 monitors used to determine percent moisture), the owner or operator shall record the following for the initial and all subsequent linearity check(s) and 3-level system integrity checks (Hg monitors with converters, only), including any follow-up tests after corrective action:

* * * * *

(5) For each SO_2 pollutant concentration monitor, flow monitor, each CO_2 emissions concentration monitor (including any O_2 concentration monitor used to determine CO_2 mass

emissions or heat input), each NO_x-diluent continuous emission monitoring system, each NO_x concentration monitoring system, each diluent gas (O_2 or CO_2) monitor used to determine heat input, each moisture monitoring system, each Hg concentration monitoring system, each sorbent trap monitoring system, and each approved alternative monitoring system, the owner or operator shall record the following information for the initial and all subsequent relative accuracy test audits:

* * * * *

(ii) Individual test run data from the relative accuracy test audit for the SO_2 concentration monitor, flow monitor, CO_2 emissions concentration monitor, NO_x-diluent continuous emission monitoring system, SO_2-diluent continuous emission monitoring system, diluent gas (O_2 or CO_2) monitor used to determine heat input, NO_x concentration monitoring system, moisture monitoring system, Hg concentration monitoring system, sorbent trap monitoring system, or approved alternative monitoring system, including:

* * * * *

(6) For each SO_2, NO_x, Hg, or CO_2 emissions concentration monitor, NO_x-diluent continuous emission monitoring system, NO_x concentration monitoring system, or

diluent gas (O_2 or CO_2) monitor used to determine heat input, the owner or operator shall record the following information for the cycle time test:

* * * * *

(7) * * * * *

(vii) For each RATA run using the Ontario-Hydro method to determine Hg concentration:

(A) Percent CO_2 and O_2 in the stack gas, dry basis;

(B) Moisture content of the stack gas (percent H_2O);

(C) Average stack temperature (^{B}F);

(D) Dry gas volume metered (dscm);

(E) Percent isokinetic;

(F) Particle-bound Hg collected by the filter, blank, and probe rinse (:g);

(G) Oxidized Hg collected by the KCl impingers (:g)

(H) Elemental Hg collected in the HNO_3/H_2O_2 impinger and in the $KMnO_4/H_2SO_4$ impingers (:g);

(I) Total Hg, including particle-bound Hg (:g); and

(J) Total Hg, excluding particle-bound Hg (:g)

(viii) Data elements for instrumental Hg reference method. [Reserved]

* * * * *

(9) When hardcopy relative accuracy test reports, certification reports, recertification reports, or

semiannual or annual reports for gas or flow rate CAMS, Hg CAMS, or sorbent trap monitoring systems are required or requested under §75.60(b)(6) or §75.63, the reports shall include, at a minimum, the following elements (as applicable to the type(s) of test(s) performed:

* * * * *

(vi) Laboratory calibrations of the source sampling equipment. For sorbent trap monitoring systems, the laboratory analyses of all sorbent traps, and information documenting the results of all leak checks and other applicable quality control procedures.

* * * * *

(14) For the sorbent traps used in sorbent trap monitoring systems to quantify Hg concentration under subpart I of this part (including sorbent traps used for relative accuracy testing), the owner or operator shall keep records of the following:

(i) The ID number of the monitoring system in which each sorbent trap was used to collect Hg;

(ii) The unique identification number of each sorbent trap;

(iii) The beginning and ending dates and hours of the data collection period for each sorbent trap;

(iv) The average Hg concentration (in :g/dscm) for the data collection period;

(v) Information documenting the results of the required leak checks;

(vi) The analysis of the Hg collected by each sorbent trap; and

(vii) Information documenting the results of the other applicable quality control procedures in §75.15 and in appendices B and K to this part.

* * * * *

(c) Except as otherwise provided in §75.58(b)(3)(i), units with add-on SO_2 or NO_x emission controls following the provisions of §75.34(a)(1) or (a)(2), and for units with add-on Hg emission controls, the owner or operator shall keep the following records on-site in the quality assurance/quality control plan required by section 1 of appendix B to this part: * * * * *

* * * * *

33. Part 75 is amended by adding Subpart I, to read as follows:

Subpart I — Hg Mass Emission Provisions

§75.80 General provisions.

(a) Applicability. The owner or operator of a unit shall comply with the requirements of this subpart to the extent that compliance is required by an applicable State or

Federal Hg mass emission reduction program that incorporates by reference, or otherwise adopts the provisions of, this subpart.

(1) For purposes of this subpart, the term “affected unit” shall mean any coal-fired unit (as defined in §72.2 of this chapter) that is subject to a State or Federal Hg mass emission reduction program requiring compliance with this subpart. The term “non-affected unit” shall mean any unit that is not subject to such a program, the term “permitting authority” shall mean the permitting authority under an applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart, and the term “designated representative” shall mean the responsible party under the applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart.

(2) In addition, the provisions of subparts A, C, D, E, F, and G and appendices A through G of this part applicable to Hg concentration, flow rate, moisture, diluent gas concentration, and heat input, as set forth and referenced in this subpart, shall apply to the owner or operator of a unit required to meet the requirements of this subpart by a State or Federal Hg mass emission reduction program. The requirements of this part for SO_2, NO_x, CO_2

and opacity monitoring, recordkeeping and reporting do not apply to units that are subject only to a State or Federal Hg mass emission reduction program that adopts the requirements of this subpart, but are not affected units under the Acid Rain Program or under a State or Federal NO_x mass emission reduction program that adopts the requirements of subpart H of this part.

(b) Compliance dates. The owner or operator of an affected unit shall meet the compliance deadlines established by an applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart.

(c) Prohibitions.

(1) No owner or operator of an affected unit or a non-affected unit under §75.82(b)(2)(ii) shall use any alternative monitoring system, alternative reference method, or any other alternative for the required continuous emission monitoring system without having obtained prior written approval in accordance with paragraph (h) of this section.

(2) No owner or operator of an affected unit or a non-affected unit under §75.82(b)(2)(ii) shall operate the unit so as to discharge, or allow to be discharged emissions of Hg to the atmosphere without accounting for all such

emissions in accordance with the applicable provisions of this part.

(3) No owner or operator of an affected unit or a non-affected unit under §75.82(b)(2)(ii) shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording Hg mass emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the provisions of this part applicable to monitoring systems under §75.81.

(4) No owner or operator of an affected unit or a non-affected unit under §75.82(b)(2)(ii) shall retire or permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved emission monitoring system under this part, except under any one of the following circumstances:

(i) During the period that the unit is covered by a retired unit exemption that is in effect under the State or Federal Hg mass emission reduction program that adopts the requirements of this subpart; or

(ii) The owner or operator is monitoring Hg mass emissions from the affected unit with another certified monitoring system approved, in accordance with the provisions of paragraph (d) of this section; or

(iii) The designated representative submits notification of the date of certification testing of a replacement monitoring system in accordance with §75.61.

(d) Initial certification and recertification procedures.

(1) The owner or operator of an affected unit that is subject to the Acid Rain Program or to a State or Federal NO_x mass emission reduction program that adopts the requirements of subpart H of this part shall comply with the applicable initial certification and recertification procedures in §75.20 and §75.70(d), except that the owner or operator shall meet any additional requirements for Hg concentration monitoring systems, sorbent trap monitoring systems (as defined in §72.2 of this chapter), flow monitors, CO_2 monitors, O_2 monitors, or moisture monitors, as set forth under §75.81, under the common stack provisions in §75.82, or under an applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart.

(2) The owner or operator of an affected unit that is not subject to the Acid Rain Program or to a State or Federal NO_x mass emission reduction program that adopts the

requirements of subpart H of this part shall comply with the initial certification and recertification procedures established by an applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart.

(e) Quality assurance and quality control requirements. For units that use continuous emission monitoring systems to account for Hg mass emissions, the owner or operator shall meet the applicable quality assurance and quality control requirements in §75.21 and appendix B to this part for the flow monitoring systems, Hg concentration monitoring systems, moisture monitoring systems, and diluent monitors required under §75.81. Units using sorbent trap monitoring systems shall meet the applicable quality assurance requirements in §75.15, appendix K to this part, and sections 1.5 and 2.3 of appendix B to this part.

(f) Missing data procedures. Except as provided in §75.38(b) and paragraph (g) of this section, the owner or operator shall provide substitute data from monitoring systems required under §75.81 for each affected unit as follows:

(1) For an owner or operator using an Hg concentration monitoring system, substitute for missing data in accordance

with the applicable missing data procedures in §§75.31 through 75.38 whenever the unit combusts fuel and:

(i) A valid, quality-assured hour of Hg concentration data (in :g/scm) has not been measured and recorded, either by a certified Hg concentration monitoring system, by an appropriate EPA reference method under §75.22, or by an approved alternative monitoring method under subpart E of this part; or

(ii) A valid, quality-assured hour of flow rate data (in scfh) has not been measured and recorded for a unit either by a certified flow monitor, by an appropriate EPA reference method under §75.22, or by an approved alternative monitoring system under subpart E of this part; or

(iii) A valid, quality-assured hour of moisture data (in percent H_2O) has not been measured or recorded for an affected unit, either by a certified moisture monitoring system, by an appropriate EPA reference method under §75.22, or an approved alternative monitoring method under subpart E of this part. This requirement does not apply when a default percent moisture value, as provided in §75.11(b) or §75.12(b), is used to account for the hourly moisture content of the stack gas, or when correction of the Hg concentration for moisture is not necessary; or

(iv) A valid, quality-assured hour of heat input rate data (in MMBtu/hr) has not been measured and recorded for a unit, either by certified flow rate and diluent (CO_2 or O_2) monitors, by appropriate EPA reference methods under §75.22, or by approved alternative monitoring systems under subpart E of this part, where heat input is required for allocating allowances under the applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart.

(2) For an owner or operator using a sorbent trap monitoring system to quantify Hg mass emissions, substitute for missing data in accordance with the missing data procedures in §75.39.

(g) Reporting data prior to initial certification. If, by the applicable compliance date under the State or Federal Hg mass emission reduction program that adopts the requirements of this subpart, the owner or operator of an affected unit has not successfully completed all required certification tests for any monitoring system(s), he or she shall determine, record and report hourly data prior to initial certification using one of the following procedures, for the monitoring system(s) that are uncertified:

(1) For Hg concentration and flow monitoring systems, report the maximum potential concentration of Hg as defined in section 2.1.7 of appendix A to this part and the maximum

potential flow rate, as defined in section 2.1.4.1 of appendix A to this part; or

(2) For any unit, report data from the reference methods under §75.22; or

(3) For any unit that is required to report heat input for purposes of allocating allowances, report (as applicable) the maximum potential flow rate, as defined in section 2.1.4.1 of appendix A to this part, the maximum potential CO_2 concentration, as defined in section 2.1.3.1 of appendix A to this part, the minimum potential O_2 concentration, as defined in section 2.1.3.2 of appendix A to this part, and the minimum potential percent moisture, as defined in section 2.1.5 of appendix A to this part.

(h) Petitions.

(1) The designated representative of an affected unit that is also subject to the Acid Rain Program may submit a petition to the Administrator requesting an alternative to any requirement of this subpart. Such a petition shall meet the requirements of §75.66 and any additional requirements established by the applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart. Use of an alternative to any requirement of this subpart is in accordance with this subpart and with such State or Federal Hg mass emission reduction program

only to the extent that the petition is approved in writing by the Administrator, in consultation with the permitting authority.

(2) Notwithstanding paragraph (h)(1) of this section, petitions requesting an alternative to a requirement concerning any additional CAMS required solely to meet the common stack provisions of §75.82 shall be submitted to the permitting authority and the Administrator and shall be governed by paragraph (h)(3) of this section. Such a petition shall meet the requirements of §75.66 and any additional requirements established by an applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart.

(3) The designated representative of an affected unit that is not subject to the Acid Rain Program may submit a petition to the permitting authority and the Administrator requesting an alternative to any requirement of this subpart. Such a petition shall meet the requirements of §75.66 and any additional requirements established by the applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart. Use of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that it is approved in writing by the Administrator, in consultation

with the permitting authority.

§75.81 Monitoring of Hg mass emissions and heat input at the unit level.

The owner or operator of the affected coal-fired unit shall either:

(a) Meet the general operating requirements in §75.10 for the following continuous emission monitors (except as provided in accordance with subpart E of this part):

(1) A Hg concentration monitoring system (as defined in §72.2 of this chapter) or a sorbent trap monitoring system (as defined in §72.2 of this chapter) to measure Hg concentration; and

(2) A flow monitoring system; and

(3) A continuous moisture monitoring system (if correction of Hg concentration for moisture is required), as described in §75.11(b) or §75.12(b). Alternatively, the owner or operator may use the appropriate fuel-specific default moisture value provided in §75.11 or §75.12, or a site-specific moisture value approved by petition under §75.66; and

(4) If heat input is required to be reported under the applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart, the owner or operator also must meet the general operating

requirements for a flow monitoring system and an O_2 or CO_2 monitor to measure heat input rate; or

(b) For an affected unit that emits 464 ounces (29 lb) of Hg per year or less, use the following excepted monitoring methodology. To implement this methodology for a qualifying unit, the owner or operator shall meet the general operating requirements in §75.10 for the continuous emission monitors described in paragraphs (a)(2) and (a)(4) of this section, and perform Hg emission testing for initial certification and on-going quality-assurance, as described in paragraphs (c) through (e) of this section.

(c) To determine whether an affected unit is eligible to use the monitoring provisions in paragraph (b) of this section:

(1) The owner or operator must perform Hg emission testing prior to the compliance date in §75.80(b), to determine the Hg concentration (i.e., total vapor phase Hg) in the effluent. The testing shall be performed using one of the Hg reference methods listed in §75.22, and shall consist of a minimum of 3 runs at the normal unit operating load. The minimum time per run shall be 1 hour if an instrumental reference method is used. If the Ontario-Hydro method is used, the test runs must be long enough to ensure that sufficient Hg is collected to analyze. If the unit is

equipped with flue gas desulfurization or add-on Hg emission controls, the controls must be operating normally during the testing, and, for the purpose of establishing proper operation of the controls, the owner or operator shall record parametric data or SO_2 concentration data in accordance with §75.58(b)(3)(i).

(2) Based on the results of the emission testing, Equation 1 of this section shall be used to provide a conservative estimate of the annual Hg mass emissions from the unit:

$$E = 8760\ K\ C_{Hg}\ Q_{max} \qquad \text{(Eq. 1)}$$

Where:

E = Estimated annual Hg mass emissions from the affected unit (ounces/year)
K = Units conversion constant, 9.978×10^{-10} oz-scm/:g-scf
8760 = Number of hours in a year
C_{Hg} = The highest Hg concentration (:g/scm) from any of the test runs or 0.50 :g/scm, whichever is greater
Q_{max} = Maximum potential flow rate, determined according to section 2.1.4.1 of appendix A to this part (scfh)

Equation 1 of this section assumes that the unit operates year-round at its maximum potential flow rate. Also, note that if the highest Hg concentration measured in any test run is less than 0.50 :g/scm, a default value of 0.50 :g/scm must be used in the calculations.

(3) If the estimated annual Hg mass emissions from

paragraph (c)(2) of this section are 464 ounces per year or less, then the unit is eligible to use the monitoring provisions in paragraph (b) of this section, and continuous monitoring of the Hg concentration is not required (except as otherwise provided in paragraphs (e) and (f) of this section).

(d) If the owner or operator of an eligible unit under paragraph (c)(3) of this section elects not to continuously monitor Hg concentration, then the following requirements must be met:

(1) The results of the Hg emission testing performed under paragraph (c) of this section shall be submitted as a certification application to the Administrator and to the permitting authority, no later than 45 days after the testing is completed. The calculations demonstrating that the unit emits 464 ounces (or less) per year of Hg shall also be provided, and the default Hg concentration that will be used for reporting under §75.84 shall be specified in both the electronic and hard copy portions of the monitoring plan for the unit. The methodology is considered to be provisionally certified as of the date and hour of completion of the Hg emission testing.

(2) Following initial certification, the same default Hg concentration value that was used to estimate the unit's

annual Hg mass emissions under paragraph (c) of this section shall be reported for each unit operating hour, except as otherwise provided in paragraph (d)(6) of this section. The default Hg concentration value shall be updated as appropriate, according to paragraph (d)(5) of this section.

(3) The hourly Hg mass emissions shall be calculated according to section 9.1.3 in appendix F to this part.

(4) The Hg emission testing described in paragraph (c) of this section shall be repeated periodically, for the purposes of quality-assurance, as follows:

(i) If the results of the certification testing under paragraph (c) of this section show that the unit emits 144 ounces (9 lb) of Hg per year or less, the first retest is required by the end of the fourth QA operating quarter (as defined in §72.2 of this chapter) following the calendar quarter of the certification testing; or

(ii) If the results of the certification testing under paragraph (c) of this section show that the unit emits more than 144 ounces of Hg per year, but less than or equal to 464 ounces per year, the first retest is required by the end of the second QA operating quarter (as defined in §72.2 of this chapter) following the calendar quarter of the certification testing; and

(iii) Thereafter, retesting shall be required either semiannually or annually (i.e., by the end of the second or fourth QA operating quarter following the quarter of the previous test), depending on the results of the previous test. To determine whether the next retest is due within two or four QA operating quarters, substitute the highest Hg concentration from the current test or 0.50 :g/scm (whichever is greater) into the equation in paragraph (c)(2) of this section. If the estimated annual Hg mass emissions exceeds 144 ounces, the next test is due within two QA operating quarters. If the estimated annual Hg mass emissions is 144 ounces or less, the next test is due within four QA operating quarters.

(5) The default Hg concentration used for reporting under §75.84 shall be updated after each required retest. The updated value shall either be the highest Hg concentration measured in any of the test runs or 0.50 :g/scm, whichever is greater. The updated default value shall be applied beginning with the first unit operating hour after completion of the retest.

(6) If the unit is equipped with a flue gas desulfurization system or add-on Hg controls, the owner or operator shall record the information required under §75.58(b)(3) for each unit operating hour, to document proper operation of the emission controls. For any

operating hour in which this documentation is unavailable, the maximum potential Hg concentration, as defined in section 2.1.7 of appendix A to this part, shall be reported.

(e) For units with common stack and multiple stack exhaust configurations, the use of the monitoring methodology described in paragraphs (b) through (d) of this section this section is restricted as follows:

(1) The methodology may not be used for reporting Hg mass emissions at a common stack unless all of the units using the common stack are affected units and each individual unit is demonstrated to emit 464 ounces of Hg per year, or less, in accordance with paragraphs (c) and (d) of this section. If these conditions are met, the default Hg concentration used for reporting at the common stack shall either be the highest value obtained in any test run for any of the units serving the common stack or 0.50 :g/scm, whichever is greater.

(2) For units with multiple stack or duct configurations, Hg emission testing must be performed separately on each stack or duct, and the sum of the estimated annual Hg mass emissions from the stacks or ducts must not exceed 464 ounces of Hg per year. For reporting purposes, the default Hg concentration used for each stack or duct shall either be the highest value obtained in any

test run for that stack or 0.50 :g/scm, whichever is greater.

(3) For units with a main stack and bypass stack configuration, Hg emission testing shall be performed only on the main stack. For reporting purposes, the default Hg concentration used for the main stack shall either be the highest value obtained in any test run for that stack or 0.50 :g/scm, whichever is greater. Whenever the main stack is bypassed, the maximum potential Hg concentration, as defined in section 2.1.7 of appendix A to this part, shall be reported.

(f) At the end of each calendar year, if the cumulative annual Hg mass emissions from an affected unit have exceeded 464 ounces, then the owner shall install, certify, operate, and maintain a Hg concentration monitoring system or a sorbent trap monitoring system no later than 180 days after the end of the calendar year in which the annual Hg mass emissions exceeded 464 ounces. For common stack and multiple stack configurations, installation and certification of a Hg concentration or sorbent trap monitoring system on each stack (except for bypass stacks) is likewise required within 180 days after the end of the calendar year, if:

(1) The annual Hg mass emissions at the common stack

have exceeded 464 ounces times the number of affected units using the common stack; or

(2) The sum of the annual Hg mass emissions from all of the multiple stacks or ducts has exceeded 464 ounces; or

(3) The sum of the annual Hg mass emissions from the main and bypass stacks has exceeded 464 ounces.

(g) For an affected unit that is using a Hg concentration CAMS or a sorbent trap system under §75.81(a) to continuously monitor the Hg mass emissions, the owner or operator may switch to the methodology in §75.81(b), provided that the applicable conditions in paragraphs (c) through (f) of this section are met.

§75.82 Monitoring of Hg mass emissions and heat input at common and multiple stacks.

(a) Unit utilizing common stack with other affected unit(s). When an affected unit utilizes a common stack with one or more affected units, but no non-affected units, the owner or operator shall either:

(1) Install, certify, operate, and maintain the monitoring systems described in §75.81(a) at the common stack, record the combined Hg mass emissions for the units exhausting to the common stack. Alternatively, if, in accordance with §75.81(e), each of the units using the common stack is demonstrated to emit less than 464 ounces of

Hg per year, the owner or operator may install, certify, operate and maintain the monitoring systems and perform the Hg emission testing described under §75.81(b). If reporting of the unit heat input rate is required, determine the hourly unit heat input rates either by:

(i) Apportioning the common stack heat input rate to the individual units according to the procedures in §75.16(e)(3); or

(ii) Installing, certifying, operating, and maintaining a flow monitoring system and diluent monitor in the duct to the common stack from each unit; or

(2) Install, certify, operate, and maintain the monitoring systems and (if applicable) perform the Hg emission testing described in §75.81(a) or §75.81(b) in the duct to the common stack from each unit.

(b) Unit utilizing common stack with nonaffected unit(s). When one or more affected units utilizes a common stack with one or more nonaffected units, the owner or operator shall either: (1) Install, certify, operate, and maintain the monitoring systems and (if applicable) perform the Hg emission testing described in §75.81(a) or §75.81(b) in the duct to the common stack from each affected unit; or

(2) Install, certify, operate, and maintain the monitoring systems described in §75.81(a) in the common

stack; and

(i) Install, certify, operate, and maintain the monitoring systems and (if applicable) perform the Hg emission testing described in §75.81(a) or §75.81(b) in the duct to the common stack from each non-affected unit. The designated representative shall submit a petition to the permitting authority and the Administrator to allow a method of calculating and reporting the Hg mass emissions from the affected units as the difference between Hg mass emissions measured in the common stack and Hg mass emissions measured in the ducts of the non-affected units, not to be reported as an hourly value less than zero. The permitting authority and the Administrator may approve such a method whenever the designated representative demonstrates, to the satisfaction of the permitting authority and the Administrator, that the method ensures that the Hg mass emissions from the affected units are not underestimated; or

(ii) Count the combined emissions measured at the common stack as the Hg mass emissions for the affected units, for recordkeeping and compliance purposes, in accordance with paragraph (a) of this section; or

(iii) Submit a petition to the permitting authority and the Administrator to allow use of a method for apportioning Hg mass emissions measured in the common stack to each of the units using the common stack and for reporting the Hg mass emissions. The permitting authority and the Administrator may approve such a method whenever the designated representative demonstrates, to the satisfaction of the permitting authority and the Administrator, that the method ensures that the Hg mass emissions from the affected units are not underestimated.

(c) Unit with a main stack and a bypass stack. Whenever any portion of the flue gases from an affected unit can be routed through a bypass stack to avoid the Hg monitoring system(s) installed on the main stack, the owner and operator shall either:

(1) Install, certify, operate, and maintain the monitoring systems described in §75.81(a) on both the main stack and the bypass stack and calculate Hg mass emissions for the unit as the sum of the Hg mass emissions measured at the two stacks;

(2) Install, certify, operate, and maintain the monitoring systems described in §75.81(a) at the main stack and measure Hg mass emissions at the bypass stack using the appropriate reference methods in §75.22(b). Calculate Hg mass emissions for the unit as the sum of the emissions recorded by the installed monitoring systems on the main stack and the emissions measured by the reference method

monitoring systems; or

(3) Install, certify, operate, and maintain the monitoring systems and (if applicable) perform the Hg emission testing described in §75.81(a) or §75.81(b) only on the main stack. If this option is chosen, it is not necessary to designate the exhaust configuration as a multiple stack configuration in the monitoring plan required under §75.53, since only the main stack is monitored. For each unit operating hour in which the bypass stack is used, report, as applicable, the maximum potential Hg concentration (as defined in section 2.1.7 of appendix A to this part), and the appropriate substitute data values for flow rate, CO_2 concentration, O_2 concentration , and moisture (as applicable), in accordance with the missing data procedures of §§75.31 through 75.37.

(d) *Unit with multiple stack or duct configuration.* When the flue gases from an affected unit discharge to the atmosphere through more than one stack, or when the flue gases from an affected unit utilize two or more ducts feeding into a single stack and the owner or operator chooses to monitor in the ducts rather than in the stack, the owner or operator shall either:

(1) Install, certify, operate, and maintain the monitoring systems and (if applicable) perform the Hg

emission testing described in §75.81(a) or §75.81(b) in each of the multiple stacks and determine Hg mass emissions from the affected unit as the sum of the Hg mass emissions recorded for each stack. If another unit also exhausts flue gases into one of the monitored stacks, the owner or operator shall comply with the applicable requirements of paragraphs (a) and (b) of this section, in order to properly determine the Hg mass emissions from the units using that stack; or

(2) Install, certify, operate, and maintain the monitoring systems and (if applicable) perform the Hg emission testing described in §75.81(a) or §75.81(b) in each of the ducts that feed into the stack, and determine Hg mass emissions from the affected unit using the sum of the Hg mass emissions measured at each duct, except that where another unit also exhausts flue gases to one or more of the stacks, the owner or operator shall also comply with the applicable requirements of paragraphs (a) and (b) of this section to determine and record Hg mass emissions from the units using that stack.

§75.83 Calculation of Hg mass emissions and heat input rate.

The owner or operator shall calculate Hg mass emissions and heat input rate in accordance with the procedures in sections 9.1 through 9.3 of appendix F to this part.

§75.84 Recordkeeping and reporting.

(a) General recordkeeping provisions. The owner or operator of any affected unit shall maintain for each affected unit and each non-affected unit under §75.82(b)(2)(ii) a file of all measurements, data, reports, and other information required by this part at the source in a form suitable for inspection for at least 3 years from the date of each record. Except for the certification data required in §75.57(a)(4) and the initial submission of the monitoring plan required in §75.57(a)(5), the data shall be collected beginning with the earlier of the date of provisional certification or the compliance deadline in §75.80(b). The certification data required in §75.57(a)(4) shall be collected beginning with the date of the first certification test performed. The file shall contain the following information:

(1) The information required in §§75.57(a)(2), (a)(4), (a)(5), (a)(6), (b), (c)(2), (g) (if applicable), (h), and (i) or (j) (as applicable). For the information in §75.57(a)(2), replace the phrase “the deadline in §75.4(a), (b) or (c)” with the phrase “the applicable certification deadline under the State or Federal Hg mass emission reduction program”;

(2) The information required in §75.58(b)(3), for units with flue gas desulfurization systems or add-on Hg emission controls;

(3) For affected units using Hg CAMS or sorbent trap monitoring systems, for each hour when the unit is operating, record the Hg mass emissions, calculated in accordance with section 9 of appendix F to this part.

(4) Heat input and Hg methodologies for the hour; and

(5) Formulas from monitoring plan for total Hg mass emissions and heat input rate (if applicable);

(b) Certification, quality assurance and quality control record provisions. The owner or operator of any affected unit shall record the applicable information in §75.59 for each affected unit or group of units monitored at a common stack and each non-affected unit under §75.82(b)(2)(ii).

(c) Monitoring plan recordkeeping provisions.

(1) General provisions. The owner or operator of an affected unit shall prepare and maintain a monitoring plan for each affected unit or group of units monitored at a common stack and each non-affected unit under §75.82(b)(2)(ii). The monitoring plan shall contain sufficient information on the continuous monitoring systems and the use of data derived from these systems to

demonstrate that all the unit’s Hg emissions are monitored and reported.

(2) Updates. Whenever the owner or operator makes a replacement, modification, or change in a certified continuous monitoring system or alternative monitoring system under subpart E of this part, including a change in the automated data acquisition and handling system or in the flue gas handling system, that affects information reported in the monitoring plan (e.g., a change to a serial number for a component of a monitoring system), then the owner or operator shall update the monitoring plan.

(3) Contents of the monitoring plan. Each monitoring plan shall contain the information in §75.53(e)(1) in electronic format and the information in §75.53(e)(2) in hardcopy format.

(d) General reporting provisions.

(1) The designated representative for an affected unit shall comply with all reporting requirements in this section and with any additional requirements set forth in an applicable State or Federal Hg mass emission reduction program that adopts the requirements of this subpart.

(2) The designated representative for an affected unit shall submit the following for each affected unit or group of units monitored at a common stack and each non-affected

unit under §75.82(b)(2)(ii):

(i) Initial certification and recertification applications in accordance with §75.80(d);

(ii) Monitoring plans in accordance with paragraph (e) of this section; and

(iii) Quarterly reports in accordance with paragraph (f) of this section.

(3) Other petitions and communications. The designated representative for an affected unit shall submit petitions, correspondence, application forms, and petition-related test results in accordance with the provisions in §75.80(h).

(4) Quality assurance RATA reports. If requested by the permitting authority, the designated representative of an affected unit shall submit the quality assurance RATA report for each affected unit or group of units monitored at a common stack and each non-affected unit under §75.82(b)(2)(ii) by the later of 45 days after completing a quality assurance RATA according to section 2.3 of appendix B to this part or 15 days of receiving the request. The designated representative shall report the hardcopy information required by §75.59(a)(9) to the permitting authority.

(5) Notifications. The designated representative for

an affected unit shall submit written notice to the permitting authority according to the provisions in §75.61 for each affected unit or group of units monitored at a common stack and each non-affected unit under §75.82(b)(2)(ii).

(e) Monitoring plan reporting.

(1) Electronic submission. The designated representative for an affected unit shall submit to the Administrator a complete, electronic, up-to-date monitoring plan file for each affected unit or group of units monitored at a common stack and each non-affected unit under §75.82(b)(2)(ii), as follows: no later than 45 days prior to the commencement of initial certification testing; at the time of a certification or recertification application submission; and whenever an update of the electronic monitoring plan is required, either under §75.53 or elsewhere in this part.

(2) Hardcopy submission. The designated representative of an affected unit shall submit all of the hardcopy information required under §75.53, for each affected unit or group of units monitored at a common stack and each non-affected unit under §75.82(b)(2)(ii), to the permitting authority prior to initial certification. Thereafter, the designated representative shall submit

hardcopy information only if that portion of the monitoring plan is revised. The designated representative shall submit the required hardcopy information as follows: no later than 45 days prior to the commencement of initial certification testing; with any certification or recertification application, if a hardcopy monitoring plan change is associated with the recertification event; and within 30 days of any other event with which a hardcopy monitoring plan change is associated, pursuant to §75.53(b). Electronic submittal of all monitoring plan information, including hardcopy portions, is permissible provided that a paper copy of the hardcopy portions can be furnished upon request.

(f) Quarterly reports.

(1) Electronic submission. Electronic quarterly reports shall be submitted, beginning with the calendar quarter containing the compliance date in §75.80(b), unless otherwise specified in the final rule implementing a State or Federal Hg mass emissions reduction program that adopts the requirements of this subpart. The designated representative for an affected unit shall report the data and information in this paragraph (f)(1) and the applicable compliance certification information in paragraph (f)(2) of this section to the Administrator quarterly. Each

electronic report must be submitted to the Administrator within 30 days following the end of each calendar quarter. Each electronic report shall include the date of report generation and the following information for each affected unit or group of units monitored at a common stack.

(i) The facility information in §75.64(a)(1); and

(ii) The information and hourly data required in paragraph (a) of this section, except for:

(A) Descriptions of adjustments, corrective action, and maintenance;

(B) Information which is incompatible with electronic reporting (e.g., field data sheets, lab analyses, quality control plan);

(C) For units with flue gas desulfurization systems or with add-on Hg emission controls, the parametric information in §75.58(b)(3);

(D) Information required by §75.57(h) concerning the causes of any missing data periods and the actions taken to cure such causes;

(E) Hardcopy monitoring plan information required by §75.53 and hardcopy test data and results required by §75.59;

(F) Records of flow polynomial equations and numerical values required by §75.59(a)(5)(vi);

(G) Stratification test results required as part of the RATA supplementary records under §75.59(a)(7);

(H) Data and results of RATAs that are aborted or invalidated due to problems with the reference method or operational problems with the unit and data and results of linearity checks that are aborted or invalidated due to operational problems with the unit;

(I) Supplementary RATA information required under §75.59(a)(7)(i) through §75.59(a)(14), as applicable, except that: the data under §75.59(a)(7)(ii)(A) through (T) and the data under §75.59(a)(7)(iii)(A) through (M) shall, as applicable, be reported for flow RATAs in which angular compensation (measurement of pitch and/or yaw angles) is used and for flow RATAs in which a site-specific wall effects adjustment factor is determined by direct measurement; and the data under §75.59(a)(7)(ii)(T) shall be reported for all flow RATAs in which a default wall effects adjustment factor is applied;

(J) For units using sorbent trap monitoring systems, the hourly dry gas meter readings taken between the initial and final meter readings for the data collection period; and

(iii) Ounces of Hg emitted during quarter and cumulative ounces of Hg emitted in the year-to-date (rounded to the nearest thousandth); and

(iv) Unit or stack operating hours for quarter, cumulative unit or stack operating hours for year-to-date; and

(v) Reporting period heat input (if applicable) and cumulative, year-to-date heat input.

(2) Compliance certification.

(i) The designated representative shall certify that the monitoring plan information in each quarterly electronic report (i.e., component and system identification codes, formulas, etc.) represent current operating conditions for the affected unit(s)

(ii) The designated representative shall submit and sign a compliance certification in support of each quarterly emissions monitoring report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit’s emissions are correctly and fully monitored. The certification shall state that:

(A) The monitoring data submitted were recorded in accordance with the applicable requirements of this part, including the quality assurance procedures and specifications; and

(B) With regard to a unit with an FGD system or with add-on Hg emission controls, that for all hours where data are substituted in accordance with §75.38(b), the add-on emission controls were operating within the range of parameters listed in the quality-assurance plan for the unit (or that quality-assured SO_2 CAMS data were available to document proper operation of the emission controls), and that the substitute values do not systematically underestimate Hg emissions.

(3) Additional reporting requirements. The designated representative shall also comply with all of the quarterly reporting requirements in §§75.64(d), (f), and (g).

34. Appendix A to part 75 is amended by revising the title of section 1.1 and revising the second sentence of section 1.1 introductory text, to read as follows:

Appendix A to Part 75 – Specifications and Test Procedures

1. Installation and Measurement Location.

1.1 Gas and Hg Monitors

* * * * * Select a representative measurement point or path for the monitor probe(s) (or for the path from the transmitter to the receiver) such that the SO_2, CO_2, O_2, and NO_x concentration monitoring system or NO_x-diluent CAMS (NO_x pollutant concentration monitor and diluent gas monitor), Hg concentration monitoring system, or sorbent trap monitoring system will pass the relative accuracy test (see section 6 of this appendix).

* * * * *

Appendix A to Part 75 [Amended]

35. Appendix A to part 75 is further amended by adding new sections 2.1.7 through 2.1.7.4 and 2.2.3, to read as follows:

2. Equipment Specifications.

* * * * *

2.1.7 Hg Monitors

Determine the appropriate span and range value(s) for each Hg pollutant concentration monitor, so that all expected Hg concentrations can be determined accurately.

2.1.7.1 Maximum Potential Concentration

(a) The maximum potential concentration depends upon the type of coal combusted in the unit. For the initial MPC determination, there are three options:

(1) Use one of the following default values: 9 :g/scm for bituminous coal; 10 :g/scm for sub-bituminous coal; 16 :g/scm for lignite, and 1 :g/scm for waste coal, i.e., anthracite culm or bituminous gob. If different coals are blended, use the highest MPC for any fuel in the blend; or

(2) You may base the MPC on the results of site-specific emission testing using the one of the Hg reference methods in §75.22, if the unit does not have add-on Hg emission controls or a flue gas desulfurization system, or

if you test upstream of these control devices. A minimum of 3 test runs are required, at the normal operating load. Use the highest total Hg concentration obtained in any of the tests as the MPC; or

(3) You may base the MPC on 720 or more hours of historical CAMS data or data from a sorbent trap monitoring system, if the unit does not have add-on Hg emission controls or a flue gas desulfurization system (or if the CAMS or sorbent trap system is located upstream of these control devices) and if the Hg CAMS or sorbent trap system has been tested for relative accuracy against one of the Hg reference methods in §75.22 and has met a relative accuracy specification of 20.0% or less.

(b) For the purposes of missing data substitution, the fuel-specific or site-specific MPC values defined in paragraph (a) of this section apply to units using sorbent trap monitoring systems.

2.1.7.2 Maximum Expected Concentration

For units with FGD systems that significantly reduce Hg emissions (including fluidized bed units that use limestone injection) and for units equipped with add-on Hg emission controls (e.g., carbon injection), determine the maximum expected Hg concentration (MEC) during normal, stable operation of the unit and emission controls. To calculate the MEC, substitute the MPC value from section 2.1.7.1 of this appendix into Equation A-2 in section 2.1.1.2 of this appendix. For units with add-on Hg emission controls, base the percent removal efficiency on design engineering calculations. For units with FGD systems, use the best available estimate of the Hg removal efficiency of the FGD system.

2.1.7.3 Span and Range Value(s)

(a) For each Hg monitor, determine a high span value, by rounding the MPC value from section 2.1.7.1 of this appendix upward to the next highest multiple of 10 :g/scm.

(b) For an affected unit equipped with an FGD system or a unit with add-on Hg emission controls, if the MEC value from section 2.1.7.2 of this appendix is less than 20 percent of the high span value from paragraph (a) of this section, and if the high span value is 20 :g/scm or greater, define a second, low span value of 10 :g/scm.

(c) If only a high span value is required, set the full-scale range of the Hg analyzer to be greater than or equal to the span value.

(d) If two span values are required, you may either:

(1) Use two separate (high and low) measurement scales, setting the range of each scale to be greater than or equal to the high or low span value, as appropriate; or

(2) Quality-assure two segments of a single measurement scale.

2.1.7.4 Adjustment of Span and Range

For each affected unit or common stack, the owner or operator shall make a periodic evaluation of the MPC, MEC, span, and range values for each Hg monitor (at a minimum, an annual evaluation is required) and shall make any necessary span and range adjustments, with corresponding monitoring plan updates. Span and range adjustments may be required, for example, as a result of changes in the fuel supply, changes in the manner of operation of the unit, or installation or removal of emission controls. In implementing the provisions in paragraphs (a) and (b) of this section, data recorded during short-term, non-representative process operating conditions (e.g., a trial burn of a different type of fuel) shall be excluded from consideration. The owner or operator shall keep the results of the most recent span and range evaluation on-site, in a format suitable for inspection. Make each required span or range adjustment no later than 45 days after the end of the quarter in which the need to adjust the span or range is identified, except that up to 90 days after the end of that quarter may be taken to implement a span adjustment if the calibration gas concentrations currently being used for calibration error tests, system integrity checks, and linearity checks are unsuitable for use with the new span value and new calibration materials must be ordered.

(a) The guidelines of section 2.1 of this appendix do not apply to Hg monitoring systems.

(b) Whenever a full-scale range exceedance occurs during a quarter and is not caused by a monitor out-of-control period, proceed as follows:

(1) For monitors with a single measurement scale, report 200 percent of the full-scale range as the hourly Hg concentration until the readings come back on-scale and if appropriate, make adjustments to the MPC, span, and range to prevent future full-scale exceedances; or

(2) For units with two separate measurement scales, if the low range is exceeded, no further action is required, provided that the high range is available and is not out-of-control or out-of-service for any reason. However, if the high range is not able to provide quality assured data at the time of the low range exceedance or at any time during the continuation of the exceedance, report the MPC until the readings return to the low range or until the high range is able to provide quality assured data (unless the reason that the high-scale range is not able to provide quality assured data is because the high-scale range has been exceeded; if

the high-scale range is exceeded follow the procedures in paragraph (b)(1) of this section).

(c) Whenever changes are made to the MPC, MEC, full-scale range, or span value of the Hg monitor, record and report (as applicable) the new full-scale range setting, the new MPC or MEC and calculations of the adjusted span value in an updated monitoring plan. The monitoring plan update shall be made in the quarter in which the changes become effective. In addition, record and report the adjusted span as part of the records for the daily calibration error test and linearity check specified by appendix B to this part. Whenever the span value is adjusted, use calibration gas concentrations that meet the requirements of section 5.1 of this appendix, based on the adjusted span value. When a span adjustment is so significant that the calibration gas concentrations currently being used for calibration error tests, system integrity checks and linearity checks are unsuitable for use with the new span value, then a diagnostic linearity or 3-level system integrity check using the new calibration gas concentrations must be performed and passed. Use the data validation procedures in §75.20(b)(3), beginning with the hour in which the span is changed.

2.2 Design for Quality Control Testing

* * * * *

2.2.3 Mercury Monitors.

Design and equip each mercury monitor to permit the introduction of known concentrations of elemental Hg and $HgCl_2$ separately, at a point immediately preceding the sample extraction filtration system, such that the entire measurement system can be checked. If the Hg monitor does not have a converter, the $HgCl_2$ injection capability is not required.

Appendix A to Part 75 [Amended]

36. Appendix A to part 75 is further amended by:

a. Adding a new paragraph (c) to section 3.1;

b. Adding a new paragraph (c) to section 3.2; and

c. Adding new sections 3.3.8 and 3.4.3.

The revisions and additions read as follows:

<u>3. Performance Specifications</u>.

3.1 Calibration Error

* * * * *

(c) The calibration error of a Hg concentration monitor shall not deviate from the reference value of either the zero or upscale calibration gas by more than 5.0 percent of the span value, as calculated using Equation A-5 of this appendix. Alternatively, if the span value is 10 :g/scm, the calibration error test results are also acceptable if the absolute value of the difference between the monitor response value and the reference value, *R-A* in Equation A-5 of this appendix, is # 1.0 :g/scm.

3.2 Linearity Check

* * * * *

(c) For Hg monitors:

(1) The error in linearity for each calibration gas concentration (low-, mid-, and high-levels) shall not exceed or deviate from the reference value by more than 10.0 percent as calculated using equation A-4 of this appendix; or

(2) The absolute value of the difference between the average of the monitor response values and the average of the reference values, *R-A* in equation A-4 of this appendix, shall be less than or equal to 1.0 :g/scm, whichever is less restrictive.

(3) For the 3-level system integrity check required under §75.20(c)(1)(vi), the system measurement error shall not exceed 5.0 percent of the span value at any of the three gas levels.

3.3 Relative Accuracy

* * * * *

3.3.8 Relative Accuracy for Hg Monitoring Systems

The relative accuracy of a Hg concentration monitoring system or a sorbent trap monitoring system shall not exceed

20.0 percent. Alternatively, for affected units where the average of the reference method measurements of Hg concentration during the relative accuracy test audit is less than 5.0 :g/scm, the test results are acceptable if the difference between the mean value of the monitor measurements and the reference method mean value does not exceed 1.0 :g/scm, in cases where the relative accuracy specification of 20.0 percent is not achieved.

3.4 Bias

* * * * *

3.4.3 Hg Monitoring Systems

Mercury concentration monitoring systems and sorbent trap monitoring systems shall not be biased low as determined by the test procedure in section 7.6 of this appendix.

* * * * *

Appendix A to Part 75 [Amended]

37. Appendix A to part 75 is further amended by revising the second sentence in the first paragraph of the introductory text of section 4 and revising the second paragraph of the introductory text of section 4, to read as follows:

<u>4. Data Acquisition and Handling Systems</u>.

* * * * * These systems also shall have the

capability of interpreting and converting the individual output signals from an SO_2 pollutant concentration monitor, a flow monitor, a CO_2 monitor, an O_2 monitor, a NO_x pollutant concentration monitor, a NO_x-diluent CAMS, a moisture monitoring system, a Hg concentration monitoring system, and a sorbent trap monitoring system, to produce a continuous readout of pollutant emission rates or pollutant mass emissions (as applicable) in the appropriate units (e.g., lb/hr, lb/MMBtu, ounces/hr, tons/hr).

Data acquisition and handling systems shall also compute and record monitor calibration error; any bias adjustments to SO_2, NO_x, and Hg pollutant concentration data, flow rate data, Hg emission rate data, or NO_x emission rate data; and all missing data procedure statistics specified in subpart D of this part.

*   *   *   *   *

Appendix A to Part 75 [Amended]

38. Appendix A to part 75 is further amended by adding new section 5.1.9, to read as follows:

<u>5. Calibration Gas</u>.

*   *   *   *   *

5.1.9 Mercury Standards. For 7-day calibration error tests of Hg concentration monitors and for daily calibration error tests of Hg monitors, either elemental Hg standards or a

NIST-traceable source of oxidized Hg may be used. For linearity checks, elemental Hg standards shall be used. For 3-level and single-point system integrity checks under §75.20(c)(1)(vi), sections 6.2(g) and 6.3.1 of this appendix, and sections 2.1.1, 2.2.1 and 2.6 of appendix B to this part, a NIST-traceable source of oxidized Hg shall be used. Alternatively, other NIST-traceable standards may be used for the required checks, subject to the approval of the Administrator.

* * * * *

Appendix A to Part 75 [Amended]

39. Appendix A to part 75 is further amended by:

a. Revising the first sentence of the introductory text to section 6.2;

b. Adding new paragraph (g) to section 6.2;

c. Revising the second sentence of section 6.3.1 and adding a new third sentence;

d. Revising the first sentence of section 6.5;

e. Revising the first sentence of section 6.5(a) and adding a new third sentence;

f. Revising the second sentence of section 6.5(c);

g. Revising section 6.5(g);

h. Revising section 6.5.1(a);

i. Revising section 6.5.1(b);

j. Adding new paragraph (c) to section 6.5.6;

k. Revising the first sentence and adding three sentences at the end of section 6.5.7(a); and

l. Revising sections 6.5.7(b) and 6.5.10.

The revisions read as follows:

6. Certification Tests and Procedures.

* * * * *

6.2 Linearity Check (General Procedures)

Check the linearity of each SO_2, NO_x, CO_2, Hg, and O_2 monitor while the unit, or group of units for a common stack, is combusting fuel at conditions of typical stack temperature and pressure; it is not necessary for the unit to be generating electricity during this test. * * * * *

* * * * *

(g) For Hg monitors, follow the guidelines in section 2.2.3 of this appendix in addition to the applicable procedures in this section 6.2 when performing the 3-level system integrity checks described in §75.20(c)(1)(vi) and section 2.6 of appendix B to this part.

6.3 7-Day Calibration Error Test

6.3.1 Gas Monitor 7-day Calibration Error Test

* * * * * In all other cases, measure the calibration error of each SO_2 monitor, each NO_x monitor, each Hg concentration monitor, and each CO_2 or O_2 monitor

while the unit is combusting fuel (but not necessarily generating electricity) once each day for 7 consecutive operating days according to the following procedures. For Hg monitors, you may perform this test using either elemental Hg standards or a NIST-traceable source of oxidized Hg. * * * * *

* * * * *

6.5 Relative Accuracy and Bias Tests (General Procedures)

Perform the required relative accuracy test audits (RATAs) as follows for each CO_2 emissions concentration monitor (including O_2 monitors used to determine CO_2 emissions concentration), each SO_2 pollutant concentration monitor, each NO_x concentration monitoring system used to determine NO_x mass emissions, each flow monitor, each NO_x-diluent CAMS, each O_2 or CO_2 diluent monitor used to calculate heat input, each Hg concentration monitoring system, each sorbent trap monitoring system, and each moisture monitoring system.

* * * * *

(a) Except as otherwise provided in this paragraph or in § 75.21(a)(5), perform each RATA while the unit (or units, if more than one unit exhausts into the flue) is combusting the fuel that is a normal primary or backup fuel for that unit (for some units, more than one type of fuel may be considered normal, e.g., a unit that combusts gas or oil on a seasonal basis). For units that co-fire fuels as the predominant mode of operation, perform the RATAs while co-firing. For Hg monitoring systems, perform the RATAs while the unit is combusting coal. When relative accuracy test audits are performed on CAMS installed on bypass stacks/ducts, use the fuel normally combusted by the unit (or units, if more than one unit exhausts into the flue) when emissions exhaust through the bypass stack/ducts.

* * * * *

(c) * * * * * For units with add-on SO_2 or NO_x controls or add-on Hg controls that operate continuously rather than seasonally, or for units that need a dual range to record high concentration “spikes” during startup conditions, the low range is considered normal. * * * * *

* * * * *

(g) For each SO_2 or CO_2 emissions concentration monitor, each flow monitor, each CO_2 or O_2 diluent monitor used to determine heat input, each NO_x concentration monitoring system used to determine NO_x mass emissions, as defined in §75.71(a)(2), each moisture monitoring system, each NO_x-diluent CAMS, each Hg concentration monitoring system, and each sorbent trap monitoring system, calculate the relative accuracy, in accordance with section 7.3 or 7.4 of this appendix, as applicable. In addition (except for CO_2, O_2, or moisture monitors), test for bias and determine the appropriate bias adjustment factor, in accordance with sections 7.6.4 and 7.6.5 of this appendix, using the data from the relative accuracy test audits.

6.5.1 Gas and Hg Monitoring System RATAs (Special Considerations)

(a) Perform the required relative accuracy test audits for each SO_2 or CO_2 emissions concentration monitor, each CO_2 or O_2 diluent monitor used to determine heat input, each NO_x-diluent CAMS, each NO_x concentration monitoring system used to determine NO_x mass emissions, as defined in §75.71(a)(2), each Hg concentration monitoring system, and each sorbent trap monitoring system at the normal load level or normal operating level for the unit (or combined units, if common stack), as defined in section 6.5.2.1 of this appendix. If two load levels or operating levels have been designated as normal, the RATAs may be done at either load level.

(b) For the initial certification of a gas or Hg monitoring system and for recertifications in which, in addition to a RATA, one or more other tests are required (i.e., a linearity test, cycle time test, or 7-day calibration error test), EPA recommends that the RATA not be commenced until the other required tests of the CAMS have been passed.

*   *   *   *   *

6.5.6 Reference Method Traverse Point Selection

*   *   *   *   *

(c) For Hg monitoring systems, use the same traverse points that are used for the gas monitor RATAs.

*   *   *   *   *

6.5.7 Sampling Strategy

(a) Conduct the reference method tests so they will yield results representative of the pollutant concentration, emission rate, moisture, temperature, and flue gas flow rate from the unit and can be correlated with the pollutant concentration monitor, CO_2 or O_2 monitor, flow monitor, and SO_2, Hg, or NO_x CAMS measurements. *   *   *   *   * For the RATA of a Hg CAMS using the Ontario Hydro method, or for the RATA of a sorbent trap system (irrespective of the reference method used), the time per run must be long enough to collect a sufficient mass of Hg to analyze. For the RATA of a sorbent trap monitoring system, use the same-size trap that is used for daily operation of the monitoring system. Spike the third section of each sorbent trap with elemental Hg, as described in section 7.1.2 of appendix K to this part. Install a new pair of sorbent traps prior to each test run. For each run, the sorbent trap data shall be validated according to the quality assurance criteria in section 8 of appendix K to this part.

(b) To properly correlate individual SO_2, Hg, or NO_x CAMS data (in lb/MMBtu) and volumetric flow rate data with the reference method data, annotate the beginning and end of each reference method test run (including the exact time of day) on the individual chart recorder(s) or other permanent recording device(s).

* * * * *

6.5.10 Reference Methods

The following methods from appendix A to part 60 of this chapter or their approved alternatives are the reference methods for performing relative accuracy test audits: Method 1 or 1A for siting; Method 2 or its allowable alternatives in appendix A to part 60 of this chapter (except for Methods 2B and 2E) for stack gas velocity and volumetric flow rate; Methods 3, 3A, or 3B for O_2 or CO_2; Method 4 for moisture; Methods 6, 6A, or 6C for SO_2; Methods 7, 7A, 7C, 7D, or 7E for NO_x, excluding the exception in section 5.1.2 of Method 7E; and the Ontario Hydro method or an approved instrumental method for Hg (see §75.22). When using Method 7E for measuring NO_x

concentration, total NO_x, both NO and NO_2, must be measured. Notwithstanding these requirements, Method 20 may be used as the reference method for relative accuracy test audits of NO_x monitoring systems installed on combustion turbines.

* * * * *

Appendix A to Part 75 [Amended]

40. Appendix A to part 75 is further amended by:

a. Revising the title of section 7.3 and the first sentence of the introductory text of section 7.3;

b. Revising the introductory text of section 7.6;

c. Revising the first sentence in paragraph (b) of section 7.6.5 and adding a sentence at the end of paragraph (b); and

d. Revising paragraph (f) in section 7.6.5.

The revisions and additions read as follows:

7. Calculations.

* * * * *

7.3 Relative Accuracy for SO_2 and CO_2 Emissions Concentration Monitors, O_2 Monitors, NO_x Concentration Monitoring Systems, Hg Monitoring Systems, and Flow Monitors

Analyze the relative accuracy test audit data from the reference method tests for SO_2 and CO_2 emissions concentration monitors, CO_2 or O_2 monitors used only for heat input rate determination, NO_x concentration monitoring systems used to determine NO_x mass emissions under subpart H of this part, Hg monitoring systems used to determine Hg mass emissions under subpart I of this part, and flow monitors using the following procedures. * * * * *

* * * * *

7.6 Bias Test and Adjustment Factor

Test the following relative accuracy test audit data sets for bias: SO_2 pollutant concentration monitors; flow monitors; NO_x concentration monitoring systems used to determine NO_x mass emissions, as defined in §75.71(a)(2); NO_x-diluent CAMS, Hg concentration monitoring systems, and sorbent trap monitoring systems, using the procedures outlined in sections 7.6.1 through 7.6.5 of this appendix. For multiple-load flow RATAs, perform a bias test at each load level designated as normal under section 6.5.2.1 of this appendix.

* * * * *

7.6.5 Bias Adjustment

* * * * *

(b) For single-load RATAs of SO_2 pollutant concentration monitors, NO_x concentration monitoring systems, NO_x-diluent monitoring systems, Hg concentration monitoring systems, and sorbent trap monitoring systems, and for the single-load flow RATAs required or allowed under section 6.5.2 of this appendix and sections 2.3.1.3(b) and 2.3.1.3(c) of appendix B to this part, the appropriate BAF is determined directly from the RATA results at normal load, using Equation A-12. * * * * * Similarly, for Hg concentration and sorbent trap monitoring systems, where the average Hg concentration during the RATA is < 5.0 :g/dscm, if the monitoring system meets the normal or the alternative relative accuracy specification in section 3.3.8 of this appendix but fails the bias test, the owner or operator may either use the bias adjustment factor (BAF) calculated from Equation A-12 or may use a default BAF of 1.250 for reporting purposes under this part.

* * * * *

(f) Use the bias-adjusted values in computing substitution values in the missing data procedure, as specified in subpart D of this part, and in reporting the concentration of SO_2 or Hg, the flow rate, the average NO_x emission rate, the unit heat input, and the calculated mass emissions of SO_2 and CO_2 during the quarter and calendar year, as specified in subpart G of this part. In addition, when using a NO_x concentration monitoring system and a flow monitor to calculate NO_x mass emissions under subpart H of this part, or when using a Hg concentration or sorbent trap monitoring system and a flow monitor to calculate Hg mass emissions under subpart I of this part, use bias-adjusted values for NO_x (or Hg) concentration and flow rate in the mass emission calculations and use bias-adjusted NO_x (or Hg) concentrations to compute the appropriate substitution values for NO_x (or Hg) concentration in the missing data routines under subpart D of this part.

* * * * *

41. Appendix B to part 75 is amended by adding sections 1.5 through 1.5.6, to read as follows:

Appendix B to Part 75 – Quality Assurance and Quality Control Procedures

* * * * *

1.5 Requirements for Sorbent Trap Monitoring Systems

1.5.1 Sorbent Trap Identification and Tracking

Include procedures for inscribing or otherwise permanently marking a unique identification number on each sorbent trap, for tracking purposes. Keep records of the ID of the monitoring system in which each sorbent trap is used, and the dates and hours of each Hg collection period.

1.5.2 Monitoring System Integrity and Data Quality

Explain the procedures used to perform the leak checks when a sorbent trap is placed in service and removed from service. Also explain the other QA procedures used to ensure system integrity and data quality, including, but not limited to, dry gas meter calibrations, verification of moisture removal, and ensuring air-tight pump operation. In addition, the QA plan must include the data acceptance and quality control criteria in section 8 of appendix K to this part.

1.5.3 Hg Analysis.

Explain the chain of custody employed in packing, transporting, and analyzing the sorbent traps (see sections 7.2.8 and 7.2.9 in appendix K to this part). Keep records of all Hg analyses. The analyses shall be performed in accordance with the procedures described in section 10 of appendix K to this part.

1.5.4 Laboratory Certification

The QA Plan shall include documentation that the laboratory performing the analyses on the carbon sorbent traps is certified by the International Organization for Standardization (ISO) to have a proficiency that meets the requirements of ISO 17025. Alternatively, if the laboratory performs the spike recovery study described in section 10.3 of appendix K to this part and repeats that procedure annually, ISO certification is not required.

1.5.5 Data Collection Period

State, and provide the rationale for, the minimum acceptable data collection period (e.g., one day, one week, etc.) for the size of sorbent trap selected for the monitoring. Include in the discussion such factors as the Hg concentration in the stack gas, the capacity of the sorbent trap, and the minimum mass of Hg required for the analysis.

1.5.6 Relative Accuracy Test Audit Procedures

Keep records of the procedures and details peculiar to the sorbent trap monitoring systems that are to be followed for relative accuracy test audits, such as sampling and analysis methods.

Appendix B to Part 75 [Amended]

42. Appendix B to part 75 is further amended by:

a. Revising the first sentence in section 2.1.1 and adding a new second sentence;

b. Revising paragraph (a) of section 2.1.4;

c. Revising section 2.2.1;

d. Revising the first sentence of section 2.3.1.1 and adding a new second sentence to paragraph (a);

e. Revising paragraph (a) of section 2.3.1.3;

f. Revising paragraph (i) of section 2.3.2;

g. Revising section 2.3.4;

h. Adding new section 2.6;

i. Revising Figure 1;

j. Revising Figure 2;

The revisions and additions read as follows:

2. Frequency of Testing.

* * * * *

2.1.1 Calibration Error Test

Except as provided in section 2.1.1.2 of this appendix, perform the daily calibration error test of each gas monitoring system (including moisture monitoring systems consisting of wet- and dry-basis O_2 analyzers) and each Hg monitoring system according to the procedures in section 6.3.1 of appendix A to this part, and perform the daily calibration error test of each flow monitoring system according to the procedure in section 6.3.2 of appendix A to this part. For Hg monitors, the daily assessments may be made using either elemental Hg standards or a NIST-traceable source of oxidized Hg. * * * * *

* * * * *

2.1.4 Data Validation

(a) An out-of-control period occurs when the calibration error of an SO_2 or NO_x pollutant concentration monitor exceeds 5.0 percent of the span value, when the calibration error of a CO_2 or O_2 monitor (including O_2 monitors used to measure CO_2 emissions or percent moisture) exceeds 1.0 percent CO_2 or O_2, or when the calibration error of a flow monitor or a moisture sensor exceeds 6.0 percent of the span value, which is twice the applicable specification of appendix A to this part. Notwithstanding, a differential pressure-type flow monitor for which the calibration error exceeds 6.0 percent of the span value shall not be considered out-of-control if *R-A*, the absolute value of the difference between the monitor response and the reference value in Equation A-6 of appendix A to this part, is $\leq$ 0.02 inches of water. In addition, an SO_2 or NO_x monitor for which the calibration error exceeds 5.0 percent of the span value shall not be considered out-of-control if *R-A* in Equation A-6 does not exceed 5.0 ppm (for span values $\leq$ 50 ppm), or if *R-A* does not exceed 10.0 ppm (for span values > 50 ppm, but $\leq$ 200 ppm). For a Hg monitor, an out-of-control period occurs when the calibration error exceeds 5.0% of the span value. Notwithstanding, the Hg monitor shall not be considered out-of-control if *R-A* in Equation A-6 does not exceed 1.0 :g/scm. The out-of-control period begins upon failure of the calibration error test and ends upon completion of a successful calibration error test. Note, that if a failed calibration, corrective action, and successful calibration error test occur within the same hour, emission data for that hour recorded by the monitor after the successful calibration error test may be used for reporting purposes, provided that two or more valid readings are obtained as required by §75.10. A NO_x-diluent CAMS is considered out-of-control if the calibration error of either component monitor exceeds twice the applicable performance specification in appendix A to this part. Emission data shall not be reported from an out-of-control monitor.

* * * * *

2.2.1 Linearity Check

Unless a particular monitor (or monitoring range) is exempted under this paragraph or under section 6.2 of appendix A to this part, perform a linearity check, in accordance with the procedures in section 6.2 of appendix A to this part, for each primary and redundant backup SO_2, Hg, and NO_x pollutant concentration monitor and each primary and redundant backup CO_2 or O_2 monitor (including O_2 monitors used to measure CO_2 emissions or to continuously monitor moisture) at least once during each QA operating quarter, as defined in §72.2 of this chapter. For Hg monitors, perform the linearity checks using elemental Hg standards. Alternatively, you may perform 3-level system integrity checks at the same three calibration gas levels (i.e., low, mid, and high), using a NIST-traceable source of oxidized Hg. If you choose this option, the performance specification in section 3.2(c)(3) of appendix A to this part must be met at each gas level. For units using both a low and high span value, a linearity check is required only on the range(s) used to record and report emission data during the QA operating quarter. Conduct the linearity checks no less than 30 days apart, to the extent practicable. The data validation procedures in section 2.2.3(e) of this appendix shall be followed.

* * * * *

2.3.1.1 Standard RATA Frequencies

(a) Except for Hg monitoring systems and as otherwise specified in §75.21(a)(6) or (a)(7) or in section 2.3.1.2 of this appendix, perform relative accuracy test audits semiannually, i.e., once every two successive QA operating quarters (as defined in §72.2 of this chapter) for each primary and redundant backup SO_2 pollutant concentration monitor, flow monitor, CO_2 emissions concentration monitor (including O_2 monitors used to determine CO_2 emissions), CO_2 or O_2 diluent monitor used to determine heat input, moisture monitoring system, NO_x concentration monitoring system, NO_x-diluent CAMS, or SO_2-diluent CAMS. For each primary and redundant backup Hg concentration monitoring system and each sorbent trap monitoring system, RATAs shall be performed annually, i.e., once every four successive QA operating quarters (as defined in §72.2 of this chapter).

*   *   *   *   *

2.3.1.3 RATA Load (or Operating) Levels and Additional RATA Requirements

(a) For SO_2 pollutant concentration monitors, CO_2 emissions concentration monitors (including O_2 monitors used to determine CO_2 emissions), CO_2 or O_2 diluent monitors used to determine heat input, NO_x concentration monitoring systems, Hg concentration monitoring systems, sorbent trap monitoring systems, moisture monitoring systems, and NO_x-diluent monitoring systems, the required semiannual or annual RATA tests shall be done at the load level (or operating level) designated as normal under section 6.5.2.1(d) of appendix A to this part. If two load levels (or operating levels) are designated as normal, the required RATA(s) may be done at either load level (or operating level).

*   *   *   *   *

2.3.2 Data Validation

*   *   *   *   *

(i) Each time that a hands-off RATA of an SO_2 pollutant concentration monitor, a NO_x-diluent monitoring system, a NO_x concentration monitoring system, a Hg concentration monitoring system, a sorbent trap monitoring system, or a flow monitor is passed, perform a bias test in accordance with section 7.6.4 of appendix A to this part. Apply the appropriate bias adjustment factor to the reported SO_2, Hg, NO_x, or flow rate data, in accordance with section 7.6.5 of appendix A to this part.

* * * * *

2.3.4 Bias Adjustment Factor

Except as otherwise specified in section 7.6.5 of appendix A to this part, if an SO_2 pollutant concentration monitor, flow monitor, NO_x CAMS, NO_x concentration monitoring system used to calculate NO_x mass emissions, Hg concentration monitoring system, or sorbent trap monitoring system fails the bias test specified in section 7.6 of appendix A to this part, use the bias adjustment factor given in Equations A-11 and A-12 of appendix A to this part, or the allowable alternative BAF specified in section 7.6.5(b) of appendix A to this part, to adjust the monitored data.

* * * * *

2.6 System Integrity Checks for Hg Monitors

For each Hg concentration monitoring system (except for a Hg monitor that does not have a converter), perform a single-point system integrity check weekly, i.e., at least once every 168 unit or stack operating hours, using a NIST-traceable source of oxidized Hg. Perform this check using a mid- or high-level gas concentration, as defined in section 5.2 of appendix A to this part. The performance specification in section 3.2(c)(3) of appendix A to this part must be met, otherwise the monitoring system is considered out-of-control until a subsequent system integrity check is passed. This weekly check is not required if the daily calibration assessments in section 2.1.1 of this appendix are performed using a NIST-traceable source of oxidized Hg.

FIGURE 1 TO APPENDIX B OF PART 75--QUALITY ASSURANCE TEST REQUIREMENTS

Test	QA test frequency requirements[*]				
	Daily	Weekly	Quarterly	Semiannual	Annual
Calibration Error or System Integrity Check[**] (2 pt.)	T				
Interference Check (flow)	T				
Flow-to-Load Ratio			T		
Leak Check (DP flow monitors)			T		
Linearity Check or System Integrity Check[**] (3-point)			T		
Single-point System Integrity Check[**]		T			
RATA (SO_2, NO_x, CO_2, O_2, H_2O)[1]				T	
RATA (all Hg monitoring systems)					T

RATA (flow)[1,2]				**T**	

[*] “Daily” means operating days, only. “Weekly” means once every 168 unit or stack operating hours. “Quarterly” means once every QA operating quarter. “Semiannual” means once every two QA operating quarters. “Annual” means once every four QA operating quarters.

[**] The system integrity check applies only to Hg monitors with converters. The single-point weekly check is not required if daily system integrity checks are performed using a NIST-traceable source of oxidized Hg.

* * * * *

FIGURE 2 TO APPENDIX B OF PART 75 -- RELATIVE ACCURACY TEST

FREQUENCY INCENTIVE SYSTEM

RATA	Semiannual[w] (percent)	Annual[w]
SO_2 or NO_x[y]	7.5% < RA # 10.0% or ± 15.0 ppm[x]	RA # 7.5% or ± 12.0 ppm[x]
SO_2-diluent	7.5% < RA # 10.0% or ± 0.030 lb/MMBtu[x]	RA # 7.5% or ±0. 025 lb/MMBtu[x]
NO_x-diluent	7.5% < RA # 10.0% or ± 0.020 lb/MMBtu[x]	RA # 7.5% or ±0. 015 lb/MMBtu[x]
Flow	7.5% < RA # 10.0% or ± 1.5 fps[x]	RA # 7.5%
CO_2 or O_2	7.5% < RA # 10.0% or ± 1.0% CO_2/O_2[x]	RA # 7.5% or ± 0.7% CO_2/O_2[x]
Hg[x]	--------	RA ≤ 20.0% or ± 1.0 :g/dscm[x]
Moisture	7.5% < RA # 10.0% or ± 1.5% H_2O[x]	RA # 7.5% or ± 1.0% H_2O[x]

[w] The deadline for the next RATA is the end of the second (if semiannual) or fourth (if annual) successive QA operating quarter following the quarter in which the CAMS was last tested. Exclude calendar quarters with fewer than 168 unit operating hours (or, for common stacks and bypass stacks, exclude quarters with fewer than 168 stack operating hours) in determining the RATA deadline. For SO_2 monitors, QA operating quarters in which only very low sulfur fuel as defined in §72.2, is combusted may also be excluded. However, the exclusion of calendar quarters is limited as follows: the deadline for the next RATA shall be no more

than 8 calendar quarters after the quarter in which a RATA was last performed.

[x] The difference between monitor and reference method mean values applies to moisture monitors, CO_2, and O_2 monitors, low emitters of SO_2, NO_x, or Hg, and low flow, only. The specifications for Hg monitors also apply to sorbent trap monitoring systems.

[Y] A NO_x concentration monitoring system used to determine NO_x mass emissions under §75.71.

* * * * *

43. Appendix F to part 75 is amended by adding section 9, to read as follows:

Appendix F to Part 75 – Conversion Procedures

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9. Procedures for Hg Mass Emissions.

9.1 Use the procedures in this section to calculate the hourly Hg mass emissions (in ounces) at each monitored location, for the affected unit or group of units that discharge through a common stack.

9.1.1 To determine the hourly Hg mass emissions when using a Hg concentration monitoring system that measures on a wet basis and a flow monitor, use the following equation:

$$M_h = K\,C_h\,Q_h\,t_h \qquad \text{(Eq. F-28)}$$

Where:

M_h = Hg mass emissions for the hour, rounded off to three decimal places (ounces).

K = Units conversion constant, 9.978×10^{-10} oz-scm/:g-scf

C_h = Hourly Hg concentration, wet basis, adjusted for bias if the bias-test procedures in appendix A to this part show that a bias-adjustment factor is necessary (:g/wscm).
Q_h = Hourly stack gas volumetric flow rate, adjusted for bias, where the bias-test procedures in appendix A to this part shows a bias-adjustment factor is necessary (scfh)
t_h = Unit or stack operating time, as defined in §72.2 (hr)

9.1.2 To determine the hourly Hg mass emissions when using a Hg concentration monitoring system that measures on a dry basis or a sorbent trap monitoring system and a flow monitor, use the following equation:

$$M_h = K\, C_h\, Q_h\, t_h\, (1-B_{ws}) \qquad \text{(Eq. F-29)}$$

Where:

M_h = Hg mass emissions for the hour, rounded off to three decimal places (ounces).
K = Units conversion constant, 9.978×10^{-10} oz-scm/:g-scf
C_h = Hourly Hg concentration, dry basis, adjusted for bias if the bias-test procedures in appendix A to this part show that a bias-adjustment factor is necessary (:g/dscm). For sorbent trap systems, a single value of C_h (i.e., a flow-proportional average concentration for the data collection period), is applied to each hour in the data collection period, for a particular pair of traps.
Q_h = Hourly stack gas volumetric flow rate, adjusted for bias, where the bias-test procedures in appendix A to this part shows a bias-adjustment factor is necessary (scfh)
B_{ws} = Moisture fraction of the stack gas, expressed as a decimal (equal to % H_2O ÷ 100)
t_h = Unit or stack operating time, as defined in

§72.2 (hr)

9.1.3 For units that are demonstrated under §75.81(d) to emit less than 464 ounces of Hg per year, and for which the owner or operator elects not to continuously monitor the Hg concentration, calculate the hourly Hg mass emissions using Equation F-28 in section 9.1.1 of this appendix, except that "C_h" shall be the applicable default Hg concentration from §75.81(c), (d), or (e), expressed in :g/scm. Correction for the stack gas moisture content is not required when this methodology is used.

9.2 Use the following equation to calculate quarterly and year-to-date Hg mass emissions in ounces:

$$M_{time\ period} = \sum_{h=1}^{n} M_h \qquad \text{(Eq. F-30)}$$

Where:

$M_{time\ period}$ = Hg mass emissions for the given time period i.e., quarter or year-to-date, rounded to the nearest thousandth (ounces).

M_h = Hg mass emissions for the hour, rounded to three decimal places (ounces).

n = The number of hours in the given time period (quarter or year-to-date).

9.3 If heat input rate monitoring is required, follow the applicable procedures for heat input apportionment and summation in sections 5.3, 5.6 and 5.7 of this appendix.

44. Part 75 is amended by adding Appendix K, to read

as follows:

Appendix K to Part 75 — Quality Assurance and Operating Procedures for Sorbent Trap Monitoring Systems

1.0 Scope and Application.

This appendix specifies sampling, and analytical, and quality-assurance criteria and procedures for the performance-based monitoring of vapor-phase mercury (Hg) emissions in combustion flue gas streams, using a sorbent trap monitoring system (as defined in §72.2 of this chapter). The principle employed is continuous sampling using in-stack sorbent media coupled with analysis of the integrated samples. The performance-based approach of this appendix allows for use of various suitable sampling and analytical technologies while maintaining a specified and documented level of data quality through performance criteria. Persons using this appendix should have a thorough working knowledge of Methods 1, 2, 3, 4 and 5 in appendices A-1 through A-3 to part 60 of this chapter, as well as the determinative technique selected for analysis.

1.1 Analytes. The analyte measured by these procedures and specifications is total vapor-phase Hg in the flue gas, which represents the sum of elemental Hg (Hg^0, CAS Number 7439-97-6) and oxidized forms of Hg, in mass concentration units of micrograms per dry standard cubic meter (:g/dscm).

1.2 Applicability. These performance criteria and procedures are applicable to monitoring of vapor-phase Hg emissions under relatively low-dust conditions (i.e., sampling in the stack after all pollution control devices), from coal-fired electric utility steam generators which are subject to subpart I of this part. Individual sample collection times can range from 30 minutes to several days in duration, depending on the Hg concentration in the stack. The monitoring system must achieve the performance criteria specified in Section 8 of this appendix and the sorbent media capture ability must not be exceeded. The sampling rate must be maintained at a constant proportion to the total stack flowrate to ensure representativeness of the sample collected. Failure to achieve certain performance criteria will result in invalid Hg emissions monitoring data.

2.0 Principle.

Known volumes of flue gas are extracted from a stack or duct through paired, in-stack, pre-spiked sorbent media traps at an appropriate nominal flow rate. Collection of Hg on the sorbent media in the stack mitigates potential loss of Hg during transport through a probe/sample line. Paired train sampling is required to determine measurement precision and verify acceptability of the measured emissions data.

The sorbent traps are recovered from the sampling system, prepared for analysis, as needed, and analyzed by any suitable determinative technique that can meet the performance criteria. A section of each sorbent trap is spiked with Hg^0 prior to sampling. This section is analyzed separately and the recovery value is used to correct the individual Hg sample for measurement bias.

3.0 Clean Handling and Contamination.

To avoid Hg contamination of the samples, special attention should be paid to cleanliness during transport, field handling, sampling, recovery, and laboratory analysis, as well as during preparation of the sorbent cartridges. Collection and analysis of blank samples (field, trip, lab) is useful in verifying the absence of contaminant Hg.

4.0 Safety.

4.1 Site hazards. Site hazards must be thoroughly considered in advance of applying these procedures/specifications in the field; advance coordination with the site is critical to understand the conditions and applicable safety policies. At a minimum, portions of the sampling system will be hot, requiring appropriate gloves, long sleeves, and caution in handling this equipment.

4.2 Laboratory safety policies. Laboratory safety policies should be in place to minimize risk of chemical exposure and to properly handle waste disposal. Personnel shall wear appropriate laboratory attire according to a Chemical Hygiene Plan established by the laboratory.

4.3 Toxicity or carcinogenicity. The toxicity or carcinogenicity of any reagents used must be considered. Depending upon the sampling and analytical technologies selected, this measurement may involve hazardous materials, operations, and equipment and this appendix does not address all of the safety problems associated with implementing this approach. It is the responsibility of the user to establish appropriate safety and health practices and determine the applicable regulatory limitations prior to performance. Any chemical should be regarded as a potential health hazard and exposure to these compounds should be minimized. Chemists should refer to the Material Safety Data Sheet (MSDS) for each chemical used.

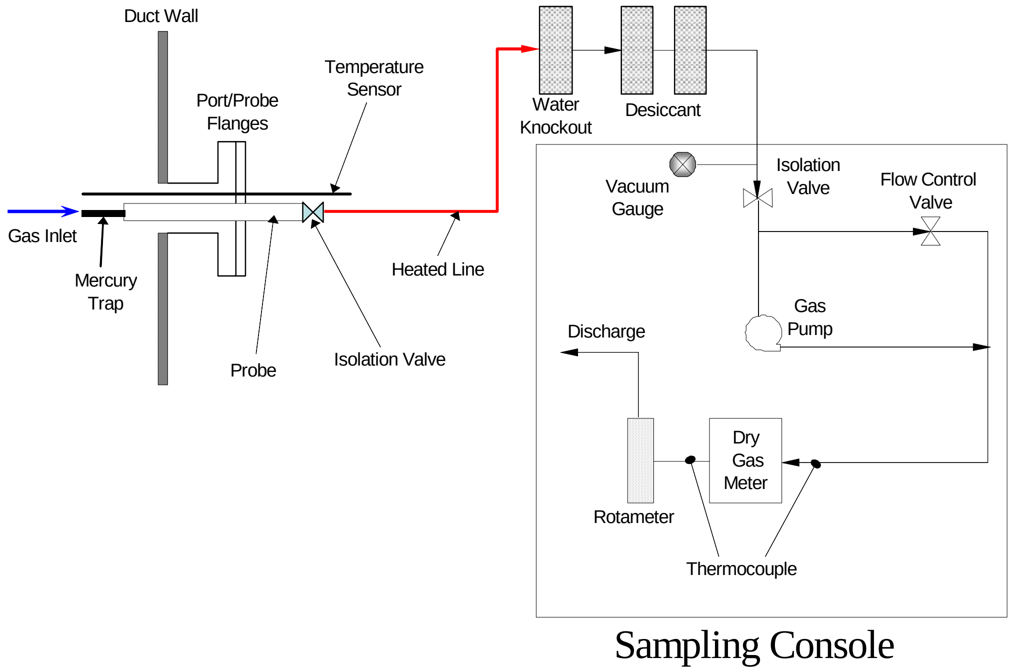
4.4 Wastes. Any wastes generated by this procedure must be disposed of according to a hazardous materials management plan that details and tracks various waste streams and disposal procedures.

5.0 Equipment and Supplies.

The following list is presented as an example of key equipment and supplies likely required to perform vapor-phase Hg monitoring using a sorbent trap monitoring system. It is recognized that additional equipment and supplies may be needed. Collection of paired samples is required. Also required are a certified stack gas volumetric flow monitor that meets the requirements of §75.10 and an acceptable means of correcting for the stack gas moisture content, i.e., either by using data from a certified continuous moisture monitoring system or by using an approved default moisture value (see §§75.11(b) and 75.12(b)).

5.1 Sorbent Trap Monitoring System. A typical sorbent trap monitoring system is shown in Figure K-1. The monitoring system shall include the following components:

Figure K-1. Typical Sorbent Trap Monitoring System



5.1.1 Sorbent Traps. The sorbent media used to collect Hg must be configured in a trap with three distinct and identical segments or sections, connected in series, that are amenable to separate analyses. Section 1 is designated for primary capture of gaseous Hg. Section 2 is designated as a backup section for determination of vapor-phase Hg breakthrough. Section 3 is designated for QA/QC purposes where this section shall be spiked with an known amount of gaseous Hg^0 prior to sampling and later analyzed to determine recovery efficiency. The sorbent media may be any collection material (e.g., carbon, chemically-treated filter, etc.) capable of quantitatively capturing and recovering for subsequent analysis, all gaseous forms of Hg for the intended application. Selection of the sorbent media shall be based on the material’s ability to achieve the performance criteria contained in Section 8 of this appendix as well as the sorbent’s vapor-phase Hg capture efficiency for the emissions matrix and the expected sampling duration at the test site. The sorbent media must be obtained from a source that can demonstrate the quality assurance and control necessary to ensure consistent reliability. The paired sorbent traps are supported on a probe (or probes) and inserted directly into the flue gas stream.

5.1.2 Sampling Probe Assembly. Each probe assembly shall have a leak-free attachment to the sorbent trap(s). Each sorbent trap must be mounted at the entrance of or within the probe such that the gas sampled enters the trap directly. Each probe/sorbent trap assembly must be heated to a temperature sufficient to prevent liquid condensation in the sorbent trap(s). Auxiliary heating is required only where the stack temperature is too low to prevent condensation. Use a calibrated thermocouple to monitor the stack temperature. A single probe capable of operating the paired sorbent traps may be used. Alternatively, individual probe/sorbent trap assemblies may be used, provided that the individual sorbent traps are co-located to ensure representative Hg monitoring and are sufficiently separated to prevent aerodynamic interference.

5.1.3 Moisture Removal Device. A robust moisture removal device or system, suitable for continuous duty (such as a Peltier cooler), shall be used to remove water vapor from the gas stream prior to entering the dry gas meter.

5.1.4 Vacuum Pump. Use a leak-tight, vacuum pump capable of operating within the candidate system's flow range.

5.1.5 Dry Gas Meter. A dry gas meter shall be used to determine total sample volume. The meter must be sufficiently accurate to measure the total sample volume within 2 percent, must be calibrated at the selected flow rate and conditions actually encountered during sampling, and shall be equipped with a temperature sensor capable of measuring typical meter temperatures accurately to within 3/C for correcting final sample volume.

5.1.6 Sample Flow Rate Meter and Controller. Use a flow rate indicator and controller for maintaining necessary sampling flow rates.

5.1.7 Temperature Sensor. Same as Section 6.1.1.7 of Method 5 in appendix A-3 to part 60 of this chapter.

5.1.8 Barometer. Same as Section 6.1.2 of Method 5 in appendix A-3 to part 60 of this chapter.

5.1.9 Data Logger (optional). Device for recording associated and necessary ancillary information (e.g., temperatures, pressures, flow, time, etc).

5.2 Gaseous Hg^0 Sorbent Trap Spiking System. A known mass of gaseous Hg^0 must be spiked onto section 3 of each sorbent trap prior to sampling. Any approach capable of quantitatively delivering known masses of Hg^0 onto sorbent traps is acceptable. Several technologies or devices are available to meet this objective. Their practicality is a function of Hg mass spike levels. For low levels, NIST-certified or NIST-traceable gas generators or tanks may be suitable, but will likely require long preparation times. A more practical, alternative system, capable of delivering almost any mass required, makes use of NIST-certified or NIST-traceable Hg salt solutions (e.g., $Hg(NO_3)_2$). With this system, an aliquot of known volume and concentration is added to a reaction vessel containing a reducing agent (e.g., stannous chloride); the Hg salt solution is reduced to Hg^0 and purged onto section 3 of the sorbent trap using an impinger sparging system.

5.3 Sample Analysis Equipment. Any analytical system capable of quantitatively recovering and quantifying total gaseous Hg from sorbent media is acceptable provided that the analysis can meet the performance criteria in Section 8 of this procedure. Candidate recovery techniques include leaching, digestion, and thermal desorption. Candidate analytical techniques include ultraviolet atomic fluorescence (UVAF); ultraviolet atomic absorption (UVAA), with and without gold trapping; and *in situ* X-ray fluorescence (XRF) analysis.

6.0 Reagents and Standards.

Only NIST-certified or NIST-traceable calibration gas standards and reagents shall be used for the tests and procedures required under this appendix.

7.0 Sample Collection and Transport.

7.1 Pre-Test Procedures.

7.1.1 Selection of Sampling Site. Sampling site information should be obtained in accordance with Method 1 in appendix A-1 to part 60 of this chapter. Identify a monitoring location representative of source Hg emissions. Locations shown to be free of stratification through measurement traverses for gases such as SO_2 and NO_x may be one such approach. An estimation of the expected stack Hg concentration is required to establish a target sample flow rate, total gas sample volume, and the mass of Hg^0 to be spiked onto section 3 of each sorbent trap.

7.1.2 Pre-sampling Spiking of Sorbent Traps. Based on the estimated Hg concentration in the stack, the target sample rate and the target sampling duration, calculate the expected mass loading for section 1 of each sorbent trap (for an example calculation, see section 11.1 of this appendix). The pre-sampling spike to be added to section 3 of each sorbent trap shall be within ± 50 percent of the expected section 1 mass loading. Spike section 3 of each sorbent trap at this level, as described in section 5.2 of this appendix. For each sorbent trap, keep an official record of the mass of Hg^0 added to section 3. This record shall include, at a minimum, the ID number of the trap, the date and time of the spike, the name of the analyst performing the procedure, the mass of Hg^0 added to section 3 of the trap (:g), and the supporting calculations. This record shall be maintained in a format suitable for inspection and audit and shall be made available to the regulatory agencies upon request.

7.1.3 Pre-test Leak Check. Perform a leak check with the sorbent traps in place. Draw a vacuum in each sample train. Adjust the vacuum in the sample train to ~15" Hg. Using the dry gas meter, determine leak rate. The leakage rate must not exceed 4 percent of the target sampling rate. Once the leak check passes this criterion, carefully release the vacuum in the sample train then seal the sorbent trap inlet until the probe is ready for insertion into the stack or duct.

7.1.4 Determination of Flue Gas Characteristics. Determine or measure the flue gas measurement environment characteristics (gas temperature, static pressure, gas velocity, stack moisture, etc.) in order to determine ancillary requirements such as probe heating requirements (if any), initial sample rate, proportional sampling conditions, moisture management, etc.

7.2 Sample Collection.

7.2.1 Remove the plug from the end of each sorbent trap and store each plug in a clean sorbent trap storage container. Remove the stack or duct port cap and insert the probe(s). Secure the probe(s) and ensure that no leakage occurs between the duct and environment.

7.2.2 Record initial data including the sorbent trap ID, start time, starting dry gas meter readings, initial temperatures, set-points, and any other appropriate information.

7.2.3 Flow Rate Control. Set the initial sample flow rate at the target value from section 7.1.1 of this appendix. Record the initial dry gas meter reading, stack temperature, meter temperatures, etc. Then, for every operating hour during the sampling period, record the date and time, the sample flow rate, the gas meter reading, the stack temperature, the flow meter temperatures, temperatures of heated equipment such as the vacuum lines and the probes (if heated), and the sampling system vacuum readings. Also record the stack gas flow rate, as measured by the certified flow monitor, and the ratio of the stack gas flow rate to the sample flow rate. Adjust the sampling flow rate to maintain proportional sampling, i.e., keep the ratio of the stack gas flow rate to sample flow rate constant, to within ±25 percent of the reference ratio from the first hour of the data collection period (see section 11 of this appendix).

7.2.4 Stack Gas Moisture Determination. Determine stack gas moisture using a continuous moisture monitoring system, as described in §75.11(b) or §75.12(b). Alternatively, the owner or operator may use the appropriate fuel-specific moisture default value provided in §75.11 or §75.12, or a site-specific moisture default value approved by petition under §75.66.

7.2.5 Essential Operating Data. Obtain and record any essential operating data for the facility during the test period, e.g., the barometric pressure must be obtained for correcting sample volume to standard conditions. At the end of the data collection period, record the final dry gas meter reading and the final values of all other essential parameters.

7.2.6 Post Test Leak Check. When sampling is completed, turn off the sample pump, remove the probe/sorbent trap from the port and carefully re-plug the end of each sorbent trap. Perform a leak check with the sorbent traps in place, at the maximum vacuum reached during the sampling period. Use the same general approach described in section 7.1.3 of this appendix. Record the leakage rate and vacuum. The leakage rate must not exceed 4 percent of the average sampling rate for the data collection period. Following the leak check, carefully release the vacuum in the sample train.

7.2.7 Sample Recovery. Recover each sampled sorbent trap by removing it from the probe, sealing both ends. Wipe any deposited material from the outside of the sorbent trap. Place the sorbent trap into an appropriate sample storage container and store/preserve in appropriate manner.

7.2.8 Sample Preservation, Storage, and Transport. While the performance criteria of this approach provide for verification of appropriate sample handling, it is still important that the user consider, determine, and plan for suitable sample preservation, storage, transport, and holding times for these measurements. Therefore, procedures in ASTM WK223 “Guide for Packaging and Shipping Environmental Samples for Laboratory Analysis” shall be followed for all samples.

7.2.9 Sample Custody. Proper procedures and documentation for sample chain of custody are critical to ensuring data integrity. The chain of custody procedures in ASTM D4840-99 “Standard Guide for Sampling Chain-of-Custody Procedures” shall be followed for all samples (including field samples and blanks).

8.0 Quality Assurance and Quality Control.

Table K-1 summarizes the QA/QC performance criteria that are used to validate the Hg emissions data from sorbent trap monitoring systems, including the relative accuracy test audit (RATA) requirement (see §75.20(c)(9), section 6.5.7 of appendix A to this part, and section 2.3 of appendix B to this part). Except as provided in §75.15(h) and as otherwise indicated in Table K-1, failure to achieve these performance criteria will result in invalidation of Hg emissions data.

Table K-1. Quality Assurance/Quality Control Criteria for Sorbent Trap Monitoring Systems

QA/QC Test or Specification	Acceptance Criteria	Frequency	Consequences if Not Met
Pre-test leak check	≤4% of target sampling rate	Prior to sampling	Sampling shall not commence

			until the leak check is passed
Post-test leak check	≤4% of average sampling rate	After sampling	Sample invalidated**
Ratio of stack gas flow rate to sample flow rate	Maintain within ± 25% of initial ratio from first hour of data collection period	Every hour throughout data collection period	Case-by-case evaluation
Sorbent trap section 2 breakthrough	≤ 5% of Section 1 Hg mass	Every sample	Sample invalidated**
Paired sorbent trap agreement	#10% Relative Deviation (RD)	Every sample	Sample invalidated**
Spike recovery study	Average recovery between 85% and 115% for each of the 3 spike concentration levels	Prior to analyzing field samples and prior to use of new sorbent media	Field samples shall not be analyzed until the percent recovery criteria has been met
Multipoint analyzer calibration	Each analyzer reading within ± 10% of true value <u>and</u> r^2 $0.99	On the day of analysis, before analyzing any samples	Recalibrate until successful
Analysis of independent calibration standard	Within ± 10% of true value	Following daily calibration, prior to analyzing field samples	Recalibrate and repeat independent standard analysis until successful
Spike recovery from section 3 of sorbent trap	75-125% of spike amount	Every sample	Sample invalidated**
RATA	RA ≤ 20.0%	For initial	Data from the system are

	or Mean difference ≤ 1.0 :g/dscm for low emitters	certification and annually thereafter	invalidated until a RATA is passed
Dry gas meter calibration (At 3 orifice settings initially, and 1 setting thereafter)	Calibration factor (Y) within ± 5% of average value from the initial (3-point) calibration	Prior to initial use and at least quarterly thereafter	Recalibrate the meter at three orifice settings to determine a new value of Y
Temperature sensor calibration	Absolute temperature measured by sensor within ±1.5% of a reference sensor	Prior to initial use and at least quarterly thereafter	Recalibrate. Sensor may not be used until specification is met.
Barometer calibration	Absolute pressure measured by instrument within ± 10 mm Hg of reading with a mercury barometer	Prior to initial use and at least quarterly thereafter	Recalibrate. Instrument may not be used until specification is met

** And data from the pair of sorbent traps are also invalidated

9.0 Calibration and Standardization.

9.1 Only NIST-certified and NIST-traceable calibration standards (i.e., calibration gases, solutions, etc.) shall be used for the spiking and analytical procedures in this appendix.

9.2 Dry Gas Meter Calibration. Prior to its initial use, perform a full calibration of the metering system at three orifice settings to determine the average dry gas meter coefficient (Y), as described in section 10.3.1 of

Method 5 in appendix A-3 to part 60 of this chapter. Thereafter, recalibrate the metering system quarterly at one intermediate orifice setting, as described in section 10.3.2 of Method 5 in appendix A-3 to part 60 of this chapter. If a quarterly recalibration shows that the value of Y has changed by more than 5 percent, repeat the full calibration of the metering system to determine a new value of Y.

9.3 Thermocouples and Other Temperature Sensors. Use the procedures and criteria in Section 10.3 of Method 2 in appendix A-1 to part 60 of this chapter to calibrate in-stack temperature sensors and thermocouples. Dial thermometers shall be calibrated against mercury-in-glass thermometers. Calibrations must be performed prior to initial use and at least quarterly thereafter. At each calibration point, the absolute temperature measured by the temperature sensor must agree to within ± 1.5 percent of the temperature measured with the reference sensor, otherwise the sensor may not continue to be used.

9.4 Barometer. Calibrate against a mercury barometer. Calibration must be performed prior to initial use and at least quarterly thereafter. At each calibration point, the absolute pressure measured by the barometer must agree to within ± 10 mm Hg of the pressure measured by the mercury barometer, otherwise the barometer may not continue to be used.

9.5 Other Sensors and Gauges. Calibrate all other sensors and gauges according to the procedures specified by the instrument manufacturer(s).

9.6 Analytical System Calibration. See section 10.1 of this appendix.

10.0 Analytical Procedures.

The analysis of the Hg samples may be conducted using any instrument or technology capable of quantifying total Hg from the sorbent media and meeting the performance criteria in section 8 of this appendix.

10.1 Analyzer System Calibration. Perform a multipoint calibration of the analyzer at three or more upscale points over the desired quantitative range (multiple calibration ranges shall be calibrated, if necessary). The field samples analyzed must fall within a calibrated, quantitative range and meet the necessary performance criteria. For samples that are suitable for aliquotting, a series of dilutions may be needed to ensure that the samples fall within a calibrated range. However, for sorbent media samples that are consumed during analysis (e.g., thermal desorption techniques), extra care must be taken to ensure that the analytical system is appropriately calibrated prior to sample analysis. The calibration curve range(s) should be determined based on the anticipated level of Hg mass on the sorbent media. Knowledge of estimated stack Hg concentrations and total sample volume may be required prior to analysis. The calibration curve for use with the various analytical techniques (e.g., UV AA, UV AF, and XRF) can be generated by directly introducing standard solutions into the analyzer or by spiking the standards onto the sorbent media and then introducing into the analyzer after preparing the sorbent/standard according to the particular analytical technique. For each calibration curve, the value of the square of the linear correlation coefficient, i.e., r^2, must be $\geq$ 0.99, and the analyzer response must be within ± 10 percent of reference value at each upscale calibration point. Calibrations must be performed on the day of the analysis, before analyzing any of the samples. Following calibration, an independently prepared standard (not from same calibration stock solution) shall be analyzed. The measured value of the independently prepared standard must be within ± 10 percent of the expected value.

10.2 Sample Preparation. Carefully separate the three sections of each sorbent trap. Combine for analysis all materials associated with each section, i.e., any supporting substrate that the sample gas passes through prior to entering a media section (e.g., glass wool, polyurethane foam, etc.) must be analyzed with that segment.

10.3 Spike Recovery Study. Before analyzing any field samples, the laboratory must demonstrate the ability to recover and quantify Hg from the sorbent media by performing the following spike recovery study for sorbent media traps spiked with elemental mercury.

Using the procedures described in sections 5.2 and 11.1 of this appendix, spike the third section of nine sorbent traps with gaseous Hg^0, i.e., three traps at each of three different mass loadings, representing the range of masses anticipated in the field samples. This will yield a 3 x 3 sample matrix. Prepare and analyze the third section of each spiked trap, using the techniques that will be used to prepare and analyze the field samples. The average recovery for each spike concentration must be between 85 and 115 percent. If multiple types of sorbent media are to be analyzed, a separate spike recovery study is required for each sorbent material. If multiple ranges are calibrated, a separate spike recovery study is required for each range.

10.4 Field Sample Analyses. Analyze the sorbent trap samples following the same procedures that were used for conducting the spike recovery study. The three sections of the sorbent trap must be analyzed separately (i.e., section 1, then section 2, then section 3). Quantify the mass of total Hg for each section based on analytical system response and the calibration curve from section 10.1 of this appendix. Determine the spike recovery from sorbent trap section 3. Pre-sampling spike recoveries must be between 75 and 125 percent. To report final Hg mass, normalize the data for sections 1 and 2 based on the sample-specific spike recovery, and add the normalized masses together.

11.0 Calculations and Data Analysis.

11.1 Calculation of Pre-sampling Spiking Level. Determine sorbent trap section 3 spiking level using estimates of the stack Hg concentration, the target sample flow rate, and the expected sample duration. First, calculate the expected Hg mass that will be collected in section 1 of the trap. The pre-sampling spike must be within ± 50 percent of this mass. Example calculation: For an estimated stack Hg concentration of 5 ug/m^3, a target sample rate of 0.30 L/min, and a sample duration of 5 days:

$$(0.30\ \text{L/min})(1440\ \text{min/day})(5\ \text{days})(10^{-3}\text{m}^3/\text{liter})(5{:}\text{g/m}^3)$$

$$= 10.8\ {:}\text{g}$$

A pre-sampling spike of 10.8 ug ±50 percent is, therefore, appropriate.

11.2 Calculations for Flow-Proportional Sampling. For the first hour of the data collection period, determine the reference ratio of the stack gas volumetric flow rate to the sample flow rate, as follows:

$$R_{ref} = \frac{KQ_{ref}}{F_{ref}} \qquad \text{(Eq. K-1)}$$

Where:

R_{ref} = Reference ratio of hourly stack gas flow rate to hourly sample flow rate
Q_{ref} = Average stack gas volumetric flow rate for first hour of collection period, adjusted for bias, if necessary, according to section 7.6.5 of appendix A to this part, (scfh)
F_{ref} = Average sample flow rate for first hour of the collection period, in appropriate units (e.g., liters/min, cc/min, dscm/min)
K = Power of ten multiplier, to keep the value of R_{ref} between 1 and 100. The appropriate K value will depend on the selected units of measure for the sample flow rate.

Then, for each subsequent hour of the data collection period, calculate ratio of the stack gas flow rate to the sample flow rate using the equation K-2:

$$R_h = \frac{KQ_h}{F_h} \qquad \text{(Eq. K-2)}$$

Where:

R_h = Ratio of hourly stack gas flow rate to hourly sample flow rate
Q_h = Average stack gas volumetric flow rate for the hour, adjusted for bias, if necessary, according to section 7.6.5 of appendix A to this part, (scfh)
F_h = Average sample flow rate for the hour, in appropriate units (e.g., liters/min, cc/min, dscm/min)
K = Power of ten multiplier, to keep the value of R_h between 1 and 100. The appropriate K value will depend on the selected units of measure for the sample flow rate and the range of expected stack gas flow rates.

Maintain the value of R_h within ± 25 percent of R_{ref}

throughout the data collection period.

11.3 Calculation of Spike Recovery. Calculate the percent recovery of each section 3 spike, as follows:

$$\%R = \frac{M_3}{M_s} \times 100 \qquad \text{(Eq. K-3)}$$

Where:

$\%R$ = Percentage recovery of the pre-sampling spike
M_3 = Mass of Hg recovered from section 3 of the sorbent trap (:g)
M_s = Calculated Hg mass of the pre-sampling spike, from section 7.1.2 of this appendix (:g)

11.4 Calculation of Breakthrough. Calculate the percent breakthrough to the second section of the sorbent trap, as follows:

$$\%B = \frac{M_2}{M_1} \times 100 \qquad \text{(Eq. K-4)}$$

Where:

$\%B$ = Percent breakthrough
M_2 = Mass of Hg recovered from section 2 of the sorbent trap (:g)
M_1 = Mass of Hg recovered from section 1 of the sorbent trap (:g)

11.5 Normalizing Measured Hg Mass for Section 3 Spike Recoveries. Based on the results of the spike recovery in section 12.3 of this appendix, normalize the Hg mass collected in sections 1 and 2 of the sorbent trap, as follows:

$$M^* = \frac{(M_1 + M_2)\, M_s}{M_3} \qquad \text{(Eq. K-5)}$$

Where:

M^{*} = Normalized total mass of Hg recovered from sections 1 and of the sorbent trap (:g)
M_1 = Mass of Hg recovered from section 1 of the sorbent trap, unadjusted (:g)
M_2 = Mass of Hg recovered from section 2 of the sorbent trap, unadjusted (:g)
M_s = Calculated Hg mass of the pre-sampling spike, from section 7.1.2 of this appendix (:g)
M_3 = Mass of Hg recovered from section 3 of the sorbent trap (:g)

11.6 Calculation of Hg Concentration. Calculate the Hg concentration for each sorbent trap, using the following equation:

$$C = \frac{M^{*}}{V_t} \qquad \text{(Eq. K-6)}$$

Where:

C = Concentration of Hg for the collection period (:g/dscm)
M^{*} = Normalized total mass of Hg recovered from sections 1 and 2 of the sorbent trap (:g)
V_t = Total volume of dry gas metered during the collection period (dscm). For the purposes of this appendix, standard temperature and pressure are defined as 20^{B} C and 760 mm Hg, respectively.

11.7 Calculation of Paired Trap Agreement. Calculate the relative deviation (RD) between the Hg concentrations measured with the paired sorbent traps:

$$RD = \frac{*C_a - C_b*}{C_a + C_b} \times 100 \qquad \text{(Eq. K-7)}$$

Where:

RD = Relative deviation between the Hg concentrations from traps “a” and “b” (percent)
C_a = Concentration of Hg for the collection period, for sorbent trap “a” (:g/dscm)
C_b = Concentration of Hg for the collection period, for sorbent trap “b” (:g/dscm)

11.8 Calculation of Hg Mass Emissions. To calculate Hg mass emissions, follow the procedures in section 9.1.2 of appendix F to this part. Use the average of the two Hg concentrations from the paired traps in the calculations, except as provided in §75.15(h).

12.0 Method Performance.

These monitoring criteria and procedures have been applied to coal-fired utility boilers (including units with post-combustion emission controls), having vapor-phase Hg concentrations ranging from 0.03 :g/dscm to 100 :g/dscm.