

**AMENDMENTS TO THE MASSACHUSETTS AIR POLLUTION CONTROL REGULATIONS
310 CMR 7.02 “PLAN APPROVAL AND EMISSION LIMITATIONS” AND 310 CMR 7.29
“EMISSIONS STANDARDS FOR POWER PLANTS”**

Amend 310 CMR 7.02(3)(o) by adding underlined text and deleting text in strikethrough:

- (3) General Requirements for Plan Approval.
- (o) Compliance with the Massachusetts Annual Electric Generating Unit (EGU) Mercury Budget and Mercury Requirements.
1. Any person who owns, operates or controls an electric generating unit (EGU), defined as a stationary, coal-fired boiler or stationary, coal-fired combustion turbine, or a unit using atmospheric or pressurized fluidized bed combustion, integrated gasification combined cycle, magnetohydrodynamics, direct and indirect coal-fired turbines, or integrated gasification fuel cells, serving at any time, since the start-up of a unit’s combustion chamber, a generator with a nameplate capacity of more than 25 megawatts producing electricity for sale, other than an EGU at an affected facility as defined in 310 CMR 7.29, shall obtain, before the later of January 1, 2010 or the first date on which the unit meets the definition of an EGU and emits mercury, a plan approval that includes an annual cap on mercury emissions from all fuels used by the EGU, allocated from the 45 pound mercury set-aside established in 310 CMR 7.02(3)(o)3.
 2. No person who owns, operates or controls an EGU subject to 310 CMR 7.02(3)(o) at an affected facility as defined in 310 CMR 7.29 shall increase the EGU’s mercury emissions from all fuels used by the EGU above the applicable baseline mercury emissions listed in Table A unless and until the person obtains a plan approval that includes an annual cap on mercury emissions from all fuels used by the EGUs at the affected facility for the periods 1/1/2010 through 12/31/2017, and 1/1/2018 and thereafter. The cap shall equal, at most, the baseline maximum mercury emissions, as listed in Table A, plus an amount to cover any increase in mercury emissions above the baseline amount. Only the increase in mercury emissions above the baseline shall be apportioned from the 45 pound mercury set-aside established in 310 CMR 7.02(3)(o)3.

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7.02: U Plan Approval and Emission Limitations¶
- (2) Exemptions from Plan Approval.¶
- (c) Exclusions from Exemptions.¶
Notwithstanding the provisions of 310 CMR 7.02(2)(a), and 7.02(2)(b), the provisions 310 CMR 7.02(4) and 310 CMR 7.02(5) requiring a written plan approval shall apply to construction, substantial reconstruction or alteration of a facility or emission unit that: ...¶
- - - 2. is specifically included in 310 CMR 7.02(5)(a)5. through 1311.; or¶

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Deleted: EGU (as defined in 40 CFR 60.24(h)(8)),

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310 CMR 7.02(3)(o)2.: Table A		
Unit	Baseline Hg emissions (pounds) 1/1/2010 through 12/31/2017	Baseline Hg emissions (pounds) beginning 1/1/2018
Brayton Point unit 1	18.6	6.2
Brayton Point unit 2	18.6	6.2
Brayton Point unit 3	46.2	15.4
Mount Tom unit 1	10.8	3.6
Salem Harbor unit 1	6.3	2.1
Salem Harbor unit 2	6.1	2.0
Salem Harbor unit 3	10.8	3.6
Somerset unit 8	9.3	3.1

3. There is a 45 pound mercury set-aside for applicants seeking plan approvals pursuant to 310 CMR 7.02(3)(o)1. and 2. The Department shall issue a plan approval to an EGU subject to 310 CMR 7.02(3)(o) only if the mercury emissions capped in the plan approval, combined with mercury emissions previously capped pursuant to 310 CMR 7.02(3)(o)1. and mercury emissions increases previously capped pursuant

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to 310 CMR 7.02(3)(o)2., would not cause the set-aside of 45 pounds of mercury per calendar year to be exceeded.

4. Any person who owns, operates or controls an EGU subject to 310 CMR 7.02(3)(o), shall comply with all mercury monitoring, recordkeeping, and reporting requirements in 310 CMR 7.00: Appendix D, and in 310 CMR 7.29, not including the total annual mercury emissions limit in 310 CMR 7.29(5)(a)3.c., and the removal efficiency and emissions rate limits in 310 CMR 7.29(5)(a)3.e.i. and ii. and f.i. and ii.

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Amend 310 CMR 7.02(5)(a)12. and 13.:

(5) Comprehensive Plan Application (CPA).

(a) Applicability.

12. Electric Generating Unit (EGU). Any EGU subject to 310 CMR 7.02(3)(o), other than an EGU at an affected facility, as defined in 310 CMR 7.29, that will emit mercury above a mercury cap established in a written approval of a CPA. Mercury cap refers to a cap established pursuant to 310 CMR 7.02(3)(o).

Deleted: 40 CFR Part 75 and "Hg Designated Representative For Hg Budget Sources" and "Monitoring and Reporting" in 40 CFR Part 60 Subpart HHHH

13. Electric Generating Unit (EGU). Any EGU subject to 310 CMR 7.02(3)(o), at an affected facility, as defined in 310 CMR 7.29, that will emit mercury from all fuels utilized above the baseline mercury emissions listed in 310 CMR 7.02(3)(o)2.: Table A plus any additional mercury allowed by a mercury cap in a written approval of a CPA. Mercury cap refers to a cap established pursuant to 310 CMR 7.02(3)(o).

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5. In implementing the provisions of 40 CFR Part 75 concerning monitoring of mercury mass emissions, the terms used in that part shall have the meanings defined in 40 CFR Part 72; provided, however, that the term permitting authority shall mean the Department. In implementing the provisions of the Clean Air Mercury Rule in 40 CFR Part 60 Subparts Da and HHHH, the terms used in those subparts shall have the meanings defined in 40 CFR Part 60, provided, however, that the term permitting authority shall mean the Department, the term Hg Budget Trading Program shall mean 310 CMR 7.02 and 7.29, and the term Hg Budget unit shall mean an EGU as defined in 40 CFR 60.24(h)(8).¶

Amend 310 CMR 7.29 by adding underlined text and deleting text in strikethrough.

7.29: Emissions Standards for Power Plants

(1) Purpose and Scope. The purpose of 310 CMR 7.29 is to control emissions of nitrogen oxides (NO_x), sulfur dioxide (SO₂), mercury (Hg), carbon monoxide (CO), carbon dioxide (CO₂) and fine particulate matter (PM 2.5) (together "pollutants") from affected facilities in Massachusetts. 310 CMR 7.29 accomplishes this by establishing output-based emission rates for NO_x, SO₂ and CO₂ and establishing a cap on CO₂ and Hg emissions from affected facilities. CO₂ emissions standards set forth in 310 CMR 7.29(5)(a)5.a. and b. shall not apply to emissions that occur after December 31, 2008.

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(2) Definitions. The definitions in 310 CMR 7.00 apply to 310 CMR 7.29. However, the terms below have the following meanings when they appear in 310 CMR 7.29. If a term is defined both in 310 CMR 7.00 and in 310 CMR 7.29(2), the definition in 310 CMR 7.29(2) applies for the purpose of 310 CMR 7.29.

Actual Emissions for a facility means that facility's total annual emissions expressed in tons for each pollutant, as measured and reported in accordance with 310 CMR 7.29(7).

Affected Facility means a facility which emitted greater than 500 tons of SO₂ and 500 tons of NO_x during any of the calendar years 1997, 1998 or 1999 and which includes a unit which is a fossil fuel fired boiler or indirect heat exchanger that:

- (a) is regulated by 40 CFR Part 72 (the Federal Acid Rain Program);
- (b) serves a generator with a nameplate capacity of 100 MW or more;
- (c) was permitted prior to August 7, 1977; and
- (d) had not subsequently received a Plan Approval pursuant to 310 CMR 7.00: Appendix A or a Permit pursuant to the regulations for Prevention of Significant Deterioration, 40 CFR Part 52, prior to October 31, 1998.

Deleted: Alternate Hg Designated Representative means, for a coal-fired affected facility and each coal-fired unit at the facility, the natural person who is authorized by the owners and operators of the facility and all such units at the facility in accordance with 40 CFR 60.4110 through 60.4114, to act on behalf of the Hg designated representative in matters pertaining to mercury monitoring, recordkeeping, reporting and compliance.¶

Alternative monitoring system means a system or a component of a system designed to provide direct or indirect data of mass emissions per time period, pollutant concentrations, or volumetric flow, that is demonstrated to the Department as having the same precision, reliability, accessibility, and timeliness as the data provided by a certified CEMS or certified CEMS

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component in accordance with 310 CMR 7.00: Appendix D.

Deleted: 40 CFR Part 75

Ash means bottom ash, fly ash or ash generated by an ash reduction process derived from combustion of fossil fuels, carbon or other substances.

Deleted: or other emissions monitoring system approved for use under 40 CFR 60.4170 through 60.4176,

Automated Data Acquisition and Handling System or DAHS means that component of the mercury continuous emission monitoring system (CEMS), 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 by 310 CMR 7.00: Appendix D.

Deleted: 40 CFR 60.4170 through 60.4176

Deleted: Mercury (Hg) Designated Representative means, for a coal-fired affected facility and each coal-fired unit at the facility, the natural person who is authorized by the owners and operators of the facility and all such units at the facility, in accordance with 40 CFR 60.4110 through 60.4114, to represent and legally bind each owner and operator in matters pertaining to mercury monitoring, recordkeeping, reporting and compliance.¶

Block Hourly Average means the average of all valid emission concentrations when the affected unit is operating, measured over a one-hour period of time from the beginning of an hour to the beginning of the next hour.

Calendar Quarter means any consecutive three-month period (nonoverlapping) beginning January 1st, April 1st, July 1st or October 1st.

Deleted: the equipment required under 40 CFR 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 40 CFR Part 75. The following systems are the principal types of CEMS required under 40 CFR 60.4170 through 60.4176:¶

Calendar Year means any period beginning January 1st and ending December 31st.

Continuous Emission Monitoring System or CEMS means the equipment required by 40 CFR Part 75 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 SO₂, NO_x, or CO₂ emissions or stack gas volumetric flow rate.

(a) 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);¶

Historical Actual Emissions or Historical Actual Emission Rate means the average annual emissions or output-based emission rate averaged over 1997, 1998 and 1999. A different three-year period within the past five years may be used if requested by the owner of an affected facility, and if the Department determines that period is more representative of historical actual emissions.

Mercury Continuous Emission Monitoring System or Mercury CEMS means all of the equipment used to determine the total vapor phase Hg concentration. The monitoring system may generally include the following major subsystems: sample acquisition, Hg to Hg converter, sample transport, sample conditioning, flow control/gas manifold, gas analyzer, and data recorder.

(b) 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 (µg/dscm);¶

Mercury Monitoring System means a mercury continuous emission monitoring system, an alternative monitoring system, or a sorbent trap monitoring system operated in accordance with 310 CMR 7.00: Appendix D.

(c) A moisture monitoring system, as defined in 40 CFR 75.11(b)(2) and providing a permanent, continuous record of the stack gas moisture content, in percent H₂O.¶

MWh means megawatt-hours of net electrical output.

(d) A carbon dioxide monitoring system, consisting of a CO₂ concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO₂ concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO₂ emissions, in percent CO₂; and¶

Net Electrical Output of a Facility means the total actual net electrical output of the facility used by the New England Independent System Operator to determine settlement resources of energy market participants.

(e) An oxygen monitoring system, consisting of an O₂ concentration ... [1]

Output-based Emission Rate means an emission rate for any pollutant, expressed in terms of actual emissions in pounds over a specified time period per megawatt-hour of net electrical output produced over the same time period.

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Output-based Emission Standard means the emission standards for each applicable pollutant, expressed in terms of pounds of pollutant emitted per megawatt-hour of net electrical output

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produced, as set forth in 310 CMR 7.29(5).

Repowering means:

- (a) Qualifying Repowering Technology as defined by 40 CFR Part 72 or,
- (b) The replacement of the heat or power from a unit subject to 40 CFR Part 72 at an affected facility with either a new combustion unit, regardless of the fuel used, or the purchase of heat or power from the owner of a new combustion unit, regardless of the fuel used, provided the replacement unit:
 - 1. (Regardless of owner) is on the same, or contiguous property as the replaced unit;
 - 2. Has a maximum heat output rate or power output rate equal to or greater than the maximum heat output rate or power output rate of the replaced unit; and, the replaced unit is physically removed from the affected facility, or the heat or power available from the replaced unit is limited by limiting hours of operation, maximum heat input or some other method approved by the Department; and,
 - 3. Incorporates technology capable of controlling multiple combustion pollutants simultaneously with improved fuel, boiler or generation efficiency and significantly greater waste reduction relative to the performance of technology in widespread commercial use as determined by the Department.

Rolling with respect to an average means the calculation of an average by dropping the earliest month or calendar quarter value and incorporating the latest month or calendar quarter value for the period over which an average is calculated.

Sorbent Trap Monitoring System means the equipment required by [310 CMR 7.00: Appendix D](#) for the continuous monitoring of mercury emissions, using paired sorbent traps containing iodinated 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 airtight 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 mercury concentration in the stack gas for the sampling period is determined, in units of micrograms per dry standard cubic meter ($\mu\text{g}/\text{dscm}$). Mercury mass emissions for each hour in the sampling period are calculated using the average mercury concentration for that period, in conjunction with contemporaneous hourly measurements of the stack gas flow rate, corrected for the stack gas moisture content.

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Total Mercury means the sum of particulate-bound and vapor-phase (elemental and oxidized) mercury in combustion gases or emitted to the atmosphere.

(3) Applicability. The provisions of 310 CMR 7.29 apply to any person who owns, leases, operates or controls an affected facility.

(4) General Provisions.

- (a) Each affected facility shall comply with the applicable emission standards established in 310 CMR 7.29(5).
- (b) Any person subject to 310 CMR 7.29 shall comply with all other applicable regulations, including, but not limited to: 310 CMR 7.02: *U Plan Approval and Emission Limitations*; 310 CMR 7.19: *Reasonably Available Control Technology (RACT) for sources of Oxides of Nitrogen (NO_x)*; 310 CMR 7.28: *NO_x Allowance Trading Program*; 310 CMR 7.70 *CO₂ Budget Trading Program*; 310 CMR 7.00: *Appendix A: Emissions Offsets and*

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Nonattainment Review; and 310 CMR 7.00: *Appendix C: Operating Permit and Compliance Program*. If provisions or requirements from any other regulation or permit conflict with a provision of 310 CMR 7.29, the more stringent of the provisions will apply unless otherwise determined by the Department in the affected facility's operating permit. Regardless of the Department's determination in the operating permit, any person subject to 310 CMR 7.29 shall comply with all applicable federal requirements.

(c) In the case of imminent threat to the reliability of New England's electricity system, the Department may promulgate an emergency regulation, as per M.G.L. c. 30A, §§ 2 and 3, to mitigate the emergency situation.

(5) Emission Requirements.

(a) Emission Standards for Affected Facilities.

1. Nitrogen Oxides Emission Standards.

a. Effective on the applicable date in 310 CMR 7.29(6)(c), emissions of nitrogen oxides shall not exceed an emission rate of 1.5 lbs./MWh calculated over any consecutive 12 month period, recalculated monthly; and,

b. Effective on the applicable date in 310 CMR 7.29(6)(c), emissions of nitrogen oxides shall not exceed an emission rate of 3.0 lbs./MWh calculated over any individual calendar month.

2. Sulfur Dioxide Emission Standards.

a. Effective on the applicable date in 310 CMR 7.29(6)(c), emissions of sulfur dioxide shall not exceed an emission rate of 6.0 lbs./MWh calculated over any consecutive 12 month period, recalculated monthly.

b. Effective on the applicable date in 310 CMR 7.29(6)(c),

i. Emissions of sulfur dioxide shall not exceed an emission rate of 3.0 lbs./MWh calculated over any consecutive 12 month period, recalculated monthly; and,

ii. Emissions of sulfur dioxide shall not exceed an emission rate of 6.0 lbs./MWh calculated over any individual calendar month.

3. Mercury Emissions.

a. By December 1, 2002, the Department will complete an evaluation of the technological and economic feasibility of controlling and eliminating emissions of mercury from the combustion of solid fossil fuel in Massachusetts in accordance with the Mercury Action Plan of the Conference of New England Governors and Eastern Canadian Premiers.

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c. The Emission Control Plan submitted to the Department under 310 CMR 7.29(6) shall demonstrate, and any person who owns, leases, operates or controls an affected facility shall ensure, that beginning at the time of the affected facility's earliest applicable compliance date in 310 CMR 7.29(6)(c), or at the time of the facility's earliest applicable Phase 1 NO_x and SO₂ compliance date under an administrative order existing prior to June 4, 2004, whichever is later, total annual mercury emissions from combustion of solid fuels in units subject to 40 CFR Part 72 located at an affected facility or from re-burn of ash in Massachusetts will not exceed the average annual emissions calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii.. The average annual emissions calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii. equal the average measured pounds of mercury emitted per million Btu consumed multiplied by the heat input in million Btu averaged over 1997, 1998 and 1999. A different three-calendar-year period within the five years prior to May 11, 2001 may be used if requested by the owner of an affected facility, and if the Department determines that the different period is more representative of historical actual heat input. Total

annual mercury emissions equal the total emissions from:

- i. combustion of solid fossil fuel in units subject to 40 CFR Part 72 located at an affected facility, determined using emissions testing at least every other calendar quarter from October 1, 2006 until a certified mercury monitoring system is used to demonstrate compliance with the standards in 310 CMR 7.29(5)(a)3.e. or f., and using a certified mercury monitoring system thereafter, and
- ii. re-burn of ash, where such ash was produced by the combustion of fossil fuel or ash at any affected facility. When ash is re-burned at an affected facility, the associated mercury emissions shall be attributed to the affected facility at which the ash is re-burned. When ash produced by an affected facility is used in Massachusetts as a cement kiln fuel, as an asphalt filler, or in other high temperature processes that volatilize mercury,
 - (i) the mercury content of the utilized ash shall be measured weekly using a method acceptable to the Department,
 - (ii) all of the mercury in the utilized ash shall be assumed to be emitted, unless it can be demonstrated with data acceptable to the Department that a lesser amount of mercury is emitted,
 - (iii) the associated mercury emissions shall be attributed to the affected facility from which the ash is shipped to the cement kiln, asphalt batching plant or other high temperature processing location, and
 - (iv) a proposal shall be submitted for Department approval at least 45 days prior to such use, or at least 45 days prior to October 1, 2006, whichever is later, detailing the proposed measurement methods to be used to comply with 7.29(5)(a)3.c.ii.(i) and (ii).

d. Fuel Sampling and Stack Testing.

- i. Beginning on May 11, 2001 until August 1, 2002, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel in a Part 72 unit shall test each shipment of coal at the time received. The test shall be conducted by a method approved by the Department, and report the mercury and chlorine content of the coal. The results of each interim fuel testing shall be reported to the Department with the results of the next stack test as required in 310 CMR 7.29(5)(a)3.d.ii.
- ii. Any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel shall perform stack tests for mercury. The stack tests shall:

- Be conducted using a DEP-approved test method detailed in a test protocol submitted to the Department at least 45 days before commencement of testing, and notify the Department of the specific date the test will be conducted at least 30 days prior to conducting the test;
- Test the mercury concentrations and species before all add-on air pollution control equipment (inlet) and after (outlet);
- Be conducted as follows: One test shall be performed before August 1, 2001,

A second test shall be performed after December 1, 2001 but not later than February 1, 2002,

A third test shall be performed after June 1, 2002 but not later than August 1, 2002

- The results of each stack test shall be reported to the Department within 30 days after conducting each stack test.

- iii. Until a certified mercury monitoring system is installed, stack tests for mercury shall consist at a minimum of three runs at normal load (as defined in

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section 6.5.2.1 of appendix A to 40 CFR Part 75) on each unit firing solid fossil fuel or ash according to a testing protocol acceptable to the Department. Unless a mercury monitoring system that measures particulate-bound mercury, either combined with or separate from the measurement of vapor-phase mercury, is installed at a unit for purposes of determining compliance with the standards in 310 CMR 7.29(5)(a)3.c., e. and f., stack tests for mercury, and certification tests and Relative Accuracy Test Audits for mercury monitoring systems, shall determine total and particulate-bound mercury. Relative accuracy shall be calculated in terms of total mercury for mercury monitoring systems that measure total mercury and in terms of vapor-phase (elemental and oxidized) mercury for mercury monitoring systems that do not measure particulate-bound mercury, as further detailed in 310 CMR 7.00: Appendix D. The results of each stack test shall be reported to the Department within 45 days after conducting each stack test.

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e. Effective on January 1, 2008, or 15 months after the facility's earliest applicable Phase 1 NO_x and SO₂ compliance date under an administrative order existing prior to June 4, 2004, whichever is later, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall comply with at least one of the following mercury emissions standards:

i. a facility average total mercury removal efficiency of 85% or greater for those units combusting solid fossil fuel or ash. The mercury removal efficiency based on a mercury monitoring system shall be calculated based on the average historic mercury inlet emissions determined under 310 CMR 7.29(5)(a)3.d.ii. using the methodology in 310 CMR 7.00: Appendix D, and shall be calculated on a rolling 12 month basis; or

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ii. a facility average total mercury emissions rate of 0.0075 lbs./GWh or less for those units combusting solid fossil fuel or ash. The mercury emissions rate based on a mercury monitoring system shall be calculated using the mercury mass emissions methodology specified in 40 CFR Part 75 until [insert date 1 day before date of promulgation] and in 310 CMR 7.00: Appendix D beginning [insert date of promulgation] and approved by the Department in the monitoring plan required under 310 CMR 7.29(5)(a)3.g. and shall be calculated on a rolling 12 month basis.

iii. Notwithstanding 310 CMR 7.29(5)(a)3.e.i. and ii., any person who owns, leases, operates or controls an affected unit which combusts solid fossil fuel or ash and has an enforceable commitment with the Department to terminate operations by January 1, 2010, may comply with 310 CMR 7.29 (5)(a)3.e.i. or ii. through January 1, 2010 by complying with an approved 310 CMR 7.29 emission control plan modification achieving early or off-site reductions. To comply with the foregoing, such person shall propose under 310 CMR 7.29(6)(h)1. to amend the approved emission control plan. Such early or off-site reductions shall be in an amount of at least the equivalent mass of mercury reductions required under 310 CMR 7.29 (5)(a)3.e.i. or ii. Any early reductions shall be accrued on-site at the stack prior to the compliance date effective under 310 CMR 7.29(5)(a)3.e. Any off-site mercury air emission reductions shall be accrued on at least a one pound reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit. Any other off-site mercury reductions shall be accrued on at least a ten pounds reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit.

f. Effective on October 1, 2012, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall comply with at least

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one of the following mercury emissions standards:

- i. a facility average total mercury removal efficiency of 95% or greater for those units combusting solid fossil fuel or ash. The mercury removal efficiency shall be calculated based on a mercury monitoring system as provided in 310 CMR 7.29(5)(a)3.e.i.; or
- ii. an average total mercury emission rate of 0.0025 lbs./GWh or less for those units combusting solid fossil fuel or ash. The mercury emission rate shall be calculated based on a mercury monitoring system as provided in 310 CMR 7.29(5)(a)3.e.ii.

g. Mercury Monitoring Systems

i. By January 1, 2008, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall install, certify, and operate a mercury monitoring system in accordance with 40 CFR Part 75 until [insert date 1 day before date of promulgation] and 310 CMR 7.00: Appendix D beginning [insert date of promulgation] to measure mercury stack emissions from each solid fossil fuel- or ash-fired unit at a facility subject to 310 CMR 7.29. Any person required to install a mercury monitoring system shall submit a monitoring plan for Department approval and shall propose to amend the approved emission control plan in accordance with 310 CMR 7.29(6)(h)1. to incorporate the mercury monitoring approach, at least 45 days prior to the commencement of initial certification testing.

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iii. If a mercury monitoring system capable of measuring only vapor-phase mercury is installed at a unit for purposes of determining compliance with the standards in 310 CMR 7.29(5)(a)3.c., e. and f., total mercury shall be determined by taking into account the average particulate-bound mercury measured during the most recent stack test on that unit in combination with the total vapor-phase mercury measured by the mercury monitoring system until such time as a mercury monitoring system to measure particulate-bound mercury is installed and operational at a unit.

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iv. Notwithstanding 310 CMR 7.29(5)(a)3.g.i., a unit with an enforceable commitment to terminate operations by September 30, 2010 or shutdown and convert to syngas fuel may choose between quarterly stack testing and a mercury monitoring system to document mercury emissions in the period from January 1, 2008 until the time such unit terminates operation or September 30, 2010, whichever is earlier; however, if such unit must install a mercury monitoring system to meet a federal requirement, data from that mercury monitoring system shall be used to document mercury emissions instead of stack testing. By the first hour such unit emits emissions after September 30, 2010, such unit shall install, certify and operate a mercury monitoring system to measure mercury stack emissions in accordance with 310 CMR 7.00: Appendix D. Such unit shall submit a monitoring plan for Department approval and shall propose to amend the approved emission control plan in accordance with 310 CMR 7.29(6)(h)1. to incorporate the mercury monitoring approach at least 45 days prior to the commencement of initial certification testing.

4. Carbon Monoxide Emission Standards. (Reserved.)

5. Carbon Dioxide Emission Standards.

a. By September 1, 2009, any person who owns, leases, operates or controls an affected facility shall demonstrate that emissions of carbon dioxide from the affected facility in calendar years 2006, 2007, and 2008, expressed in tons, from

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Part 72 units located at the affected facility did not exceed historical actual emissions. If the Department has received a technically complete plan approval application under 310 CMR 7.02 for a new or repowered electric generating unit subject to 40 CFR Part 72 at an affected facility prior to May 11, 2001, then the emissions from the new or repowered unit may be included in the calculation of historical actual emissions. The calculation of historical actual emissions which includes emissions from a new or repowered unit shall not include emissions from any unit shutdown or removed from operation at the affected facility that is included in the technically complete plan approval application pursuant to 310 CMR 7.02. These emissions standards shall not apply to the emissions of CO₂ that occur after December 31, 2008.

b. By September 1, 2009, any person who owns, leases, operates or controls an affected facility shall demonstrate to the Department that the average emission rate of carbon dioxide from Part 72 units located at the affected facility did not exceed an emission rate of 1800 lbs./MWh in calendar year 2008. The average emission rate is calculated by dividing the total number of pounds of CO₂ emitted by the affected facility in the calendar year by the net electrical output for the affected facility for the same calendar year. These emissions standards shall not apply to the emissions of CO₂ that occur after December 31, 2008.

c. Compliance with 310 CMR 7.29(5)(a)5.a. may be demonstrated by using emission reductions, avoided emissions or sequestered emissions verified under 310 CMR 7.00: *Appendix B(7)* to offset emissions above the historical actual emissions, provided the Department determines such emission reductions, avoided emissions or sequestered emissions are real, additional, verifiable, permanent, and enforceable, as defined in 310 CMR 7.00: *Appendix B(7)* or by using the GHG Expendable Trust under the conditions specified in 310 CMR 7.00: *Appendix B(7)(d)5*.

d. Compliance with 310 CMR 7.29(5)(a)5.b. may be demonstrated by using emission reductions, avoided emissions or sequestered emissions verified under 310 CMR 7.00: *Appendix B(7)* to offset excess emissions, provided the Department determines such emission reductions, avoided emissions or sequestered emissions are real, additional, verifiable, permanent, and enforceable as defined in 310 CMR 7.00: *Appendix B(7)* or by using the GHG Expendable Trust under the conditions specified in 310 CMR 7.00: *Appendix B(7)(d)5*. Excess emissions are any emissions above the net electrical output of the facility times 1800 lbs./MWh.

6. Fine Particulate Matter Emissions Standards. (Reserved.)

(b) Compliance with the emission standards in 310 CMR 7.29(5)(a), may be demonstrated by any combination of the following:

1. Dividing the total emissions of each pollutant by the total net electrical output from all electric generating units subject to 40 CFR Part 72 located at the affected facility as of May 11, 2001 or repowered at the affected facility after May 11, 2001. For demonstrating compliance with the mercury emissions standards in 310 CMR 7.29(5)(a)3., the person who owns, leases, operates or controls an affected facility shall include in the calculation only units that fire solid fossil fuel or ash, or that repowered a unit that fired solid fossil fuel or ash.

2. For the SO₂ emission standards in 310 CMR 7.29(5)(a)2., using SO₂ reductions at the affected facility below historical actual emissions which were made after May 11, 2001, and prior to the earliest applicable date set in 310 CMR 7.29(6). The total amount of tons produced through early reductions each year is calculated by multiplying

the facility's net electrical output for that year times (the historical actual emission rate minus that year's actual emission rate in lbs./MWh) divided by 2000. The amount of early reductions, with supporting information, shall be provided to the Department prior to use for compliance with 310 CMR 7.29(5)(a)2.a.. Each ton of reduction may be used, once, to offset one ton of excess emissions from the facility. Excess emissions are any emissions above a level equal to the net electrical output of the facility times the applicable emission standard in 310 CMR 7.29(5)(a)2.

3. For the emission standards in 310 CMR 7.29(5)(a)2.b., using SO₂ allowances created pursuant to 40 CFR Part 72 (the Federal Acid Rain Program). Three allowances shall be used to offset each ton of excess emissions above the emission standard. Such SO₂ allowances shall be in addition to those allowances used by the facility to comply with the requirements of 40 CFR part 72, and shall be transferred to the Department and retired for the benefit of the environment.

(6) Emission Control Plans, Compliance Paths and Compliance Dates.

(a) Emission Control Plan Deadline and General Provisions.

1. Any person who owns, leases, operates or controls an affected facility shall submit an emission control plan for Department approval under 310 CMR 7.29 on or before January 1, 2002 regardless of the compliance path chosen.

2. Any person who owns, leases, operates or controls an affected facility who is required to submit an application for a plan approval under 310 CMR 7.02 shall submit an application for plan approval pursuant to 310 CMR 7.02 on or before January 1, 2003.

3. Any person who owns, leases, operates, or controls an affected facility which installs mercury control equipment that is not already contained in an emission control plan approval under 310 CMR 7.29 shall submit a mercury emissions control plan amendment application under 310 CMR 7.29(6)(h) at least 90 days before intended installation and may not install such equipment until receiving approval of the revision.

4. Any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel shall by December 4, 2004, propose under 310 CMR 7.29(6)(h)1. to amend the approved emission control plan to incorporate the mercury emission cap established in 310 CMR 7.29(5)(a)3.c. Notwithstanding 310 CMR 7.29(5)(a)3.c., any facility with average annual emissions of less than five pounds, calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii., may propose and be approved to use early or off-site reductions to demonstrate compliance with 310 CMR 7.29(5)(a)3.c. through September 30, 2012. Any early reductions shall be accrued on-site at the stack prior to the compliance date effective under 310 CMR 7.29(5)(a)3.c. Any off-site mercury air emission reductions shall be accrued on at least a one pound reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit. Any other off-site mercury reductions shall be accrued on at least a ten pounds reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit.

(b) Emission Control Plan Contents. The emission control plan submitted pursuant to 310 CMR 7.29(6) shall include, but is not limited to, the following:

1. The name of the company and the affected facility.

2. A list of units at the affected facility that will be used to demonstrate compliance with 310 CMR 7.29(5), including which units will be included in calculating historical actual emissions.

3. The name of the company contact responsible for compliance with 310 CMR 7.29.

4. A statement that the affected facility has a monitoring plan in place which meets the requirements of 40 CFR Part 72. Any modifications to an affected facility's monitoring

methodology approved pursuant to the requirements of 40 CFR 72 are hereby incorporated into the approved emission control plan under 310 CMR 7.29.

5. Signature of the company contact responsible for compliance with 310 CMR 7.29.

6. Identification of the affected facility, including plant name and the ORIS or facility code assigned to the facility by the U.S. Energy Information Administration, if applicable.

7. A description of how the affected facility will comply with the emission standards contained in 310 CMR 7.29(5), by the applicable compliance dates contained in 310 CMR 7.29(6)(c), including, but not limited to, the control equipment the affected facility intends to use.

8. A proposed schedule with interim milestones for each activity leading to compliance with the requirements in 310 CMR 7.29(5). Such information shall include, but not be limited to, sufficient information to allow DEP to consult with the Department of Energy Resources and the Department of Public Utilities, to address any concerns with potential impacts to the reliability of the New England power system.

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9. A description of how emission reduction measures implemented to achieve reductions in one pollutant will optimize reductions in other pollutants.

10. A description of the sampling and testing protocol(s) meeting the requirements of 310 CMR 7.29(5)(a)3.d.

11. Any other information requested by the Department.

(c) Compliance Paths and Compliance Dates.

1. Any person who owns, leases, operates or controls an affected facility who does not choose to comply with the emissions standards in 310 CMR 7.29(5) by repowering a unit subject to 40 CFR Part 72 at the affected facility, or is not required to receive a plan approval pursuant to 310 CMR 7.02 for construction, substantial reconstruction or alteration of a unit at the affected facility subject to 40 CFR Part 72 for the purpose of compliance with 310 CMR 7.29, shall begin to comply with the emission standards in 310 CMR 7.29(5) by the following dates:

a. For the emission standards in 310 CMR 7.29(5)(a)1.a. and (5)(a)2.a., October 1, 2004; and,

b. For the emission standards in 310 CMR 7.29(5)(a)1.b., and (5)(a)2.b., October 1, 2006.

2. Any person who owns, leases, operates or controls an affected facility who chooses to comply with the emissions standards in 310 CMR 7.29(5) by repowering at least one unit at the affected facility subject to 40 CFR Part 72, or is required to receive a plan approval pursuant to 310 CMR 7.02 for construction, substantial reconstruction or alteration of a unit at the affected facility subject to 40 CFR Part 72 for the purpose of compliance with 310 CMR 7.29, and submits, on or before January 1, 2003, an administratively complete application pursuant to 310 CMR 7.02, shall begin to comply with the emission standards in 310 CMR 7.29(5) by the following dates:

a. For the emissions standards contained in 310 CMR 7.29(5)(a)1.a. and (5)(a)2.a., October 1, 2006, and

b. For the emissions standards contained in 310 CMR 7.29(5)(a)1.b. and (5)(a)2.b., October 1, 2008.

3. If an affected facility has units with different applicable compliance dates for a particular standard, the later compliance date applies to all units at the affected facility.

(d) Interaction with 310 CMR 7.02. A plan approval under 310 CMR 7.02(1) may be required for construction, substantial reconstruction or alteration of a unit at an affected facility to comply with 310 CMR 7.29. If such construction, substantial reconstruction or alteration to the facility triggers any applicable section under 310 CMR 7.02(4)(a) and

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310 CMR 7.02(5)(a), a plan approval under 310 CMR 7.02 is required. If a plan approval is required under 310 CMR 7.02, then upon the Department's issuance of the plan approval, the Department will modify the affected facility's emission control plan pursuant to 310 CMR 7.29(6)(g).

(e) Public comment. If the Department proposes to approve an emission control plan or approve a plan with conditions, the Department shall issue a draft emission control plan approval. Upon issuance, the Department will publish a notice of public hearing and comment on the draft emission control plan approval, in accordance with M.G.L. c. 30A, at least 30 days before the public hearing.

(f) Approval of the Emission Control Plan.

1. After the close of the public comment period, and consideration of any public comments, the Department shall issue a disapproval of the emission control plan, a final approval of the emission control plan, or a final approval of the emission control plan with conditions, based on whether the emission control plan as submitted meets the requirements of 310 CMR 7.29.

2. Upon final approval of an emission control plan, any person who owns, leases, operates or controls an affected facility shall implement and comply with the approved emission control plan.

(g) Modification to an Affected Facility's Operating Permit. For any person who owns, leases, operates or controls an affected facility, the facility's operating permit will be modified upon approval of the emission control plan in accordance with the procedures in 310 CMR 7.00: *Appendix C(8)*. No additional application or fee is necessary to modify the operating permit at the same time the emission control plan is approved.

(h) Modifications to an Affected Facility's Emission Control Plan.

1. Any person subject to 310 CMR 7.29 may propose amendments to the approved emission control plan. If the Department proposes to approve such amendments, or approve such amendments with conditions, then the Department will publish a notice of public comment on the draft approval, in accordance with M.G.L. c. 30A. The Department will allow a 30 day public comment period following publication of the notice, and may hold a public hearing. Modifications to an affected facility's monitoring system approved pursuant to the requirements of 40 CFR Part 72 are not subject to such public comment prior to approval.

2. For the purposes of evaluating system performance, testing new technology or control technologies, diagnostic testing, or other related activities that are anticipated to reduce air pollution or advance the state-of-the-art technology for controlling facility mercury emissions, the Department may issue an ECP approval in the form of a limited amendment to the ECP for a limited period of time for the purpose of achieving compliance with the requirements of 310 CMR 7.29(5)(a)3.e. and f. The Department approval will detail the duration of the time period and how the facility shall report under 310 CMR 7.29(7)(b) for the duration of the time period. The Department will publish a notice of public comment on the draft approval. The Department will allow a ten day public comment period following publication of the notice, and may hold a public hearing.

(7) Reporting, Compliance Certification, and Recordkeeping.

(a) By January 30 of the year following the earliest applicable compliance date for the affected facility under 310 CMR 7.29(6)(c), and January 30 of each calendar year thereafter, the company representative responsible for compliance at each affected facility shall submit a report to the Department demonstrating compliance with the emission standards contained in 310 CMR 7.29(5)(a) and in an approved emission control plan. The report shall demonstrate compliance with any applicable monthly emission rate for each month of the

previous calendar year, and with any applicable 12-month emission rate for each of the 12 previous consecutive 12-month periods. For the mercury standards at 310 CMR 7.29(5)(a)3.c., the compliance reports due January 30, 2007 and 2008 shall include the quarterly emissions for each quarter beginning October 1, 2006. For the mercury standards at 310 CMR 7.29(5)(a)3.c., e., and f., the compliance report due January 30, 2009 and each report thereafter shall demonstrate compliance with any applicable annual standard for the previous calendar year and with any applicable 12-month standard for each of the 12 previous consecutive 12-month periods.

(b) The compliance report shall contain the following:

1. Actual emissions for each pollutant, expressed in tons for SO₂, CO₂, and NO_x, for each of the preceding 12 months and expressed in thousandths of pounds for mercury, for each of the preceding four calendar quarters beginning October 1, 2006 and preceding 12 months beginning January 1, 2008. Actual emissions shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance. Actual emissions provided under 310 CMR 7.29 shall be reported in accordance with:

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a. 40 CFR Part 75 for SO₂, CO₂, and NO_x, and, 310 CMR 7.00: Appendix D no later than [insert date of promulgation], for mercury,

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b. for the standards at 310 CMR 7.29(5)(a)3.c.i. based on stack tests, by calculating the thousandths of pounds of mercury from:

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i. the average measured pounds of mercury emitted per million Btu consumed for the calendar year multiplied by

ii. the heat input determined under 40 CFR Part 75 for the calendar year. Affected facilities may choose to subtract the heat input attributable to combustion of fuels other than solid fossil fuel and ash if such heat input is determined using the procedures of 40 CFR Part 75 Appendix D.

c. for the standards at 310 CMR 7.29(5)(a)3.c.ii., by assuming all of the mercury in the utilized ash is emitted, unless a lesser amount of mercury has been approved under 310 CMR 7.29(5)(a)3.c.ii.(iv).

d. Any particulate-bound mercury accounted for under the provisions of 310 CMR 7.29(5)(a)3.g.iii. shall be calculated as specified in 310 CMR 7.00: Appendix D. Affected facilities may choose to subtract the heat input attributable to combustion of fuels other than solid fossil fuel and ash if such heat input is determined using the procedures of 40 CFR Part 75 Appendix D.

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i. the most recent average measured pounds of particulate mercury emitted per million Btu consumed multiplied by¶
ii. the heat input determined under 40 CFR Part 75 for each calendar month

2. Actual net electrical output for each of the preceding 12 months, expressed in megawatt-hours. Actual net electrical output shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance.

3. The resulting output-based emission rates for each of the preceding 12 months, and each of the 12 consecutive rolling month time periods, expressed in pounds per megawatt-hour for SO₂, CO₂, and NO_x and pounds per gigawatt-hour for mercury. Output-based emission rates shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance.

4. A compliance certification report, which shall contain the following elements:

a. A statement certifying that the monitoring data reflects operations at the affected facility.

b. A statement that all SO₂, CO₂, and NO_x emissions, and, beginning [insert date of promulgation], all mercury emissions, from the affected facility were accounted for, either through the applicable monitoring or through application of the appropriate missing data procedures and reported in the quarterly reports. If provisionally certified data were reported, the company representative responsible for compliance with 310 CMR 7.29 shall indicate whether the status of all provisionally certified

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data was resolved and all necessary quarterly reports were submitted.

c. A statement certifying that the MWhs of net electrical output used in compliance calculations reflect the total actual electrical output of the facility used by the New England Independent System Operator to determine settlement resources of energy market participants.

d. A statement notifying the Department of any changes in the method of operation at the affected facility or the method of monitoring the units at the affected facility during the previous year. If a change is reported, then specify the nature of the change, the reason for the change, when the change occurred, and how the facility's compliance status was determined subsequent to the change, including what method was used to determine emissions when a change mandated the need for monitor re-certification.

e. A certification statement stating (verbatim): "I am authorized to make this submission on behalf of the owners, lessees, operators and controllers of the affected facilities for which the submission is made. I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines or imprisonment."

5. When choosing to comply with the removal efficiency standards of 310 CMR 7.29(5)(a)3.e.i. or f.i., provide removal efficiency for each of the preceding 12 months, and each of the 12 consecutive rolling month time periods, for individual units and as a facility total for all units included in the calculation demonstrating compliance.

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(c) The Department may verify compliance by whatever means necessary, including but not limited to:

1. Inspection of a unit's operating records;
2. Requiring the person who owns, leases, operates or controls an affected facility to submit information on actual electrical output of company generating units provided to that person by the New England Independent System Operator;
3. Testing emission monitoring devices; and,
4. Requiring the person who owns, leases, operates or controls an affected facility to conduct emissions testing under the supervision of the Department.

(d) Any person who owns, leases, operates or controls an affected facility shall keep all measurements, data, reports and other information required by 310 CMR 7.29 for five years, or any other period consistent with the affected facility's operating permit.

(e) For units that apply carbon or other sorbent injection for mercury control, the following records shall be kept until such time as a mercury monitoring system is installed at that unit:

1. The average carbon or other sorbent mass feed rate (in lbs/hr) estimated during the initial mercury optimization test and all subsequent mercury emissions tests, with supporting calculations.
2. The average carbon or other sorbent mass feed rate (in lbs/hr) estimated for each hour of operation, with supporting calculations.
3. The total carbon or other sorbent usage for each calendar quarter, with supporting calculations.
4. The carbon or other sorbent injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon or other sorbent feed rate.
5. Identification of the calendar dates when the average carbon or other sorbent mass feed rate recorded under 310 CMR 7.29(7)(e)2. was less than the hourly carbon feed rate estimated during and recorded under 310 CMR 7.29(7)(e)1., with reasons for such feed rates and a description of corrective actions taken.

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6. Identification of the calendar dates when the carbon injection or other sorbent system operating parameter(s) that are the primary indicator(s) of carbon or other sorbent mass feed rate recorded under 310 CMR 7.29(7)(e)4. are below the level(s) estimated during the optimization tests for mercury with reasons for such occurrences and a description of corrective actions taken.

(f) For units that apply technology other than carbon or other sorbent for mercury control, the operating parameter records to be kept until such time as a mercury monitoring system is installed at that unit shall be proposed to the Department in the emission control plan application required under 310 CMR 7.29(6)(a)3.

~~(g)~~ Any person subject to 310 CMR 7.29(5)(a)3. shall submit the results of all mercury emissions, monitor, and optimization test reports, along with supporting calculations, to the Department within 45 days after completion of such testing.

~~(h)~~ Any person subject to 310 CMR 7.29(5)(a)3. shall submit electronic quarterly reports to the Department of hourly mercury emissions data in a manner consistent with 310 CMR 7.00: Appendix D and specified by the Department. Each electronic report must be submitted to the Department within 45 days following the end of each calendar quarter, beginning with emissions occurring no later than [insert date of promulgation].

1. Notwithstanding 310 CMR 7.29(7)(h), a unit with an enforceable commitment to terminate operations by September 30, 2010 is not required to submit electronic quarterly reports of hourly mercury emissions data to the Department until 45 days after the end of the first calendar quarter in which such unit emits emissions after September 30, 2010. Such electronic report shall contain hourly emissions starting with the first hour the unit emits after September 30, 2010.

Deleted: (g) For mercury monitoring, recordkeeping and reporting, any person who owns, leases, operates or controls an EGU (as defined in 40 CFR 60.24(h)(8)) at an affected facility shall comply with all mercury monitoring, recordkeeping and reporting requirements in 40 CFR Part 75 and "Monitoring and Reporting" in 40 CFR Part 60 Subpart HHHH and any additional mercury monitoring, recordkeeping and reporting requirements the Department deems necessary and specifies in the facility's ECP or mercury monitoring plan approval. In implementing the provisions of 40 CFR Part 75 and 40 CFR Part 60 Subpart HHHH concerning monitoring of mercury mass emissions, the terms used therein shall have the meanings defined in 40 CFR Part 72 and Part 60 respectively; provided, however, that the term permitting authority shall mean the Department, the term Hg Budget Trading Program shall mean 310 CMR 7.02 and 7.29, and the term Hg Budget unit shall mean an EGU (as defined in 40 CFR 60.24(h)(8)).¶

(h) For selection of a Hg Designative Representative, any person who owns, leases, operates or controls an EGU (as defined in 40 CFR 60.24(h)(8)) at an affected facility must select a Hg Designated Representative for each affected facility, and may select an Alternate Hg Designated Representative, pursuant to the requirements of "Hg Designated Representative For Hg Budget Sources" in 40 CFR Part 60 Subpart HHHH. In implementing the provisions of 40 CFR Part 60 Subpart HHHH, the terms used in that subpart shall have the meanings defined in 40 CFR Part 60; provided, however, that the term permitting authority shall mean the Department, the term Hg Budget Trading Program shall mean 310 CMR 7.02 and 7.29, and the term Hg Budget unit shall mean an EGU (as defined in 40 CFR 60.24(h)(8)).¶

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the equipment required under 40 CFR 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 40 CFR Part 75. The following systems are the principal types of CEMS required under 40 CFR 60.4170 through 60.4176:

(a) 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);

(b) 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 ($\mu\text{g}/\text{dscm}$);

(c) A moisture monitoring system, as defined in 40 CFR 75.11(b)(2) and providing a permanent, continuous record of the stack gas moisture content, in percent H_2O .

(d) 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

(e) 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 .