

Electric Generating Unit Rule, Chapter 173-406 WAC

[Formerly the Acid Rain Rule]

Unavailable section numbers: 100; 101; 102; 103; 104; 105; 106; 200; 201; 202; 300; 301; 302; 303; 400; 401; 402; 500; 501; 502; 600; 601; 602; 603; 604; 605; 700; 701; 702; 703; 704; 705; 706; 800; 801; 802; 900; 950

This revised rule addresses emissions from “electric generating units” in both the federal Acid Rain Program and coal-fired power plants. There are slight differences in how each rule defines those units. We have updated and replaced the existing Acid Rain Rule with the federal requirements. The rule also adopts requirements for mercury emissions from electric generating units using coal and fulfills the requirements under 40 CFR 60.24(h) that the state adopt emissions standards and compliance schedules to attain and maintain our mercury emissions budget.

Subpart A: Adoption by reference

WAC 173-406-001 **Adoption by reference.**

The following provisions of the code of federal regulations, as they exist on July 1, 2006¹, are adopted by reference:

- (1) 40 CFR Part 60, Subpart HHHH (Emission Guidelines and Compliance Times for Coal-fired Electric Steam Generating Units). Exceptions are listed in (2) of this section.
- (2) Exceptions to adopting 40 CFR Part 60, Subpart HHHH, by reference:
 - (a) The following sections are adopted by reference until midnight, December 31, 2012:
 - (A) 40 CFR 60.4101;
 - (B) 40 CFR 60.4106(c) and (d);
 - (C) 40 CFR 60.4107 – 60.4108;
 - (D) 40 CFR 60.4151 – 60.4152;
 - (E) 40 CFR 60.4154 – 40 CFR 60.4155; and
 - (F) 40 CFR 60.4175.
 - (b) The following sections are not adopted by reference:
 - (A) 40 CFR 60.4104;
 - (B) 40 CFR 60.4105;
 - (C) 40 CFR 60.4140;
 - (D) 40 CFR 60.4141;
 - (E) 40 CFR 60.4142;
 - (F) 40 CFR 60.4153;
 - (G) 40 CFR 60.4156;
 - (H) 40 CFR 60.4161;
 - (I) 40 CFR 60.4162
- (3) 40 CFR Part 72 Permits Regulation

¹ EPA proposing revisions to Part 75 monitoring so this date will change.

- (4) 40 CFR Part 73 Sulfur Dioxide Allowance System
- (5) 40 CFR Part 74 Sulfur Dioxide Opt-Ins
- (6) 40 CFR Part 75 Continuous Emission Monitoring
- (7) 40 CFR Part 76 Acid Rain Nitrogen Oxides Emission Reduction Program
- (8) 40 CFR Part 77 Excess Emissions
- (9) 40 CFR Part 78 Appeal Procedures

The term "permitting authority" shall mean Ecology, the local air agencies or the Energy Facility Site Evaluation Council, as appropriate, and the term "Administrator" shall mean the Administrator of the Environmental Protection Agency.

Federal rules are available electronically on the internet through the U.S. Government Printing Office website at <http://www.gpoaccess.gov/cfr/index.html>.

Subpart B: Acid Rain Program Requirements

WAC 173-406-002 Policy and purpose.

The purpose of this subpart is to require that the federal Acid Rain rules apply in Washington State. Electric generating units subject to the federal rules must comply with the requirements of 40 CFR parts 72 through 78, adopted by reference in WAC 173-406-001.

Subpart C: Control of Mercury Emissions from Coal-Fired Electric Generating Units²

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² The Table of Contents is included to make it easier for us to look at the outline of this proposal. It won't be in the proposed rule. The examples would be in the proposed rule but removed for the adopted version.

WAC 173-406-003 Policy and purpose.

- (1) The purpose of this subpart is to control mercury emissions from coal-fired electric generating units in Washington called mercury budget units and to ensure that the state attains and maintains its federal mercury emissions cap established by EPA in 40 CFR 60.24(h).
- (2) Ecology, local air agencies, and EFSEC (Energy Facility Site Evaluation Council) regulate mercury budget units in Washington. Ecology and local air agencies issue permits for certain existing units and all new units less than 350 megawatts. EFSEC issues permits for certain existing and all new units above 350 megawatts. Ecology will maintain the Washington State Mercury Allowance Program for all of the permitting agencies. EFSEC and the local air agencies will coordinate with Ecology to ensure that the statewide mercury budget is preserved.

WAC 173-406-004 Applicability.

The following stationary coal-fired boilers and stationary coal-fired combustion turbines are mercury budget units, and any source that includes (owns?) one or more of these units will be subject to this subpart:

- (1) A stationary coal-fired boiler or stationary, coal-fired combustion turbine serving at any time since the start-up of the unit's combustion chamber a generator with a nameplate capacity of more than 25 megawatts electric (MWe) and producing electricity for sale.
- (2) A cogeneration unit serving a generator with a nameplate capacity of more than 25 MW and supplying in any calendar year more than one-third of its potential electric output capacity or 219,000 megawatt hours (MWh), whichever is greater, to any utility power distribution system for sale. On the day a coal-fired mercury budget unit no longer qualifies as a cogeneration unit, it becomes subject to subsection (1) of this section.
- (3) An integrated gasification-combined cycle electric utility steam generating unit (IGCC) that burns a synthetic gas derived from coal in a combined-cycle gas turbine. An IGCC that does not use any coal in production of the synthetic gas is not subject to this rule.

WAC 173-406-005 Definitions.

The definitions in 40 CFR 60.4102 apply throughout this rule. Some of those definitions are included here to assist in understanding this rule.

- (1) "Mercury budget source" means a source that includes one or more mercury budget units.
- (2) "Mercury budget unit" means a unit that is subject to the mercury budget trading program under 40 CFR 60.4104.
- (3) "Mercury designated representative" means, for a mercury budget source and each mercury 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 40 CFR 60.4110 through 60.4114, to represent and legally bind each owner and operator in matters pertaining to the mercury budget trading program.
- (4) IGCC
- (5) etc

Trading Program

WAC 173-406-006 **Washington mercury allowance allocation for calendar years 2010, 2011, and 2012.**

- (1) For calendar years 2010, 2011, and 2012, mercury budget sources in Washington State can participate in the national mercury emissions market operated by the EPA Clean Air Market Division.
- (2) A mercury budget unit that retires during calendar years 2010, 2011, or 2012 loses its mercury allocation upon retirement.
- (3) The Washington State trading budget for mercury emissions is 6336 ounces per year [396 lbs per year] for 2010, 2011, and 2012.
- (4) The mercury emissions trading budget is distributed as follows:
 - (a) Existing unit account held by TransAlta Centralia Generation LLC for units BW21 and BW22: 4435 ounces per year [277.2 pounds per year]. [reader note: 70% of budget]
 - (b) General account held by Ecology: 1901 ounces per year [118.8 pounds per year].
 - (i) 317 ounces per year [19.8 pounds] will be designated by Ecology for use by new mercury budget units. This amount may be distributed to the supplemental emissions account if there are no requests from a new mercury budget unit.
 - (ii) 1584 ounces per year [99 pounds] will be designated by Ecology for use as a supplemental mercury emissions account.

WAC 173-406-007 **Process to request a mercury emissions allowance during 2010, 2011, and 2012**

- (1) For each calendar year 2010, 2011, and 2012, additional mercury emissions allowances are available for a mercury budget source that:
 - (i) is a new source needing a mercury emissions allowance; or
 - (ii) is an existing or new mercury budget unit that emits more mercury than its mercury emissions allowance.
- (2) During calendar years 2010, 2011, and 2012, a mercury designated representative of the mercury budget unit may request a mercury emissions allowance from the new unit pool beginning with its first year of operation and continuing through its fifth year of operation.³
- (3) The mercury designated representative of an existing or new mercury budget unit must submit a request to Ecology to be allocated a mercury emissions allowance from the

³ After 5 years a new plant becomes vested in the system and all allocations would be prorated to include the new plant. We do not need to include language on this because we don't expect to have any new plants operating this length of time.

general account established in WAC 173-406-006(4)(b) on or before February 1 of the year following the calendar year for which the mercury allowances are requested. A request for allowances must include information sufficient to demonstrate the mass of mercury emitted by the unit for which allowances are requested, including at a minimum:⁴

- (a) A statement of mercury emission measurement methodologies used to determine mass of mercury emitted by the unit in the applicable control period;
 - (i) Total annual unit operating hours and gross and net electrical output;
 - (ii) Unit downtime and, if applicable, mercury continuous emission monitoring system downtime; and
 - (iii) A summary of data substitutions made and the reason for such substitutions.
 - (b) The request for mercury allowances must not exceed the mercury budget unit's permitted levels or available allocation, whichever is less.
 - (c) The mercury allowance allocation request must be based on ounces of mercury per net megawatt hours produced.
- (4) Ecology must review each mercury allowance allocation request under (3) of this section and transfer the requested mercury allowances to the mercury budget unit's compliance account according to 40 CFR 60.4160 within 10 business days if the request satisfies each of these requirements:
- (a) The request meets the requirements of (1), (2), and (3) of this section.
 - (b) Allowances from the New Unit account.
 - (i) If the sum of all mercury allowances requested for new mercury budget units is equal to or less than 317 ounces [19.8 lbs], Ecology will transfer mercury allowances from the state general account to the compliance account for the mercury budget source equal to the number requested.
 - (ii) If the sum of all mercury allowances requested is greater than 317 ounces [19.8 lbs], Ecology will transfer mercury allowances from the state general account to the compliance account for the mercury budget source on a prorated basis using the total net megawatts hours of all eligible requests.
 - (c) Allowance from the Supplemental account.

For each mercury budget source that has been allocated mercury allowances in an amount less than that of the total actual emissions for the preceding control period, Ecology will transfer mercury allowances from the state general account to the compliance account for the mercury budget source following this priority:

 - (i) Mercury budget source operating before January 1, 2007; and
 - (ii) All new mercury budget sources.
- (5) Ecology will notify each mercury designated representative of the amount of mercury allowances transferred to their compliance account.

⁴ Plant final mercury emissions report for previous calendar year is due on Jan 31 to EPA.
Draft Electric Generating Unit Rule: Oct 17, 2006
Chapter 173-406 WAC

(6) Ecology may transfer allowances from its general account to a compliance account for a mercury budget source. The total amount of allowances allocated and transferred in each control period must not exceed 1901 ounces per year [118.8 pounds per year].

(7) Ecology will post this information on the Air Quality Program internet website.

Non Trading Program

WAC 173-406-008 Washington mercury allowance allocation for calendar year 2013 and beyond

- (1) Beginning on January 1, 2013 and beyond, mercury budget units in Washington State are not allowed to participate in the national mercury emissions market operated by the EPA Clean Air Market Division.
- (2) Mercury emissions from all mercury budget sources are limited to 2496 ounces per year [156 lbs per year]. Exceptions to this statewide limit for calendar years 2013 through 2016 are listed in (4) of this section for the Temporary Alternate Standard Emissions Pool and WAC 173-406-011.
- (3) Starting with calendar year 2013, the mercury emissions identified in (2) of this sub-section are distributed as follows:
 - (a) Ecology will hold the entire Washington State mercury emissions budget allocated by EPA under 40 CFR 60.24(h)(3). At the end of each calendar year, Ecology will instruct EPA to permanently retire all Washington State mercury emissions allowances.
 - (b) A public health set aside of 250 ounces of mercury emissions is unavailable for use by mercury budget units.
 - (c) A mercury budget unit must meet the emission standards in WAC 173-406-010.
 - (d) For mercury budget units with a notice of construction approval order, a prevention of significant deterioration permit or a site certification agreement issued by December 31, 2009, your mercury emissions are the more restrictive of:
 - (i) The emissions standard in WAC 173-406-010; or
 - (ii) Best Available Control Technology (BACT) emission limitation contained in the unit's permit or site certification agreement.
 - (e) For mercury budget units with a notice of construction approval order, a prevention of significant deterioration permit or a site certification agreement issued between January 1, 2010 and December 31, 2012, your mercury emissions are the more restrictive of:
 - (i) The emissions standard in WAC 173-406-010 or the Best Available Control Technology (BACT) emission limitation contained in the unit's permit or site certification agreement; and one of the following options:

Stakeholder discussion: Which of these options make best sense? Is it one option or should all options to be included in the rule?

Option 1:

- (A) Based on available unused mercury emissions determined by formula in (3)(f) of this section [1763 ounces subtracting Existing Permit Emissions Limits]. If the amount is less than zero, continue to (3)(e) of this subsection.
- (B) Prorated based on the sum of all megawatt hours from coal-fired power plants;
or

Option 2:

- (C) If the amount in the new mercury budget source account is less than zero or is less than the mercury emissions determined by the more restrictive of the emissions standard in WAC 173-406-009 or the BACT emissions limit in the permit, the mercury budget source may request an amount up to actual emissions from the Temporary Alternate Standard Emissions Pool. This request is available for each calendar year 2013 through 2016.

- (f) For mercury budget units with a notice of construction approval order, a prevention of significant deterioration permit or a site certification agreement issued after December 31, 2012.
 - (i) The amount of mercury emissions available, in ounces per year, for use by a new mercury budget unit will be determined using this formula:

New Source Allowance in ounces per year = 1763 – EPL

EXAMPLE:

New Source Allowance = 2496 – 250 – [amt from emissions standard in rule] – [amt from emissions std in rule] – ?
Example -TransAlta Pacific Mountain Energy Center

- 2496 = Mercury Emissions Allocation for 2013 forward in ounces per year
- 250 = Public Health Set Aside in ounces per year
- EPL = Existing Permit Limit means the sum, in ounces per year, of the permitted mercury emissions from each mercury budget unit in Washington State that prior to the date of the request, has been issued any of the following permits: a mercury air operating permit; a notice of construction order of approval; a prevention of significant deterioration permit; or a site certification agreement.

- (ii) Mercury budget units must meet the more restrictive of the Best Available Control Technology (BACT) emission limitation contained in the unit’s permit or site certification agreement or the new mercury budget unit allocation available as calculated in (3)(f) of this section.

- (4) Temporary Alternate Standard Mercury Emissions Pool. 3200 ounces [200 pounds per year] of mercury emissions are available for allocation for each calendar year 2013 through 2016 through the Temporary Alternate Standard in WAC 173-406-011.

WAC 173-406-009 Allocation Determination

- (1) By __Date__ of each year, Ecology will determine the mercury emissions allocation in WAC 173-406-008(3) and notify each representative of the mercury budget unit.

- (2) A mercury budget source may submit a request to Ecology for an additional mercury emissions allocation from the Temporary Alternate Standard emissions pool during calendar year 2013 through 2016 if one of the following conditions exist:
 - (a) A mercury budget source is applying for a Temporary Alternate Standard under WAC 173-406-011; or
 - (b) An allocation to a mercury budget source that received a permit before January 1, 2012 is less than the amount it would receive by applying the emissions standard in WAC 173-406-010 to the source.
- (3) Ecology will prorate emissions based on megawatt hours.

WAC 173-406-0010 Emission standards for a mercury budget unit.

- (1) Beginning on January 1, 2013, the rolling 12 month average mercury emissions from a mercury budget unit must not exceed 0.00XX pounds of mercury per gigawatt hour. Exceptions are listed in WAC 173-406-011.
- (2) Compliance with the emission standards in (1) of this section or the Temporary Alternate Standard in WAC 173-406-011 must be determined using procedures in 40 CFR 60.50a(h).
- (3) The owner or operator of a mercury budget unit subject to this rule must measure, record, and report the mercury in the exhaust gases following the requirements and procedures contained in 40 CFR 60.4170 – 60.4176, and 40 CFR Part 75, Subpart I.

WAC 173-406-0011 Temporary Alternate Standard for Calendar Years 2013 through 2016.

- (1) The owner or operator of a mercury budget unit will not be subject to a compliance action for failure to meet the emissions standard in WAC 173-406-010(1) if all of the following conditions are satisfied:
 - (a) The owner or operator of the mercury budget unit has installed and operated mercury control technology or boiler technology or has followed practices projected to meet the emission standard in WAC 173-406-010(1);
 - (b) The owner or operator has maintained the electric generating plant, including all associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing mercury emissions;
 - (c) The control strategy has failed to result in emissions meeting the standard in WAC 173-406-010(1);
 - (d) The owner or operator notifies the permitting agency and Ecology of the failure to comply with WAC 173-406-010(1) by December 30, 2013; and
 - (e) By February 1, 2014, the owner or operator files an request for a compliance order that includes at a minimum:

- (i) A compliance schedule providing for compliance with the base standard as soon as practicable but no later than January 1, 2017,
 - (ii) A listing of actions to be taken to minimize mercury emissions, and
 - (iii) Other information necessary to support the request.
- (2) The compliance order issued in response to (1)(e) of this section must include the following terms:
 - (a) An emission limit in pounds per trillion British thermal unit, heat input rate, that the monitoring data for the mercury budget unit indicates can be achieved with controls and practices in place on the date the revision is issued;
 - (b) An expiration date for the emission limit established under (2)(a) of this section of January 1, 2017, or the earliest date by which compliance with WAC 173-406-010(1) can be achieved; and
 - (c) A requirement that emissions for the twelve calendar months beginning with the expiration date established under (2)(b) of this section, and each subsequent twelve month period, must meet the limit in WAC 173-406-010(1).
 - (d) Mercury emissions from the temporary alternate standard mercury emissions pool will be added to the emissions available to the mercury budget unit through WAC 173-406-010(1). The mercury emissions from the Temporary Alternate Standard emissions pool will not exceed 3200 ounces [200 lbs] per year.

WAC 173-406-0012 Compliance with Washington State mercury emissions budget beginning on January 1, 2013.

- (1) Beginning on January 1, 2013, the mercury allowance available for new mercury budget units, in ounces of mercury per year, is calculated according to WAC 173-406-008(f).
- (2) Condition for automatic denial of permit: A permitting authority will deny an order of approval for a new source or modification under Chapters 173-400 or 173-460 WAC or a site certification agreement under Chapter 463-78 WAC, if the mercury emissions at design capacity of the proposed project (after application of BACT) exceeds the available mercury allowance calculated using the formula in WAC 173-406-008(f).
- (3) To ensure that the state mercury budget is not exceeded each calendar year from 2013 forward, the owner or operator of each mercury budget unit must:
 - (a) Evaluate the 12 month rolling total mercury emissions from that unit and compare that total to the mercury emission limitation for the unit. In any calendar month, if the 12 month rolling total is more than 90% of the emission limit, the owner or operator of the unit must take actions necessary to ensure the limit is not exceeded. Such actions may include:
 - (i) Reduction in operations in the succeeding months adequate to ensure compliance;
 - (ii) Temporary action necessary to increase the effectiveness of the mercury control system; or
 - (iii) Other actions necessary to ensure the limit is met for the 12 month period ending on midnight December 31st.

- (b) If, as of midnight, December 31st, the unit is above its annual mercury emission limitation, then the owner of the unit will:
 - (i) Immediately reduce its mercury emissions by an amount equal to the amount of excess emissions during January so that the 12 month rolling total at the end of January is in compliance with the rule.
 - (ii) The mercury budget source and Ecology will deduct two times the number of ounces of the source's excess emissions from its annual mercury emissions limit for the following calendar year.
- (4) Balancing the state budget on January 1, 2017.
 - (a) Ecology must determine by September 30, December 2016 that the sum of mercury emissions from all mercury budget units in Washington will be greater than 2246 ounces on January 1, 2017.
 - (b) Ecology must notify all mercury budget units of their revised mercury emissions based on a prorated percentage of 2246 ounces of mercury per year based on the total net megawatt hours from all mercury budget units.
 - (c) The mercury budget source must submit a revision to its mercury budget permit that is part of its air operating permit to reflect the new emissions number.
 - (d) The adjusted mercury allowance will be effective beginning on January 1, 2017.

EXAMPLE of a calculation if there were 4 plants in Washington:

Plant A = 1404 MWh (mercury sum rounds to 144 lbs mercury/yr)
 Plant B = 600 MWh
 Plant C = 300 MWh
 Plant D = 600 MWh

$$\text{Plant A allocation} = \frac{1404 \text{ MWh}}{1404 \text{ MWh} + 600 \text{ MWh} + 300 \text{ MWh} + 600 \text{ MWh}} = 48\% \text{ of } 2246 \text{ oz mercury} = 1078 \text{ oz/yr [67 lbs/yr]}$$

$$\text{Plant B allocation} = \frac{600 \text{ MWh}}{1404 \text{ MWh} + 600 \text{ MWh} + 300 \text{ MWh} + 600 \text{ MWh}} = 21\% \text{ of } 2246 \text{ oz mercury} = 472 \text{ oz/yr [29.5 lbs/yr]}$$

$$\text{Plant C allocation} = \frac{300 \text{ MWh}}{1404 \text{ MWh} + 600 \text{ MWh} + 300 \text{ MWh} + 600 \text{ MWh}} = 13\% \text{ of } 2246 \text{ oz mercury} = 292 \text{ oz/yr [18 lbs/yr]}$$

$$\text{Plant D allocation} = \frac{600 \text{ MWh}}{1404 \text{ MWh} + 600 \text{ MWh} + 300 \text{ MWh} + 600 \text{ MWh}} = 21\% \text{ of } 2246 \text{ oz mercury} = 472 \text{ oz/yr [29.5 lbs/yr]}$$

WAC 173-406-0013 Public involvement.

Ecology will post on the Air Quality Program web site a copy of each of the following:

- (1) New mercury budget unit notice of intent to submit an initial mercury allowance request;
- (2) New mercury budget unit allocation recommendations for allocation by permitting authorities;
- (3) New mercury budget unit or source allocations granted by Ecology;
- (4) Supplemental Pool allocation requests and allocation approvals granted by Ecology;
- (5) Requests for a Temporary Alternate Standard and decisions on those requests; and

- (6) Requests for an emissions allowance from the Temporary Alternate Standard Emissions Pool and decisions on those requests.
- (7) Ecology will maintain an electronic list serve of interested parties on this topic and will notify them electronically when new items are posted.

General Regulations for Air Pollution Sources, Chapter 173-400 WAC

WAC 173-400-112 **Requirements for new sources in nonattainment areas.**

- (2) The permitting authority that is reviewing an application to establish a new source in a nonattainment area must issue the order of approval if it determines that the proposed project satisfies each of the following requirements:

...

- (j) If the proposed new stationary source or the proposed modification is subject to 40 CFR Part 60, Subpart Da, Standards Of Performance For Electric Utility Steam Generating Units For Which Construction Is Commenced After September 18, 1978, the design capacity of the proposal must not exceed the available mercury emissions allocation established in WAC 173-406-008(3)(e).

WAC 173-400-113 **Requirements for new sources in attainment or unclassifiable areas.**

The permitting authority that is reviewing an application to establish a new source or modification in an attainment or unclassifiable area must issue an order of approval if it determines that the proposed project satisfies each of the following requirements:

...

- (7) If the proposed new stationary source or the proposed modification is subject to 40 CFR Part 60, Subpart Da, Standards Of Performance For Electric Utility Steam Generating Units For Which Construction Is Commenced After September 18, 1978, the design capacity of the proposal must not exceed the available mercury emissions allocation established in WAC 173-406-008(3)(e)