

Chapter 463-85 WAC

GREENHOUSE GASES EMISSIONS PERFORMANCE STANDARD AND SEQUESTRATION PLANS AND PROGRAMS FOR BASELOAD ELECTRIC GENERATING FACILITIES

WAC

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WAC 463-85-005 Work in unison. The requirements of this chapter are based upon chapter 80.80 RCW and are separate and distinct from the requirements found in chapter 463-80 WAC carbon dioxide mitigation that are based upon chapter 80.70 RCW. These two requirements are required to work in unison with each other in a serial manner. The first requirement is the emissions performance standard under this chapter. Once that standard is met, the requirements of chapters 80.70 RCW and 463-80 WAC are applied.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-005, filed 6/25/08, effective 7/26/08.]

WAC 463-85-100 Policy and purpose. It is the intent of the legislature, under chapter 80.80 RCW, to establish statutory goals for the statewide reduction of greenhouse gases emissions. The legislature further intends by chapter 80.80 RCW to authorize immediate actions in the electric power generation sector for the reduction of greenhouse gases emissions.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-100, filed 6/25/08, effective 7/26/08.]

WAC 463-85-110 Definitions. The following definitions apply when these terms are used in the provisions of this chapter.

"Average available greenhouse gases emissions output" means the level of greenhouse gases emissions as surveyed and determined by the energy policy division of the department of community, trade, and economic development under RCW 80.80.050.

(6/25/08)

"Baseload electric generation" means electric generation from a power plant that is designed and intended to provide electricity at an annualized plant capacity factor of at least sixty percent. For a cogeneration facility, the sixty percent annual capacity factor applies to only the electrical production intended to be supplied for sale. For purposes of this rule, designed means originally specified by the design engineers for the power plant or generating units (such as simple cycle combustion turbines) installed at a power plant; and intended means allowed for by the current permits for the power plant, recognizing the capability of the installed equipment or intent of the owner or operator of the power plant.

"Baseload electric cogeneration facility" means a cogeneration facility that provides baseload electric generation.

"Baseload electric generation facility" means a power plant that provides baseload electric generation.

"Benchmark" means a planned quantity of the greenhouse gases to be sequestered each calendar year at a sequestration facility as identified in the sequestration plan or sequestration program.

"Bottoming-cycle cogeneration facility" means a cogeneration facility in which the energy input to the system is first applied to a useful thermal energy application or process, and at least some of the reject heat emerging from the application or process is then used for electrical power production.

"Change in ownership" as related to cogeneration plants means a new ownership interest in the electric generation portion of the cogeneration facility or unit.

"Cogeneration facility" means a power plant in which the heat or steam is also used for industrial or commercial heating or cooling purposes and that meets Federal Energy Regulatory Commission standards for qualifying facilities under the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. Sec. 824a-3), as amended. In general, a cogeneration facility is comprised of equipment and processes which through the sequential use of energy is used to produce electric energy and useful thermal energy (such as heat or steam) that is used for industrial, commercial, heating, or cooling purposes.

"Combined-cycle natural gas thermal electric generation facility" means a power plant that employs a combination of one or more gas turbines and steam turbines in which electricity is produced in the steam turbine from otherwise lost waste heat exiting from one or more of the gas turbines.

"Commence commercial operation" means, in regard to a unit serving an electric generator, to have begun to produce steam or other heated medium, or a combustible gas used to generate electricity for sale or use, including test generation.

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"Consumer-owned utility" means a municipal utility formed under Title 35 RCW, a public utility district formed under Title 54 RCW, an irrigation district formed under chapter 87.03 RCW, a cooperative formed under chapter 23.86 RCW, a mutual corporation or association formed under chapter 24.06 RCW, or port district within which an industrial district has been established as authorized by Title 53 RCW, that is engaged in the business of distributing electricity to more than one retail electric customer in the state.

"Department" or "ecology" means the department of ecology.

"Electric generating unit (EGU)" is the equipment required to convert the thermal energy in a fuel into electricity. In the case of a steam electric generation unit, the EGU consists of all equipment involved in fuel delivery to the plant site, as well as individual boilers, any installed emission control equipment, and any steam turbine/generators dedicated to generating electricity. Where a steam turbine/generator is supplied by two or more boiler units, all boilers contributing to that steam turbine/generator comprise a single electric generating unit. All combustion units/boilers/combined-cycle turbines that produce steam for use in a single steam turbine/generator unit are part of the same electric generating unit.

Examples:

(a) For an integrated gasification combined-cycle combustion turbine plant, the EGU consists of all equipment involved in fuel delivery to the unit, as well as all equipment used in the fuel conversion and combustion processes, any installed emission control equipment, and all equipment used for the generation of electricity.

(b) For a combined-cycle natural gas fired combustion turbine, the EGU begins at the point where natural gas is delivered to the plant site and ends with the generation of electricity from the combustion turbine and from steam produced and used on a steam turbine.

(c) An EGU also concludes fuel cells fueled by hydrogen produced:

(i) In a reformer utilizing nonrenewable fuels; or

(ii) By a gasifier producing hydrogen from nonrenewable fuels.

"EFSEC" or "council" means the energy facility site evaluation council.

"Electric utility" means an electrical company or a consumer-owned utility.

"Electrical company" means a company owned by investors that meets the definition of RCW 80.04.010.

"Fossil fuel" means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material to produce heat for the generation of electricity.

"Greenhouse gases" includes carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

"Long-term financial commitment" means:

(a) Either a new ownership interest in baseload electric generation or an upgrade to a baseload electric generation facility; or

(b) A new or renewed contract for baseload electric generation with a term of five or more years for the provision of retail power or wholesale power to end-use customers in this state.

"MWh" = megawatt-hour electricity.

"MWh_{eq}" = megawatt-hour equivalent electrical energy of useful thermal energy output. 1 MWh_{eq} = 3.413 million Btu of thermal energy.

"New ownership interest" means a change in the ownership structure of a baseload power plant or a cogeneration facility or the electrical generation portion of a cogeneration facility affecting at least:

(a) Five percent of the market value of the power plant or cogeneration facility; or

(b) Five percent of the electrical output of the power plant or cogeneration facility.

The above thresholds apply to each unit within a multi-unit generation facility.

"Permanent sequestration" means the retention of greenhouse gases in a containment system using a method that is in accordance with standards approved by the department of ecology and that creates a high degree of confidence that substantially ninety-nine percent of the greenhouse gases will remain contained for at least one thousand years.

"Plant capacity factor" means the ratio of the electricity produced during a given time period, measured in kilowatt-hours, to the electricity the unit could have produced if it had been operated at its rated capacity during that period, expressed in kilowatt-hours.

"Power plant" means a facility for the generation of electricity that is permitted as a single plant by the energy facility site evaluation council. A power plant may be comprised of one or more individual electrical generating units, each unit of which can be operated or owned separately from the other units.

"Regulated greenhouse gases emissions" is the mass of carbon dioxide emitted plus the mass of nitrous oxide emitted plus the mass of methane emitted. Regulated greenhouse gases emissions include carbon dioxide produced by a sulfur dioxide control system such as a wet limestone scrubber system.

"Renewable fuel" means:

(a) Landfill gas;

(b) Biomass energy utilizing animal waste, solid organic fuels from wood, forest, or field residues or dedicated energy crops that do not include wood pieces that have been treated with chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenic;

(c) By-products of pulping or wood manufacturing processes, including but not limited to bark, wood chips, sawdust, and lignin in spent pulping liquors; or

(d) Gas from sewage treatment facilities.

"Renewable resources" means electricity generation facilities fueled by renewable fuels plus electricity generation facilities fueled by:

(a) Water;

(b) Wind;

(c) Solar energy;

(d) Geothermal energy; or

(e) Ocean thermal, wave, or tidal power.

"Sequential use of energy" means:

(a) For a topping-cycle cogeneration facility, the use of reject heat from a power production process in sufficient amounts in a thermal application or process to conform to the requirements of the operating standard; or

(b) For a bottoming-cycle cogeneration facility, the use of reject heat from a thermal application or process, at least some of which is then used for power production.

"Sequestration plan" means a comprehensive plan describing how a plant owner or operator will comply with the emissions performance standard by means of sequestering greenhouse gases, where the sequestration will start after electricity is first produced, but within five years of the start of commercial operation.

"Sequestration program" means a comprehensive plan describing how a baseload electric generation plant's owner or operator will demonstrate compliance with the emissions performance standard at start of commercial operation and continuing unchanged into the future. The program is a description of how the facility meets the emissions performance standard based on the characteristics of the baseload electric generation facility or unit or by sequestering greenhouse gases emissions to meet the emissions performance standard with the sequestration starting on or before the start of commercial operation.

"Supplementary firing" means an energy input to:

(a) A cogeneration facility used only in the thermal process of a topping-cycle cogeneration facility;

(b) The electric generating process of a bottoming-cycle cogeneration facility; or

(c) Any baseload electric generation unit to temporarily increase the thermal energy that can be converted to electrical energy.

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

"Total energy input" means the total energy supplied by all fuels used to produce electricity in a baseload electric generation facility or unit.

"Total energy output" of a topping-cycle cogeneration facility or unit is the sum of the useful electrical power output and useful thermal energy output.

"Upgrade" means any modification made for the primary purpose of increasing the electric generation capacity of a baseload electric generation facility or unit. Upgrade does not include:

(a) Routine or necessary maintenance;

(b) Installation of emission control equipment;

(c) Installation, replacement, or modification of equipment that improves the heat rate of the facility; or

(d) Installation, replacement, or modification of equipment for the primary purpose of maintaining reliable generation output capability that does not increase the heat input or fuel usage as specified in existing generation air quality permits as of July 22, 2007, but may result in incidental increases in generation capacity.

"Useful energy output" of a cogeneration facility means the electric or mechanical energy made available for use, exclusive of any such energy used in the power production process.

"Useful thermal energy output" of a cogeneration facility means the thermal energy:

(a) That is made available to and used in an industrial or commercial process (minus any heat contained in condensate return and/or makeup water);

(b) That is used in a heating application (e.g., space heating, domestic hot water heating); or

(c) That is used in a space cooling application (i.e., thermal energy used by an absorption chiller).

"Waste gas" is refinery gas and other fossil fuel derived gases with a heat content of more than 300 Btu/standard cubic foot. Waste gas does not include gaseous renewable energy sources.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-110, filed 6/25/08, effective 7/26/08.]

WAC 463-85-120 Greenhouse gases emissions performance standard applicability. (1) This rule is applicable to all baseload electric generation facilities and units and baseload electric cogeneration facilities and units that:

(a) Are new and are permitted for construction and operation after June 30, 2008, and that utilize fossil fuel or nonrenewable fuels for all or part of their fuel requirements.

(b) Are existing and that commence operation on or before June 30, 2008, when the facility or unit's owner or operator engages in an action listed in subsection (3) or (4) of this section.

(2) This rule is not applicable to any baseload electric generation facility or unit or baseload electric cogeneration facility or unit that is designed and intended to utilize a renewable fuel to provide at least ninety percent of its total annual heat input.

(3) A baseload electric generation facility or an individual electric generating unit at a baseload electric generation facility is required to meet the emissions performance standard in effect when:

(a) The new baseload electric generation facility or new electric generating unit at an existing baseload electric generation facility is issued a notice of construction approval or a site certification agreement;

(b) The existing facility or a unit is upgraded; or

(c) The existing facility or a unit is subject to a new baseload electric long-term financial commitment.

(4) A baseload electric cogeneration facility or unit is required to meet the emissions performance standard in effect when:

(a) The new baseload electric cogeneration facility or new baseload electric cogeneration unit is issued a notice of construction approval or a site certification agreement;

(b) The existing facility or unit is upgraded; or

(c) The existing facility or unit is subject to a change in ownership.

(5) A new baseload electric generation facility or unit or new baseload electric cogeneration facility or unit becomes an existing baseload electric generation facility or unit or baseload electric cogeneration facility or unit the day it commences commercial operation.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-120, filed 6/25/08, effective 7/26/08.]

WAC 463-85-130 Emissions performance standard. (1) Beginning July 1, 2008, all baseload electric generation facilities or units and baseload electric cogeneration facilities

and units subject to WAC 463-85-120 are not allowed to emit to the atmosphere regulated greenhouse gases at a rate greater than 1100 pounds per megawatt-hour, annual average.

(2) All baseload electric generation facilities and units in operation on or before June 30, 2008, are deemed to be in compliance with the emissions performance standard until the facility or unit is subject to a new long-term financial commitment.

(3) All baseload electric cogeneration facilities and units in operation on or before June 30, 2008, and operating exclusively on natural gas, waste gas, a combination of natural and waste gases, or a renewable fuel, are deemed to be in compliance with the emissions performance standard until the facility or unit is subject to a new ownership interest or is upgraded. For purposes of WAC 463-85-130, exclusive use of renewable fuel shall mean at least ninety percent of total annual heat input by a renewable fuel.

(4) Compliance with the emissions performance standard may be through:

(a) Use of fuels and power plant designs that comply with the emissions performance standard without need for greenhouse gases emission controls; or

(b) Use of greenhouse gases emission controls and greenhouse gases sequestration methods meeting the requirements of WAC 463-85-220 or 173-218-115 as appropriate.

(5) The greenhouse gases emissions performance standard in subsection (1) of this section applies to all baseload electric generation for which electric utilities enter into long-term financial commitments on or after July 1, 2008.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-130, filed 6/25/08, effective 7/26/08.]

WAC 463-85-140 Calculating greenhouse gases emissions and determining compliance for baseload electric generation facilities. (1) The owner or operator of a baseload electric generation facility or unit that must demonstrate compliance with the emissions performance standard in WAC 463-85-130(1) shall collect the following data:

(a) Fuels and fuel feed stocks.

(i) All fuels and fuel feed stocks used to provide energy input to the baseload electric generation facility or unit.

(ii) Fuel usage and heat content, which are to be monitored, and reported as directed by WAC 463-85-230.

(b) Electrical output in MWh as measured and recorded per WAC 463-85-230.

(c) Regulated greenhouse gases emissions from the baseload electric generation facility or unit as monitored, reported and calculated in WAC 463-85-230.

(d) Adjustments for use of renewable resources. If the owner or operator of a baseload electric generation facility or unit adjusts its greenhouse gases emissions to account for the use of renewable resources, greenhouse gases emissions are reduced based on the ratio of the annual heat input from all fuels and fuel feed stocks and the annual heat input from use of nonrenewable fuels and fuel feed stocks. Such adjustment will be based on records of fuel usage and representative heat contents approved by EFSEC or ecology as appropriate.

(2) By January 31 of each year, the owner or operator of each baseload electric generation facility or unit subject to the monitoring and compliance demonstration requirements of this rule will:

(a) Use the data collected under subsection (1) of this section to calculate the pounds of regulated greenhouse gases emissions emitted per MWh of electricity produced during the prior calendar year by dividing the regulated greenhouse gases emissions by the total MWh produced in that year; and

(b) Submit that calculation and all supporting information to EFSEC.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-140, filed 6/25/08, effective 7/26/08.]

WAC 463-85-150 Calculating greenhouse gases emissions and determining compliance for baseload cogeneration facilities. (1) To use this section for determining compliance with the greenhouse gases emissions performance standard, a facility must have certified to the Federal Energy Regulatory Commission (FERC) under the provisions of 18 C.F.R. 292 Subpart B as a qualifying cogeneration facility.

(2) The owner or operator of a baseload electric cogeneration facility or unit that must demonstrate compliance with the emissions performance standard in WAC 463-85-130(1) shall collect the following data:

(a) Fuels and fuel feed stocks.

(i) All fuels and fuel feed stocks used to provide energy input to the baseload electric cogeneration facility or unit.

(ii) Fuel and fuel feed stocks usage and heat content, which are to be monitored, and reported as directed by WAC 463-85-230.

(b) Electrical output in MWh as measured and recorded per WAC 463-85-230.

(c) All useful thermal energy and useful energy used for nonelectrical generation uses converted to units of megawatts energy equivalent (MW_{eq}) using the conversion factor of 3.413 million British thermal units per megawatt hour (MMBtu/MWh).

(d) Regulated greenhouse gases emissions from the baseload electric cogeneration facility or unit as monitored, reported and calculated in WAC 463-85-230.

(e) Adjustments for use of renewable resources. If the owner or operator of a baseload electric cogeneration facility or unit adjusts its greenhouse gases emissions to account for the use of renewable resources, the greenhouse gases emissions are reduced based on the ratio of the annual heat input from all fuels and fuel feed stocks and the annual heat input from use of nonrenewable fuels and fuel feed stocks. Such adjustment will be based on records of fuel usage and representative heat contents approved by ecology.

(3) Bottoming-cycle cogeneration facilities. The formula to determine compliance of a bottoming-cycle cogeneration facility or unit with the emissions performance standard will be jointly developed by ecology and the facility. To the extent possible, the facility-specific formula must be based on the one for topping-cycle facilities identifying the amount of energy converted to electricity, thermal losses, and energy from the original fuel(s) used to provide useful thermal energy in the industrial process. The formula should be specific to the installed equipment, other thermal energy uses in the facility, and specific operating conditions of the facility.

(4) Topping-cycle cogeneration facilities. To demonstrate compliance with the emissions performance standard, a topping-cycle facility or unit must:

(a) Determine annual electricity produced in MWh.

(b) Determine the annual electrical energy equivalent of the useful thermal energy output in MWh_{eq} .

(c) Determine the annual regulated greenhouse gases emissions produced in pounds.

(5) By January 31 of each year, the owner or operator of each baseload electric cogeneration facility or unit subject to the monitoring and compliance demonstration requirements of this rule will:

(a) Calculate the pounds of regulated greenhouse gases emissions emitted per MWh of electricity produced during the prior calendar year by dividing the regulated greenhouse gases emissions by the sum of the MWh and MWh_{eq} produced in that year; and

(b) Submit that calculation and all supporting information to EFSEC or ecology as appropriate.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-150, filed 6/25/08, effective 7/26/08.]

WAC 463-85-200 Requirement for and timing of plan or program plan submittals. (1) A sequestration plan for a source that begins sequestration after the start of commercial operation shall be submitted when:

(a) A site certification application is submitted to EFSEC for a new baseload electric generation facility or baseload electric cogeneration facility or new unit at an existing baseload electric generation or baseload electric cogeneration facility;

(b) A site certification application is submitted to EFSEC for an upgrade to an existing baseload electric generation facility or unit or baseload electric cogeneration facility or unit that has a site certificate and the upgrade is not an exempt upgrade;

(c) A baseload electric generation facility or unit or baseload electric cogeneration facility or unit enters a new long-term financial commitment with an electric utility to provide baseload power and the facility or unit does not comply with the emissions performance standard in effect at the time the new long-term financial commitment occurs; or

(d) A qualifying ownership interest change occurs and the facility or unit does not comply with the emissions performance standard in effect at the time the change in ownership occurs.

(2) A sequestration program for a source that begins sequestration on or before the start of commercial operation is required to be submitted when:

(a) A site certification application is submitted to EFSEC for new baseload electric generation facility or unit or baseload electric cogeneration facility or unit;

(b) A site certification application is submitted to EFSEC for an upgrade to an existing baseload electric generation facility or unit or baseload electric cogeneration facility or unit that has a site certificate and the upgrade is not an exempt upgrade;

(c) A baseload electric generation facility or unit or baseload electric cogeneration facility or unit enters a new long-term financial commitment with an electric utility to provide

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baseload power if the facility or unit does not comply with the emissions performance standard in effect at the time the new long-term financial commitment occurs; or

(d) A qualifying ownership interest change occurs and the facility does not comply with the emissions performance standard in effect at the time the change in ownership occurs.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-200, filed 6/25/08, effective 7/26/08.]

WAC 463-85-210 Types of permanent sequestration.

Specific requirements for permanent geologic sequestration of greenhouse gases can be found in WAC 173-218-115. Requirements for approval of sequestration plans or sequestration programs for other (nongeologic) types of permanent sequestration containment systems are found in WAC 463-85-220.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-210, filed 6/25/08, effective 7/26/08.]

WAC 463-85-220 Requirements for nongeologic permanent sequestration plans and sequestration programs.

In order to meet the emissions performance standard, all baseload electric generation facilities or individual units that are subject to this rule, and must use nongeologic sequestration of greenhouse gases to meet the emissions performance standard, will submit sequestration plans or sequestration programs for approval to EFSEC or ecology, as appropriate.

(1) Sequestration plans and sequestration programs must include:

(a) Financial requirements. As a condition of plant operation, each owner or operator of a baseload electric generation facility or unit or baseload electric cogeneration facility or unit utilizing nongeologic sequestration as a method to comply with the emission performance standard in WAC 463-85-130 is required to provide a letter of credit sufficient to ensure successful implementation, closure, and post-closure activities identified in the sequestration plan and sequestration program, including construction and operation of necessary equipment, and any other significant costs.

(i) The owner or operator of a proposed sequestration project shall establish a letter of credit to cover all expenses for construction and operation of necessary equipment, and any other significant costs. The cost estimate for the sequestration project shall be revised annually to include any changes in the project and to include cost changes due to inflation.

(ii) Closure and post-closure financial assurances. The owner or operator shall establish a closure and a post-closure letter of credit to cover all closure and post-closure expenses, respectively. The owner or operator must designate EFSEC as the beneficiary to carry out the closure and post-closure activities. The value of the closure and post-closure accounts shall cover all costs of closure and post-closure care identified in the closure and post-closure plan. The closure and post-closure cost estimates shall be revised annually to include any changes in the sequestration project and to include cost changes due to inflation. The obligation to maintain the account for closure and post-closure care survives the termination of any permits and the cessation of injection. The requirement to maintain the closure and post-closure

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accounts is enforceable regardless of whether the requirement is a specific condition of the permit.

(b) The application for approval of a sequestration plan or sequestration program shall include (but is not limited to) the following:

(i) A current site map showing the boundaries of the permanent sequestration project containment system(s) and all areas where greenhouse gases will be stored.

(ii) A technical evaluation of the proposed project, including but not limited to, the following:

(A) The name of the area in which the sequestration will take place;

(B) A description of the facilities and place of greenhouse gases containment system;

(C) A complete site description of the site, including but not limited to the terrain, the geology, the climate (including rain and snowfall expected), any land use restrictions that exist at the time of the application or will be placed upon the site in the future;

(D) The proposed calculated maximum volume of greenhouse gases to be sequestered and areal extent of the location where the greenhouse gases will be stored using a method acceptable to and filed with EFSEC or ecology as appropriate; and

(E) Evaluation of the quantity of sequestered greenhouse gases that may escape from the containment system at the proposed project.

(iii) A public safety and emergency response plan for the proposed project. The plan shall detail the safety procedures concerning the sequestration project containment system and residential, commercial, and public land use within one mile, or as necessary to identify potential impacts, of the outside boundary of the project area.

(iv) A greenhouse gases loss detection and monitoring plan for all parts of the sequestration project. The approved greenhouse gases loss detection and monitoring plan shall address identification of potential release to the atmosphere;

(v) A detailed schedule of annual benchmarks for sequestration of greenhouse gases;

(vi) Any other information that the department deems necessary to make its determination;

(vii) A closure and post-closure plan.

(c) In order to monitor the effectiveness of the implementation of the sequestration plan or sequestration program the owner or operator shall submit a detailed monitoring plan that will ensure detection of failure of the sequestration method to place the greenhouse gases into a sequestered state. The monitoring plan will be sufficient to provide reasonable assurance that the sequestration provided by the project meets the definition of permanent sequestration. The monitoring shall continue for the longer of twenty years beyond the end of placement of the greenhouse gases into sequestration containment system, or twenty years beyond the date upon which it is determined that all of the greenhouse gases have achieved a state at which they are now stably sequestered in that environment.

(d) If the sequestration plan or sequestration program fails to sequester greenhouse gases as provided in the plan or program, the owner or operator of the baseload electric generation facility or unit or baseload electric cogeneration facil-

ity or unit is no longer in compliance with the emissions performance standard.

(2) **Public notice and comment.** ESFEC must provide public notice and a public comment period before approving or denying any sequestration plan or sequestration program.

(a) Public notice. Public notice shall be made only after all information required by the permitting authority has been submitted and after applicable preliminary determinations, if any, have been made. The applicant or other initiator of the action must pay the cost of providing public notice. Public notice shall include analyses of the effects on the local, state and global environment in the case of failure of the sequestration plan or sequestration program. The sequestration plan or sequestration program must be available for public inspection in at least one location near the proposed project.

(b) Public comment.

(i) The public comment period must be at least thirty days long or may be longer as specified in the public notice.

(ii) The public comment period must extend through the hearing date.

(iii) EFSEC shall make no final decision on any sequestration plan or sequestration program until the public comment period has ended and any comments received during the public comment period have been considered.

(c) Public hearings.

(i) EFSEC will hold a public hearing within the thirty-day public comment period. EFSEC will determine the location, date, and time of the public hearing.

(ii) EFSEC must provide at least thirty days prior notice of a hearing on a sequestration plan or sequestration program.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-220, filed 6/25/08, effective 7/26/08.]

WAC 463-85-230 Emissions and electrical production monitoring, recordkeeping and reporting requirements.

(1) Monitoring and recordkeeping requirements. For all baseload electric generation facilities or units and baseload electric cogeneration facilities or units subject to WAC 463-85-120, the following parameters shall be monitored and reported as explained below:

(a) Electrical output: Electrical output as measured at the point of connection with the local electrical distribution network or transmission line, as appropriate. Measurement will be on an hourly or daily basis and recorded in a form suitable for use in calculating compliance with the greenhouse gases emissions performance standard;

(b) Useful thermal energy output: Quantity of energy supplied to nonelectrical production uses determined by monitoring both the energy supplied and the unused energy returned by the thermal energy user or uses. The required monitoring can be accomplished through:

(i) Measurement of the mass, pressure, and temperature of the supply and return streams of the steam or thermal fluid; or

(ii) Use of thermodynamic calculations as approved by ecology.

(iii) Measurements will be on an hourly or daily basis and recorded in a form suitable for use in calculating compliance with the greenhouse gases emissions performance standard; and

(c) Regulated greenhouse gases emissions.

(i) The regulated greenhouse gases emissions are the emissions of regulated greenhouse gases from the main plant exhaust stack and any bypass stacks or flares. For baseload electric generation facilities or units and baseload electric cogeneration facilities or units utilizing CO₂ controls and sequestration to comply with the greenhouse gases emissions performance standard, direct and fugitive CO₂ emissions from the CO₂ separation and compression process are included.

(ii) Carbon dioxide (CO₂).

(A) For baseload electric generation facilities or units and baseload electric cogeneration facilities or units subject to WAC 463-85-120, producing 350 MW or more of electricity, CO₂ emissions will be monitored by a continuous emission monitoring system meeting the requirements of 40 C.F.R. Sections 75.10 and 75.13 and 40 C.F.R. Part 75 Appendix F. If allowed by the requirements of 40 C.F.R. Part 72, a facility may estimate CO₂ emissions through fuel carbon content monitoring and methods meeting the requirements of 40 C.F.R. Sections 75.10 and 75.13 and 40 C.F.R. Part 75 Appendix G.

(B) When the monitoring data from a continuous emission monitoring system does not meet the completeness requirements of 40 C.F.R. Part 75, the baseload electric generation facility operator or operator will substitute data according to the process in 40 C.F.R. Part 75.

(C) Continuous emission monitors for CO₂ will be installed at a location meeting the requirements of 40 C.F.R. Part 75, Appendix A. The CO₂ and flow monitoring equipment must meet the quality control and quality assurance requirements of 40 C.F.R. Part 75, Appendix B.

(iii) Nitrous oxide (N₂O). For baseload electric generation facilities or units or baseload electric cogeneration facilities or units subject to WAC 463-85-120 producing 350 MW or more of electricity, N₂O emissions shall be determined as follows:

(A) For the first year of operation, N₂O emissions are estimated by use of emission factors as published by the Environmental Protection Agency, the federal Department of Energy's Energy Information Agency, or other authoritative source as approved by ecology for use by the facility.

(B) For succeeding years, N₂O emissions will be estimated through use of generating unit specific emission factors derived through use of emissions testing using ecology or Environmental Protection Agency approved methods. The emission factor shall be derived through testing N₂O emissions from the stack at varying loads and through at least four separate test periods spaced evenly throughout the first year of commercial operation.

(iv) Methane (CH₄). For baseload electric generation facilities or units or baseload electric cogeneration facilities or units subject to WAC 173-407-120 producing 350 MW or more of electricity, CH₄ emissions shall be determined as follows:

(A) For the first year of operation, CH₄ emissions are estimated by use of emission factors as published by the Environmental Protection Agency, the federal Department of

Energy's Energy Information Agency, or other authoritative source as approved by ecology for use by the facility.

(B) For succeeding years, CH₄ emissions will be estimated through use of plant specific emission factors derived through use of emissions testing using ecology or Environmental Protection Agency approved methods. The emission factor shall be derived through testing CH₄ emissions from the stack at varying loads and through at least four separate test periods spaced evenly through the first year of commercial operation.

(d) Fuel usage and heat content information.

(i) Fossil fuel usage will be monitored by measuring continuous fuel volume or weight as appropriate for the fuel used. Measurement will be on an hourly or daily basis and recorded in a form suitable for use in calculating greenhouse gases emissions.

(ii) Renewable energy fuel usage will be monitored by measuring continuous fuel volume or weight as appropriate for the fuel used. Measurement will be on an hourly or daily basis and recorded in a form suitable for use in calculating greenhouse gases emissions.

(iii) Heat content of fossil fuels shall be tested at least once per calendar year. The owner or operator of the baseload electric generation facility or unit shall submit a proposed fuel content monitoring program to EFSEC for EFSEC's approval. Upon request and submission of appropriate documentation of fuel heat content variability, EFSEC may allow a source to:

(A) Test the heat content of the fossil fuel less often than once per year; or

(B) Utilize representative heat content for the renewable energy source instead of the periodic monitoring of heat content required above.

(iv) Renewable energy fuel heat content will be tested monthly or with a different frequency approved by EFSEC. A different frequency will be based on the variability of the heat content of the renewable energy fuel.

(A) If the baseload electric generation facilities or units or baseload electric cogeneration facilities or units subject to WAC 463-85-120 using a mixture of renewable and fossil fuels do not adjust their greenhouse gases emissions by accounting for the heat input from renewable energy fuels, monitoring of the heat content of the renewable energy fuels is not required.

(B) Upon request and with appropriate documentation, EFSEC may allow a source to utilize representative heat content for the renewable energy source instead of the periodic monitoring of heat content required above.

(2) Reporting requirements. The results of the monitoring required by this section shall be reported to EFSEC and ecology annually.

(a) Facilities or units subject to the reporting requirements of 40 C.F.R. Part 75. Annual emissions of CO₂, N₂O and CH₄ will be reported to ecology and EFSEC by January 31 of each calendar year for emissions that occurred in the previous calendar year. The report may be an Excel™ or CSV format copy of the report submitted to EPA per 40 C.F.R. Part 75 with the emissions for N₂O and CH₄ appended to the report.

(b) For facilities or units not subject to the reporting requirements of 40 C.F.R. Part 75, annual emissions of CO₂, N₂O and CH₄ and supporting information will be reported to ecology and the air quality permitting authority with jurisdiction over the facility by January 31 of each calendar year for emissions that occurred in the previous calendar year.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-230, filed 6/25/08, effective 7/26/08.]

WAC 463-85-240 Enforcement of the emissions performance standard on schedule. Any power plant subject to WAC 463-85-120 that does not meet the emissions performance standard on schedule shall be subject to enforcement under chapter 80.50 RCW.

(1) Penalties can include:

(a) Financial penalties, which shall be assessed after any year of failure to meet a sequestration benchmark established in the sequestration plan or sequestration program. Each pound of greenhouse gases above the emissions performance standard will constitute a separate violation, as averaged on an annual basis;

(b) Revocation of approval to construct the source or to operate the source.

(2) If a new, modified or upgraded baseload electric generation facility or unit or baseload electric cogeneration facility or unit fails to meet a sequestration plan or sequestration program benchmark on schedule, a revised sequestration plan or sequestration program will be required to be submitted no later than one hundred fifty calendar days after the due date established under subsection (3)(c) of this section for reporting the failure. The revised sequestration plan or sequestration program is to be submitted to EFSEC, as appropriate, for approval.

(3) Provisions for unavoidable circumstances.

(a) The owner or operator of a facility operated under an approved sequestration plan or sequestration program shall have the burden of proving to EFSEC in an enforcement action that failure to meet a sequestration benchmark was unavoidable. This demonstration shall be a condition to obtaining relief under (d), (e), and (f) of this subsection.

(b) Failure to meet a sequestration benchmark determined to be unavoidable under the procedures and criteria in this section shall be excused and not subject to financial penalty.

(c) Failure to meet a sequestration benchmark shall be reported by January 31 of the year following the year during which the event occurred or as part of the routine sequestration monitoring reports. Upon request by EFSEC the owner(s) or operator(s) of the sequestration project source(s) shall submit a full written report including the known causes, the corrective actions taken, and the preventive measures to be taken to minimize or eliminate the chance of recurrence.

(d) Failure to meet a sequestration benchmark due to startup or shutdown conditions shall be considered unavoidable provided the source reports as required under (c) of this subsection, and adequately demonstrates that the failure to meet a sequestration benchmark could not have been prevented through careful planning and design and if a bypass of equipment occurs, that such bypass is necessary to prevent loss of life, personal injury, or severe property damage.

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(e) Maintenance. Failure to meet a sequestration benchmark due to scheduled maintenance shall be considered unavoidable if the source reports as required under (c) of this subsection, and adequately demonstrates that the excess emissions could not have been avoided through reasonable design, better scheduling for maintenance or through better operation and maintenance practices.

(f) Failure to meet a sequestration benchmark due to upsets shall be considered unavoidable provided the source reports as required under (c) of this subsection, and adequately demonstrates that:

(i) The event was not caused by poor or inadequate design, operation, maintenance, or any other reasonably preventable condition;

(ii) The event was not of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(iii) The operator took immediate and appropriate corrective action in a manner consistent with good practice for minimizing nonsequestration during the upset event.

(4) Enforcement for permit violations. Enforcement of any part of an EFSEC site certification agreement will proceed in accordance with RCW 80.50.150.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-240, filed 6/25/08, effective 7/26/08.]

WAC 463-85-400 Severability. The provisions of this regulation are severable. If any provision is held invalid, the application of that provision to other circumstances and the remainder of the regulation will not be affected.

[Statutory Authority: Chapters 80.70 and 80.80 RCW and RCW 80.50.040. WSR 08-14-064, § 463-85-400, filed 6/25/08, effective 7/26/08.]