Chapter 173-407 WAC
((~~CARBON DIOXIDE MITIGATION PROGRAM, GREENHOUSE GASES EMISSIONS PERFORMANCE STANDARD AND SEQUESTRATION PLANS AND PROGRAMS FOR THERMAL ELECTRIC GENERATING FACILITIES~~)) GREENHOUSE GAS MITIGATION REQUIREMENTS AND EMISSIONS PERFORMANCE STANDARD FOR POWER PLANTS

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-005 ((~~Work in unison.~~)) Overview. ((~~The requirements of this chapter, WAC 173-407-010 through 173-407-070, are based upon chapter 80.70 RCW and are separate and distinct from the requirements found in this chapter, WAC 173-407-100 through 173-407-320 that are based upon chapter 80.80 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. Once that standard is met, the requirements of chapter 80.70 RCW (WAC 173-407-010 through 173-407-070) are applied.~~)) (1) This rule has three separate parts:

(a) Part I covers CO_2 mitigation in WAC 173-407-010 through 173-407-080.

(b) Part II covers GHG EPS in WAC 173-407-100 through 173-407-240.

(c) Part III covers long-term financial commitments and ecology's consultation in WAC 173-407-300 through 173-407-320.

(2) Part I and Part II work together. Apply the requirements in this sequence:

(a) GHG EPS (Part II); and then

(b) CO_2 mitigation (Part I).

(3) The owner of a coal-fired electric generation facility subject to RCW 80.80.040 (3)(c) must comply with RCW 80.70.080.

NEW SECTION

WAC 173-407-006 Adoption of federal rules. Federal rules mentioned in this rule are adopted as they exist on February 21, 2018.

PART I
CARBON DIOXIDE MITIGATION ((~~FOR FOSSIL-FUELED THERMAL ELECTRIC GENERATING FACILITIES, IMPLEMENTING CHAPTER 80.70 RCW~~)) REQUIREMENTS

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-010 Policy and purpose of Part I. (1) ((~~It is the policy of the state to require mitigation of the emissions of carbon dioxide (CO_2)~~)) Chapter 80.70 RCW requires mitigation of CO_2 emissions from all new and certain modified fossil-fueled thermal electric generating facilities with station-generating capability of more than 25 megawatts of electricity (MWe).

(2) A fossil-fueled thermal electric generating facility is not subject to the requirements of chapter 173-401 WAC solely due to its emissions of CO_2.

(a) Emissions of other regulated air pollutants must ((~~be a large enough quantity to~~)) trigger ((~~those~~)) the requirements of chapter 173-401 WAC.

(b) For a fossil-fueled thermal electric generating ((~~facilities that are~~)) facility subject to chapter 173-401 WAC, the CO_2 mitigation requirements are an applicable requirement under that regulation.

(3) A fossil-fueled thermal electric generating facility not subject to the requirements of chapter 173-401 WAC is subject to the requirements of the registration program in chapter 173-400 WAC.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-020 Definitions to Part I. The definitions in this section are ((~~found in RCW 80.70.010 and apply throughout this chapter unless clearly stated otherwise. The definitions are reprinted below~~)) only applicable to Part I.

"Annual CO_2 emission rate" means the maximum potential annual CO_2 emission rate.

"Applicant" has the meaning provided in RCW 80.50.020 and includes an applicant for a permit for a fossil-fueled thermal electric generation facility subject to RCW 70.94.152 and 80.70.020 (1)(b) or (d).

((~~"Authority" means any air pollution control agency whose jurisdictional boundaries are coextensive with the boundaries of one or more counties.~~))

"Carbon credit" means a verified reduction in carbon dioxide or carbon dioxide equivalents that is registered with a state, national, or international trading authority or exchange that has been recognized by ((~~the council~~)) EFSEC.

"Carbon dioxide equivalents" means a metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.

"CO_2" means carbon dioxide.

"Cogeneration credit" means the carbon dioxide emissions that ((~~the council, department, or authority~~)) EFSEC or the permitting authority, as appropriate, estimates a stand-alone industrial and commercial facility would ((~~be produced~~)) produce on an annual basis ((~~by a stand-alone industrial and commercial facility~~)) that is equivalent

in operating characteristics and output to the industrial or commercial heating or cooling process component of the cogeneration plant.

"Cogeneration plant" means a fossil-fueled thermal 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.

"Commercial operation" means the date that the first electricity produced by a facility is delivered for commercial sale to the power grid.

((~~"Council" means the energy facility site evaluation council created by RCW 80.50.030.~~

~~"Department~~)) "Ecology" means the department of ecology.

"EFSEC" means the energy facility site evaluation council.

"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.

"Independent qualified organization" is an organization identified by ((~~the energy facility site evaluation council~~)) EFSEC as meeting the requirements of RCW 80.70.050.

"Mitigation plan" means a proposal that includes the process or means to achieve carbon dioxide mitigation through use of mitigation projects or carbon credits.

"Mitigation project" means one or more of the following:

(a) Projects or actions ((~~that are~~)) implemented by the certificate holder or order of approval holder, directly or through its agent, or by an independent qualified organization to mitigate the emission of carbon dioxide produced by the fossil-fueled thermal electric generation facility. This term includes, but is not limited to((~~,~~)):

(i) The use of energy efficiency measures((~~,~~));

(ii) Clean and efficient transportation measures((~~,~~));

(iii) Qualified alternative energy resources((~~,~~));

(iv) Demand side management of electricity consumption((~~,~~)); and

(v) Carbon sequestration programs((~~,~~)).

(b) Direct application of combined heat and power (cogeneration);

(c) Verified carbon credits traded on a recognized trading authority or exchange; or

(d) Enforceable and permanent reductions in carbon dioxide or carbon dioxide equivalents through process change, equipment shutdown, or other activities under the control of the ((~~applicant~~)) facility and approved as part of a carbon dioxide mitigation plan.

"Modification" means the definition in WAC 173-400-030.

"MWe" means megawatts of electricity.

"Order of approval" means an order issued under RCW 70.94.152 with respect to a fossil-fueled thermal electric generation facility subject to ((~~RCW 80.70.020 (1)(b) or (d)~~)) WAC 173-407-030.

"Permanent" means that emission reductions used to offset emission increases are assured for the life of the corresponding increase, whether unlimited or limited in duration.

"Permitting authority" means ecology or the local air pollution control authority with jurisdiction over the source.

"Qualified alternative energy resource" has the same meaning as in RCW 19.29A.090.

"Station generating capability" means the maximum load a generator can sustain over a given period of time without exceeding design limits, and measured using maximum continuous electric generation ca-

pacity, less net auxiliary load, at average ambient temperature and barometric pressure.

"Total carbon dioxide emissions" means:

(a) For a fossil-fueled thermal electric generation facility described ((~~under RCW 80.70.020 (1)(a) and (b)~~)) in WAC 173-407-030(1), the amount of carbon dioxide emitted over a thirty-year period based on:

(i) The manufacturer's or designer's guaranteed total net station generating capability((~~,~~));

(ii) New equipment heat rate((~~,~~)); and

(iii) An assumed sixty percent capacity factor for facilities under ((~~the council's~~)) EFSEC's jurisdiction or sixty percent of the operational limitations on facilities subject to an order of approval, ((~~and~~)) taking into account any enforceable limitations on operational hours or fuel types and use((~~; and~~)).

(b) For a fossil-fueled thermal electric generation facility described ((~~under RCW 80.70.020 (1)(c) and (d)~~)) in WAC 173-407-030(2), the amount of carbon dioxide emitted over a thirty-year period based on:

(i) The proposed increase in the amount of electrical output of the facility that exceeds the station generation capability of the facility prior to the ((~~applicant~~)) facility applying for certification or an order of approval ((~~pursuant to RCW 80.70.020 (1)(c) and (d),~~));

(ii) New equipment heat rate((~~,~~)); and

(iii) An assumed sixty percent capacity factor for facilities under ((~~the council's~~)) EFSEC's jurisdiction or sixty percent of the operational limitations on facilities subject to an order of approval, ((~~and~~)) taking into account any enforceable limitations on operational hours or fuel types and use.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-030 Carbon dioxide mitigation program applicability for Part I. ((~~(1) **Statutory authority for a carbon dioxide mitigation program.** RCW 70.94.892(1) states that "*For fossil-fueled electric generation facilities having more than twenty-five thousand kilowatts station generating capability but less than three hundred fifty thousand kilowatts station generation capability, except for fossil-fueled floating thermal electric generation facilities under the jurisdiction of the energy facility site evaluation council pursuant to RCW 80.50.010, the department or authority shall implement a carbon dioxide mitigation program consistent with the requirements of chapter 80.70 RCW.*"~~

~~(2) **Statutory carbon dioxide mitigation program applicability requirements.** RCW 80.70.020 describes the applicability requirements and is reprinted below:~~

~~*(1) The provisions of this chapter apply to:*~~

~~*(a) New fossil-fueled thermal electric generation facilities with station-generating capability of three hundred fifty thousand kilowatts or more and fossil-fueled floating thermal electric generation facilities of one hundred thousand kilowatts or more under RCW 80.50.020 (14)(a), for which an application for site certification is made to the council after July 1, 2004;*~~

~~*(b) New fossil-fueled thermal electric generation facilities with station-generating capability of more than twenty-five thousand kilowatts, but less than three hundred fifty thousand kilowatts, except for fossil-fueled floating thermal electric generation facilities under the council's jurisdiction, for which an application for an order of approval has been submitted after July 1, 2004;*~~

~~*(c) Fossil-fueled thermal electric generation facilities with station-generating capability of three hundred fifty thousand kilowatts or more that have an existing site certification agreement and, after July 1, 2004, apply to the council to increase the output of carbon dioxide emissions by fifteen percent or more through permanent changes in facility operations or modification or equipment; and*~~

~~*(d) Fossil-fueled thermal electric generation facilities with station-generating capability of more than twenty-five thousand kilowatts, but less than three hundred fifty thousand kilowatts, except for fossil-fueled floating thermal electric generation facilities under the council's jurisdiction, that have an existing order of approval and, after July 1, 2004, apply to the department or authority, as appropriate, to permanently modify the facility so as to increase its station-generating capability by at least twenty-five thousand kilowatts or to increase the output of carbon dioxide emissions by fifteen percent or more, whichever measure is greater.*~~

~~(3)~~)) (1) New ((~~facilities~~)) facility. ((~~Any~~)) A fossil-fueled thermal electric generating facility ((~~is required to~~)) must mitigate CO_2 emissions ((~~as described in chapter 80.70 RCW, if~~)) when the facility meets the following criteria:

(a) ((~~An~~)) A facility submits a notice of construction application ((~~was received~~)) after July 1, 2004;

(b) The station-generating capability is ((~~below 350 MWe and above 25~~)) between 25 MWe and 350 MWe; and

(c) The facility is not a fossil-fueled floating thermal electric generation facility ((~~subject to regulation by the energy facility site evaluation council~~)) regulated by EFSEC (100 MWe or more).

((~~(4)~~)) (2) Modifying an existing fossil-fueled thermal electric generating ((~~facilities~~)) facility. A fossil-fueled thermal electric generating facility seeking to modify the facility or ((~~any~~)) an electrical generating unit((~~s is required to~~)) must mitigate the ((~~increase of the emission of CO_2, as described in RCW 80.70.020, when the following occur~~)) increased CO_2 emissions when the facility meets the following criteria:

(a) ((~~The~~)) A facility submits a notice of construction application ((~~was received~~)) after July 1, 2004;

(b) The unmodified station generating capability is ((~~more than~~)) between 25 MWe and ((~~less than~~)) 350 MWe;

(c) The increase to the facility or units is the greater of the following measures:

(i) An increase in station-generating capability of ((~~more than~~)) at least 25 MWe; or

(ii) An increase in CO_2 emissions output by 15((%)) percent or more;

(d) The facility ((~~or the modification is not under the jurisdiction of the energy facility site evaluation council.~~

~~(5)~~)) is not a fossil-fueled floating thermal electric generation facility regulated by EFSEC (100 MWe or more).

(3) Examples of fossil-fueled thermal electric generation units. The following are some examples of fossil-fueled thermal electric generating units:

(a) Coal, oil, natural gas, or coke fueled steam generating units (boilers) supplying steam to a steam turbine - electric generator;

(b) Simple cycle combustion turbine attached to an electric generator;

(c) Combined cycle combustion turbine((~~s~~)) (with and without duct burners) attached to an electric generator and supplying steam to a steam turbine - electric generator;

(d) Coal gasification unit((~~s~~)), or similar device((~~s~~)), where the synthesis gas produced is used to fuel a combustion turbine, boiler or similar device used to power an electric generator or provide hydrogen for use in fuel cells; or

(e) Hydrocarbon reformer emissions where the hydrogen produced is used in fuel cells or other combustion units to produce electricity. Hydrogen used to fuel motor vehicles is not subject to the requirements of this part.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-040 Carbon dioxide mitigation program fees under Part I. Fees can be found in ((~~chapter 173-455~~)) WAC 173-455-050.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-050 Calculating total carbon dioxide emissions to be mitigated under Part I. (1) Step 1 ((~~is to calculate the total quantity of CO_2. The total quantity of CO_2 is referred to as the maximum potential emissions of CO_2. The maximum potential emissions of CO_2 is defined as~~)) - Calculate the annual CO_2 emission rate. Calculate the annual CO_2 emission rate ((~~is derived by~~)) using the following formula unless a differing analysis is necessary or appropriate for the electric generating process and type of equipment:

$$CO_{2rate} = \frac{F_s \times K_s}{2204.6} \times T_s + \frac{F_1 \times K_1}{2204.6} \times T_1 + \frac{F_2 \times K_2}{2204.6} \times T_2 + \frac{F_3 \times K_3}{2204.6} \times T_3 \ldots + \frac{F_n \times K_n}{2204.6} \times T_n$$

where:

CO_{2rate}	=	((~~Maximum potential emissions~~)) Annual CO_2 emission rate in metric tons per year
F_{1} ((~~n~~)) to F_n	=	Maximum design fuel firing rate in MMBtu/hour calculated as manufacturer or designer's guaranteed total net station generating capability in MWe/hour times the new equipment heat rate in ((~~Btu/MWe~~)) MMBtu/MWe. Determined based on higher heating values of fuel

K_{1} ((~~n~~)) to K_n	=	Fuel to CO_2 conversion factor for the fuel(s) being evaluated in lb CO_2/MMBtu for fuel F_1 to F_n
T_{1} ((~~n~~)) to T_n	=	Hours per year fuel F_1 to F_n is allowed to be used. The default is 8760 hours unless there is a limitation on hours in an order of approval
F_s	=	Maximum design supplemental fuel firing rate in MMBtu/hour, at higher heating value of the fuel
K_s	=	Fuel to CO_2 conversion factor for the supplemental fuel being evaluated in lb CO_2/MMBtu for fuel ((~~F_n~~)) F_s given fuel
T_s	=	Hours per year supplemental fuel ((~~F_n~~)) F_s is allowed. The default is 8760 hours unless there is a limitation on hours in an order of approval

(a) When there are multiple new fossil-fueled electric generating units, the above calculation ((~~will~~)) must be performed for each unit and the ((~~total~~)) annual CO_2 emission((~~s~~)) rate of all units ((~~will~~)) must be summed.

(b) ((~~When~~)) A unit or facility ((~~is~~)) allowed to use multiple fuels((~~,~~)) must use the maximum allowed hours on the highest CO_2 producing fuels ((~~will be utilized~~)) for each fuel until the total of all hours per fuel add up to the allowable annual hours.

(c) ((~~When~~)) A new unit or facility ((~~is~~)) allowed to use multiple fuels without restriction in its ((~~approval order(s),~~)) order of approval must perform this calculation ((~~will be performed~~)) assuming that the fuel with the highest CO_2 emission rate is used 100((%)) percent of the time.

(d) When the order of approval restricts the annual operating hours ((~~are restricted~~)) for any reason, the total of ((~~all T_1 - $_n$ hours~~)) T_1 to T_n equals the annual allowable hours of operation in the order of approval.

(e) Fuel to CO_2 conversion factors ((~~(derived from the EPA's AP-42, Compilation of Air Pollutant Emission Factors):~~

~~Fuel~~	~~K_n lb/MMBtu~~
~~#2 oil~~	~~158.16~~
~~#4 oil~~	~~160.96~~
~~#6 oil~~	~~166.67~~
~~Lignite~~	~~287.50~~
~~Sub-bituminous coal~~	~~267.22~~
~~Bituminous coal, low volatility~~	~~232.21~~
~~Bituminous coal, medium volatility~~	~~241.60~~
~~Bituminous coal, high volatility~~	~~262.38~~
~~Natural gas~~	~~117.6~~
~~Propane~~	~~136.61~~
~~Butane~~	~~139.38~~
~~Petroleum coke~~	~~242.91~~
~~Coal coke~~	~~243.1~~

~~Fuel~~	~~K_n lb/MMBtu~~
~~Other fossil fuels~~	~~Calculate based on carbon content of the fossil fuel and application of the gross heat content (higher heating value) of the fuel~~
~~Nonfossil fuels~~	~~00.00~~))

. For K_1 to K_n and K_s in the formula in subsection (1) of this section, use the CO_2 emission factors for fossil fuels in 40 C.F.R. Part 98, Table C-1 (in effect on the date in WAC 173-407-006), except that the values for nonfossil fuels must be 0.00 lb/MMBtu.

(2) Step 2 - ((~~Insert the annual CO_2 rate to~~)) Determine the total carbon dioxide emissions ((~~to be mitigated. The formula below includes specifications that are part of the total carbon dioxide definition~~)). You must use the following formula to determine total carbon dioxide emissions:

$$\text{Total } CO_2 \text{ Emissions} = CO_{2rate} \times 30 \times 0.6$$

where:

CO_{2rate}	=	Annual CO_2 emission rate in metric tons per year
30	=	Thirty-year period
0.6	=	Assumed capacity factor

(3) Step 3 - Determine ((~~and apply~~)) the cogeneration credit (if any).

(a) Where the cogeneration unit or facility qualifies for cogeneration credit, the cogeneration credit is the annual CO_2 emission rate (in metric tons per year) ((~~and is calculated as shown below or similar method~~)). You must use the following formula or a similar method to determine the annual CO_2 cogeneration credit:

$$CO_{2credit} = \frac{H_s}{2204.6} \times (K_a) \div n$$

where:

$CO_{2credit}$	=	The annual CO_2 cogeneration credit ((~~for cogeneration~~)) in metric tons/year((~~.~~))
H_s	=	Annual heat energy supplied by the cogeneration plant to the "steam host" per the contract or other binding obligation/agreement between the parties in MMBtu/yr as substantiated by an engineering analysis((~~.~~))
K_a	=	The time weighted ((~~average CO_2 emission rate constant~~)) fuel to CO_2 conversion factor for the cogeneration plant in lb CO_2/MMBtu supplied. The time weighted average is calculated similarly to the above method described in subsection (1) of this section((~~.~~))

n	=	Efficiency of new boiler that would provide the same quantity of thermal energy. Assume n = 0.85 unless ((~~applicant~~)) facility provides information supporting a different value((~~.~~))

(b) Calculate the metric tons of the cogeneration credit over the thirty-year period.

$$\text{Cogeneration Credit} = CO_{2credit} \times 30$$

(4) Step 4 - ((~~Apply the mitigation factor.~~

~~(a) RCW 80.70.020(4) states that "*Fossil-fueled thermal electric generation facilities that receive site certification approval or an order of approval shall provide mitigation for twenty percent of the total carbon dioxide emissions produced by the facility.*"~~

~~(b)~~)) Determine the mitigation quantity. Determine the CO_2 emissions mitigation quantity ((~~is determined by~~)) using the following formula:

$$\text{Mitigation Quantity} = \text{Total } CO_2 \text{ Emissions} \times 0.2 - \text{Cogeneration Credit}$$

where:

Mitigation quantity	=	The total CO_2 emissions to be mitigated in metric tons
((~~CO_{2rate}~~	~~=~~	~~The annual maximum CO_2 emissions from the generating facility in tons/year~~))
0.2	=	The mitigation factor in RCW 80.70.020(4)

(5) Additional restrictions for a modification((~~s~~)) to an existing facility not involving ((~~installation of~~)) installing new generating units. Calculate the CO_2 mitigation quantity ((~~of CO_2 to be mitigated is calculated by the same methods used for the new generating units~~)) using the method in subsections (1) through (4) of this section with the following restrictions:

(a) The quantity of CO_2 subject to mitigation is ((~~only that~~)) limited to the emissions resulting from the modification and does not include the ((~~CO_2~~)) emissions occurring prior to the modification;

(b) An increase in operating hours or other operational limitations established in an order of approval is not an exempt modification under this regulation. However, only emissions related to the increase in operating hours are subject to the CO_2 mitigation program requirements;

(c) The annual CO_2 emission((~~s~~)) rate (CO_{2rate}) in subsection (1) of this section is the difference between the premodification condition and the postmodification condition, but using the like new heat rate for the combustion equipment; and

(d) ((~~The~~)) A facility may use a cogeneration credit ((~~may be used, but~~)) only if it is a new cogeneration credit((~~, not a cogeneration agreement or arrangement~~)) established ((~~prior to~~)) after July 1, 2004((~~, or used in a prior CO_2 mitigation evaluation~~)).

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-060 Carbon dioxide mitigation plan requirements and options under Part I. (1) ((**Once the total carbon dioxide emissions mitigation quantity is calculated, what is next?**)) Mitigation plan requirements.

(a) The facility must mitigate ((that level of carbon dioxide)) the quantity of CO_2 emissions((. A)) determined by WAC 173-407-050 (4) or (5) as applicable. The facility must have an approved CO_2 mitigation plan ((is required and must be approved)) as part of the order of approval. ((RCW 80.70.020 (2)(b) states that "*For fossil-fueled thermal electric generation facilities not under jurisdiction of the council, the order of approval shall require an approved carbon dioxide mitigation plan*." A mitigation plan is a proposal that includes the process or means to achieve carbon dioxide mitigation through use of mitigation projects or carbon credits (RCW 80.70.010).

(2) **What are the mitigation plan options?** The options are identified in RCW 80.70.020(3), which states that ")) The facility does not need to submit any mitigation plan if the calculated mitigation quantity is less than or equal to zero.

(b) The facility must implement the mitigation plan based on the schedule in the order of approval. A facility may request an extension of the schedule by submitting a written request to the permitting authority before applicable deadline(s). The request must propose a revised schedule and document why the facility needs more time to implement the mitigation plan.

(2) Mitigation plan options. An applicant for a fossil-fueled thermal electric generation facility ((shall)) must include one or a combination of the following ((carbon dioxide)) CO_2 mitigation options as part of its mitigation plan:

(a) Payment to a third party to provide mitigation;

(b) Direct purchase of permanent carbon credits; or

(c) Investment in applicant-controlled ((carbon dioxide)) CO_2 mitigation projects, including combined heat and power (cogeneration). ((")

(3) ((**What are the requirements of the payment to a third party option?** The payment to a third party option requirements are found in RCW 80.70.020 (5) and (6). Subsection (5) identifies the mitigation rate for this option and describes the process for changing the mitigation rate. Subsection (6) describes the payment options.)) Requirements of the payment to a third-party option.

(a) The initial mitigation rate is $1.60 per metric ton of ((carbon dioxide)) CO_2 to be mitigated. ((If there is)) For a cogeneration plant, the monetary amount is based on the difference between twenty percent of the total carbon dioxide emissions and the cogeneration credit. This rate will change when ((the energy facility site evaluation council)) EFSEC adjusts it through the process described in RCW 80.70.020 (5)(a) and (b)((. The total payment amount = mitigation rate x mitigation quantity)).

Total payment amount = Mitigation rate × Mitigation quantity

(b) An applicant may choose between a lump sum payment ((or)) and partial payments over a period of five years. ((The **lump sum payment** is described in RCW 80.70.020 (6)(a) and (b).))

(i) The applicant must pay the lump sum payment amount ((~~is the mitigation quantity multiplied by the per ton mitigation rate. The entire payment amount is due~~)) to the independent qualified organization no later than one hundred twenty days after the start of commercial operation.

((~~The alternative to a one-time payment is a **partial payment** described in RCW 80.70.020 (6)(c). Under this alternative,~~)) (ii) The applicant must make partial payments to the independent qualified organization in five equal payments over five years. The applicant must pay the first twenty percent of the total payment ((~~is due~~)) to the independent qualified organization no later than one hundred twenty days after the start of commercial operation. An applicant must make a payment of the same amount (or an adjusted amount if the rate is changed under RCW 80.70.020 (5)(a)) ((~~is due on~~)) by the anniversary date of the initial payment for the next four consecutive years. ((~~In addition, the applicant is required to~~)) The facility must provide a letter of credit or comparable security for the remaining 80((%)) percent at the time of the first payment. The letter of credit ((~~(~~))or comparable security((~~)~~)) must ((~~also~~)) include possible rate changes.

(4) ((**~~What are the requirements of the permanent carbon credits option?~~** ~~RCW 80.70.030 identifies the criteria and specifies that these credits cannot be resold without approval from the local air authority having jurisdiction or ecology where there is no local air authority. The~~)) Requirements of the permanent carbon credits option. The applicant must acquire permanent carbon credits equaling the mitigation quantity as calculated in WAC 173-407-050(4), unless the power plant permanently ceases operation. The permanent carbon credits must meet the following criteria ((~~of RCW 80.70.030(1) are as follows~~)):

(a) Credits must derive from real, verified, permanent, and enforceable ((~~carbon dioxide or carbon dioxide~~)) CO_2 or CO_2 equivalents emission mitigation not otherwise required by statute, regulation, or other legal requirements;

(b) The credits must be acquired after July 1, 2004; ((~~and~~))

(c) The credits may not have been used for other ((~~carbon dioxide~~)) CO_2 mitigation projects; and

(d) The credits purchased for CO_2 mitigation must not be resold unless approved by the permitting authority. The permitting authority must determine the permanent carbon credits proposed for resale are offset by other CO_2 mitigation method(s). Facilities that cease operation may sell their carbon credits without replacement.

(5) ((**~~What are the requirements for the applicant controlled mitigation projects option?~~** ~~RCW 80.70.040 identifies the requirements for applicant controlled mitigation projects. Subsections (1) through (5) specify the criteria.~~)) Applicant controlled mitigation projects option. The facility may invest directly in mitigation projects. The permitting authority cannot require the direct investment cost of the applicant controlled mitigation project, including funds used for selection, monitoring, and evaluation of mitigation projects ((~~cannot be required by ecology or the local authority~~)), to exceed the cost of ((~~making a lump sum~~)) the total payment to a third party per WAC 173-407-060(3).

The applicant controlled mitigation project must be:

(a) ((~~Implemented through mitigation projects~~)) Conducted directly by((~~,~~)) or under the control of((~~,~~)) the order of approval holder.

(b) Approved by the permitting authority ((~~having jurisdiction or the department where there is no local air authority and incorpora-~~

~~ted~~)) and included as a condition of the ((~~proposed~~)) order of approval.

(c) ((~~Fully in place within a reasonable time~~)) Operational within one year after the start of commercial operation. Failure to implement an approved mitigation plan is subject to enforcement under ((~~chapter 70.94 RCW~~)) WAC 173-407-080.

(d) The order of approval holder may not use more than twenty percent of the total funds for the selection, monitoring, and evaluation of mitigation projects, and the management and enforcement of contracts.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-070 Carbon dioxide mitigation option statement and mitigation plan approval under Part I. (1) ((~~Applicants must provide the department or authority with a statement selecting the mitigation option(s) at the time the application is submitted.~~)) The notice of construction application to the permitting authority must indicate the selected mitigation option(s).

(2) Applicants ((~~choosing to use the~~)) using payment to an independent qualified organization (a third party) or the permanent carbon credit option must provide ((~~the department or the authority, as appropriate, with~~)) the documentation to the permitting authority to show how the applicant will satisfy the requirements ((~~will be satisfied~~)) before the permitting authority can issue an order ((~~or~~)) of approval ((~~will be issued~~)).

(3) Applicants ((~~seeking to use~~)) using the ((~~applicant~~)) facility controlled mitigation project((~~s~~)) option must submit the entire mitigation plan to the ((~~department or the~~)) permitting authority. The ((~~department or authority having jurisdiction~~)) permitting authority will review the plan((~~. Under RCW 70.94.892 (2)(b), the review criteria is based on whether the mitigation plan is consistent~~)) for consistency with the requirements of Part I of this chapter ((~~80.70 RCW~~)).

(4) Upon completing the review ((~~phase~~)), the ((~~department or the authority having jurisdiction~~)) permitting authority must approve or deny the mitigation plan.

(5) An approved mitigation plan((~~s~~)) must become part of the order of approval.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-080 Enforcement under Part I. ((~~Applicants or facilities~~)) A facility violating the ((~~carbon dioxide~~)) CO_2 mitigation program requirements ((~~are~~)) is subject to the enforcement provisions of chapter 70.94 RCW.

PART II
GREENHOUSE ((~~GASES~~)) GAS EMISSIONS PERFORMANCE STANDARD AND SEQUESTRATION PLANS AND PROGRAMS ((~~FOR BASELOAD ELECTRIC GENERATION FACILITIES IMPLEMENTING CHAPTER 80.80 RCW~~))

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-100 Policy and purpose of Part II. ((~~It is the intent of~~)) The legislature((~~, under chapter 80.80 RCW, to establish~~)) established statutory goals for the statewide reduction of greenhouse ((~~gases~~)) gas 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~~)) gas emissions.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-110 Definitions to Part II and Part III. The following definitions apply when these terms are used in the provisions of Part II and Part III of this chapter.

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

"Baseload electric cogeneration facility" means a cogeneration facility that provides baseload electric generation. For a cogeneration facility, the sixty percent annual capacity factor applies to only the electrical production intended to be supplied for sale.

"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 Part II and Part III 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 at the time of original permitting.

((~~"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.

"Coal transition power" means the output of a coal-fired electric generation facility that is subject to an obligation to meet the standards in RCW 80.80.040 (3)(c).

"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 are 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.

((~~"Commission" means the Washington utilities and transportation commission.~~))

"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 deliv-

ery 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 includes fuel cells fueled by hydrogen produced:

(i) In a reformer utilizing nonrenewable fuels; or

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

"Electricity from unspecified sources" means electricity that is to be delivered in Washington pursuant to a long-term financial commitment entered into by an electric utility and whose sources or origins of generation and expected average annual deliveries cannot be ascertained with reasonable certainty.

"EFSEC" 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.

"EPA" means Environmental Protection Agency.

"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.

"Fuel feed stock" means any renewable, biological material that can be used directly as a fuel, or converted to another form of fuel or energy product.

"GHG EPS" means greenhouse gas emissions performance standard.

"Governing board" means the board of directors or legislative authority of a consumer-owned utility.

"Greenhouse ((~~gases"~~)) gas" or "GHG" 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.

"Modification" means the definition in WAC 173-400-030.

"MWh" means megawatt-hour electricity.

"MWh_{eq}" means 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~~)) 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.

"Permitting authority" means ecology or the local air pollution control authority with jurisdiction over the source.

"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 or a local jurisdiction~~)) a jurisdiction inside or outside the state. 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~~)) gas emissions" is the mass of carbon dioxide emitted plus the mass of nitrous oxide emitted plus the mass of methane emitted. Regulated greenhouse ((~~gases~~)) gas 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; or

(e) Biodiesel fuel as defined in RCW 82.29A.135 that is not derived from crops raised on land cleared from old growth or first-growth forests where the clearing occurred after December 7, 2006.

"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~~)) to support 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 demon-

strate 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~~)) gas 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)<u>; or</u>

<u>(d) That is used to drive a chemical conversion process (i.e., thermal energy to convert limestone to lime or to produce cement clinker from limestone and other materials).</u>

<u>"UTC" means the utilities and transportation commission</u>.

"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.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-120 ((~~Facilities subject to the~~)) Greenhouse ((~~gases~~)) gas emissions performance standard applicability for Part II. ((~~(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 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.~~)) (1) Starting July 1, 2008, a baseload electric generation facility or unit or baseload electric cogeneration facility or unit located in Washington is subject to the GHG EPS each time it meets one of the following conditions:

(a) Commence commercial operation;

(b) New ownership interest;

(c) New or renewed long-term financial commitment; or

(d) Upgraded.

(2) Starting July 1, 2008, a baseload electric generation facility or unit or baseload electric cogeneration facility or unit is subject to the GHG EPS when it enters into a long-term financial commitment to serve power to Washington customers.

(3) Exceptions to the conditions in subsections (1) and (2) of this section are as follows:

(a) A baseload electric cogeneration facility or unit fueled by natural gas or waste gas or a combination of the two fuels that was in

operation before July 1, 2008, is exempt from meeting the GHG EPS until:

(i) Change in ownership; or

(ii) Upgraded.

(b) A baseload electric generation facility or unit or baseload electric cogeneration facility or unit fueled by at least 90 percent renewable fuels, on an annual heat input basis, is deemed to be in compliance with the GHG EPS;

(c) A baseload electric generation facility or unit powered exclusively by renewable resources is deemed to be in compliance with the GHG EPS;

(d) A new or renewed long-term financial commitment with the Bonneville power administration is exempt from meeting the GHG EPS;

(e) Long-term purchase of coal transition power and the coal-fired power plant providing the power are exempt from meeting the GHG EPS as provided by RCW 80.80.040 (3)(c).

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-130 Emissions performance standard under Part II. ((~~(1) Beginning July 1, 2008, all baseload electric generation facilities and units and baseload electric cogeneration facilities and units subject to WAC 173-407-120 are not allowed to emit to the atmosphere regulated greenhouse gases at a rate greater than one thousand one hundred 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 this section, exclusive use of renewable fuel shall mean at least ninety percent of total annual heat input by a renewable fuel.~~

~~(4) Compliance~~)) (1) A baseload electric generation facility or unit or baseload electric cogeneration facility or unit must comply with the GHG EPS in subsection (2) of this section in effect at the time when the facility or unit triggers the applicability in WAC 173-407-120.

(2) GHG EPS.

Table 1
GHG EPS by Time Period

GHG EPS lb GHG/MWh	First Applicable Date	Last Applicable Date
1,100	July 1, 2008	March 23, 2018
970	March 24, 2018	Determined by chapter 194-26 WAC

GHG EPS lb GHG/MWh	First Applicable Date	Last Applicable Date
Chapter 194-26 WAC (Starting March 24, 2018)*		

* Commerce reviews and, if appropriate, updates the GHG EPS every five years as directed by RCW 80.80.050.

(3) A facility may comply with the ((~~emissions performance standard may be~~)) GHG EPS through the use of:

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

(b) ((~~Use of greenhouse gases~~)) GHG emission control((~~s~~)) and ((~~greenhouse gases~~)) sequestration methods meeting the requirements of WAC 173-407-220 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.~~))

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-140 Calculating greenhouse ((~~gases~~)) gas emissions and determining compliance for a baseload electric generation ((~~facilities~~)) facility or unit under Part II. (1) The owner or operator of a baseload electric generation facility or unit ((~~that~~)) must collect the following data to demonstrate compliance with the ((~~emissions performance standard~~)) GHG EPS in WAC 173-407-130((~~(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 173-407-230.~~)) The usage and heat content of fuels and fuel feed stocks that provide energy input to the baseload electric generation facility or unit. The facility must monitor and report these data as directed by WAC 173-407-160.

(b) Electrical output in MWh as measured and recorded per WAC ((~~173-407-230~~)) 173-407-160.

(c) Regulated ((~~greenhouse gases~~)) GHG emissions in pounds/MMBtu from the baseload electric generation facility or unit as monitored, reported and calculated in WAC ((~~173-407-230~~)) 173-407-160.

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

(e) Adjustment for sequestered GHG emissions. A facility owner or operator can subtract the quantity of GHG emissions that are permanently sequestered through an approved sequestration method(s) during the calendar year from the total pounds of GHG emitted during that year.

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

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

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

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-150 Calculating greenhouse ((~~gases~~)) gas emissions and determining compliance for a baseload electric cogeneration ((~~facilities~~)) facility or unit under Part II. (1) ((~~To use this section for determining compliance with the greenhouse gases emissions performance standard,~~)) This section applies to a facility ((~~must have~~)) or unit certified to the Federal Energy Regulatory Commission ((~~(FERC)~~)) under the provisions of 18 C.F.R. Part 292, Subpart B as a qualifying cogeneration facility (in effect on the date in WAC 173-407-006).

(2) The owner or operator of a baseload electric cogeneration facility or unit that must demonstrate compliance with the ((~~emissions performance standard~~)) GHG EPS in WAC 173-407-130((~~(1) shall~~)) must 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 173-407-230.~~)) The usage and heat content of fuels and fuel feed stocks that provide energy input to the baseload electric cogeneration facility or unit. The facility or unit owner or operator must monitor and report these data as directed by WAC 173-407-160.

(b) Electrical output in MWh as measured and recorded per WAC ((~~173-407-230~~)) 173-407-160.

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

(d) Regulated ((~~greenhouse gases~~)) GHG emissions in pounds/MMBtu from ((~~the~~)) a baseload electric cogeneration facility or unit as monitored, reported and calculated in WAC ((~~173-407-230~~)) 173-407-160.

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

(f) Adjustment for sequestered GHG emissions. An owner or operator can subtract the quantity of GHG emissions that are permanently sequestered through an approved sequestration method(s) during the calendar year from the total pounds of GHG emitted during that year.

(3) Bottoming-cycle cogeneration facilities. Ecology and the facility must jointly develop 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~~)) GHG EPS. To the extent possible, ecology and the facility must base 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. Ecology and the facility must ensure that the formula ((~~should be~~)) is specific to the ((~~installed~~)) equipment installed, ((~~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~~)) GHG EPS, 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~~)) GHG emissions produced in pounds.

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

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

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

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-200 Requirements for and timing of sequestration plan or sequestration program submittals under Part II. (1) The owner or operator of a facility or unit that does not meet the applicable

EPS in WAC 173-407-130 must submit a sequestration plan ((~~for a source that~~)) to ecology when they propose to begin((~~s~~)) sequestration after the start of commercial operation ((~~shall be submitted when~~)) and engage in an action listed in (a) through (d) of this subsection:

(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 facility 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)~~)) The owner or operator of a new facility or unit submits a notice of construction application ((~~is submitted to ecology or a local authority for a new baseload electric generation facility or baseload electric cogeneration facility or unit at a baseload electric generation facility or baseload electric cogeneration facility~~)) to the permitting authority;

(((~~d~~))) (b) The owner or operator of an existing facility or unit submits a notice of construction application ((~~is submitted to ecology or a local~~)) to the permitting authority for an upgrade ((~~to an existing baseload electric generation facility or unit or an existing baseload electric cogeneration facility or unit~~)) and the upgrade is not ((~~an~~)) exempt ((~~upgrade~~));

(((~~(e) A baseload electric generation~~)) (c) The owner or operator of a facility or unit ((~~or baseload electric cogeneration facility or unit enters~~)) signs 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~~)) GHG EPS in effect at the time the new long-term financial commitment occurs; or

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

(2) The owner or operator of a facility or unit that does not meet the applicable GHG EPS in WAC 173-407-130 must submit a sequestration program ((~~for a source that~~)) to ecology when they propose to begin((~~s~~)) sequestration on or before the start of commercial operation ((~~is required to be submitted when~~)) and engage in an action listed in the following subsections:

(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)~~)) The owner or operator of a new facility or unit submits a notice of construction application ((~~is submitted to ecology or a local authority for a new baseload electric generation facility or unit or baseload electric cogeneration facility or unit~~)) to the permitting authority;

(((~~d~~))) (b) The owner or operator of an existing facility or unit submits a notice of construction application ((~~is submitted to ecology or a local~~)) to the permitting authority for an upgrade ((~~to an existing baseload electric generation facility or unit or baseload electric~~

~~cogeneration facility or unit~~)) and the upgrade is not an exempt upgrade;

((~~(e) A baseload electric generation~~)) (c) The owner or operator of a facility or unit ((~~or baseload electric cogeneration facility or unit enters~~)) signs a new long-term financial commitment with an electric utility to provide baseload power if the facility or unit does not comply with the ((~~emissions performance standard~~)) GHG EPS in effect at the time the new long-term financial commitment occurs; or

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

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-210 Types of permanent sequestration under Part II. ((~~Specific~~)) (1) Requirements for permanent geologic sequestration of ((~~greenhouse gases can be found~~)) GHG are in WAC 173-218-115.

(2) Requirements for ((~~approval of sequestration plans or sequestration programs for other (~~)) permanent nongeologic((~~) types of permanent~~)) sequestration ((~~containment systems~~)) of GHG are ((~~found~~)) in WAC 173-407-220.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-220 Requirements for nongeologic permanent sequestration plans and sequestration programs under Part II. ((~~In order to meet the emissions performance standard, all~~)) A baseload electric generation ((~~facilities or individual units~~)) facility or unit or baseload electric cogeneration facility or unit that ((~~are~~)) is subject to ((~~this rule, and must~~)) Part II and Part III of this chapter and proposes to use nongeologic sequestration of ((~~greenhouse gases~~)) GHG to meet the ((~~emissions performance standard, will~~)) GHG EPS must submit a sequestration plan((~~s~~)) or sequestration program((~~s~~)) for approval to ((~~EFSEC or~~)) ecology((~~, as appropriate~~)).

(1) A sequestration plan((~~s~~)) and sequestration program((~~s~~)) for nongeologic sequestration of GHG 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 emissions performance standard in WAC 173-407-130 is required to~~)) must provide ((~~a~~)) letters of credit sufficient to ensure successful implementation, closure, and post-closure activities identified in the sequestration plan or 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~~)) must establish a letter of credit to cover all expenses for construction and operation of necessary equipment, and any other sig-

nificant costs. The owner or operator must revise 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~~)) must 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 ecology or EFSEC, as appropriate, as the beneficiary to carry out the closure and post-closure activities. The value of the closure and post-closure accounts ((~~shall~~)) must cover all costs of closure and post-closure care identified in the closure and post-closure plan. The owner or operator must revise 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 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~~)) must 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~~)) the system(s) will store GHG.

(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~~)) facility or unit and place of ((~~greenhouse gases~~)) GHG containment ((~~system~~)) system(s);

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

(D) The proposed calculated maximum ((~~volume of greenhouse gases to be sequestered~~)) quantity of sequestered GHG and areal extent of the location where the ((~~greenhouse gases will be stored~~)) facility will store GHG using a method acceptable to and filed with ecology; and

(E) Evaluation of the quantity of sequestered ((~~greenhouse gases~~)) GHG and their physical or chemical forms that may escape from the containment ((~~system~~)) system(s) at the proposed project.

(iii) A public safety and emergency response plan for the proposed project. The plan ((~~shall~~)) must 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~~)) GHG loss detection and monitoring plan for all parts of the sequestration project. The approved ((~~greenhouse gases~~)) GHG loss detection and monitoring plan ((~~shall~~)) must address identification of potential release to the atmosphere.

(v) A detailed schedule of annual benchmarks for sequestration of ((~~greenhouse gases~~)) GHG.

(vi) A closure and post-closure plan.

(vii) Any other information that ((~~the department~~)) ecology deems necessary to make its determination.

((~~(vii) A closure and post-closure plan.~~))

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

(d) If the sequestration plan or sequestration program fails to sequester ((~~greenhouse gases~~)) GHG as provided in the plan or program, the owner or operator of the baseload electric generation facility or unit or baseload electric cogeneration facility or unit is no longer in compliance with the ((~~emissions performance standard~~)) GHG EPS.

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

(a) Public notice. Ecology will make a public notice ((~~shall be made~~)) only after the owner or operator of the facility submits all information required by ((~~the permitting authority has been submitted and after~~)) ecology and ecology makes all applicable preliminary determinations((~~, if any, have been made~~)). The ((~~applicant or other initiator of the action~~)) owner or operator of the facility or unit must pay the cost of providing public notice. Public notice ((~~shall~~)) must 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 owner or operator of the facility must make the sequestration plan or sequestration program ((~~must be~~)) available for public inspection in at least one location near the proposed project.

(b) Public comment period.

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

(c) Public ((~~hearings~~)) hearing(s).

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

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

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-230 Emissions and electrical production monitoring, recordkeeping and reporting requirements under Part II. (1) Monitoring and recordkeeping requirements. ((~~For all~~)) A baseload electric generation ((~~facilities~~)) facility or unit((~~s~~)) and baseload electric cogeneration ((~~facilities or units subject to WAC 173-407-120,~~)) facility or unit required to meet GHG EPS in WAC 173-407-130 must monitor and report the following parameters ((~~shall be monitored and reported~~)) as explained below:

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

(b) Useful thermal energy output in MWH_{eq}: 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 facility can accomplish 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~~)) Each facility will measure on an hourly or daily basis and ((~~recorded~~)) record the measurements in a form suitable for ((~~use in calculating~~)) calculations to determine compliance with the ((~~greenhouse gases emissions performance standard~~)) GHG EPS.

(c) Regulated ((~~greenhouse gases~~)) GHG emissions.

(i) The regulated ((~~greenhouse gases~~)) GHG emissions are the emissions of regulated ((~~greenhouse gases~~)) GHG 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~~)) A facility or unit using CO_2 controls and sequestration to comply with the ((~~greenhouse gases emissions performance standard,~~)) GHG EPS must include direct and fugitive CO_2 emissions from the CO_2 separation and compression process ((~~are included~~)).

(ii) Carbon dioxide ((~~(CO_2)~~)).

(A) ((~~For baseload electric generation facilities or units and baseload electric cogeneration facilities or units~~)) A facility or unit subject to WAC ((~~173-407-120, producing~~)) 173-407-130, with a net output rating of 25 MW or more of electricity, must monitor CO_2 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((~~.~~)), except under (c)(i)(A)(I) and (II) of this subsection (federal rules in effect on the date in WAC 173-407-006):

(I) If allowed by the requirements of 40 C.F.R. Part 72, a facility may estimate CO_2 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 (federal rules in effect on the date in WAC 173-407-006).

(II) If the annual heat input to the electric generation facility is less than 90 percent fossil fuel, ecology may approve the use of emission factors in 40 C.F.R. Part 98, Table C-1 (in effect on the date in WAC 173-407-006).

(B) ((~~For baseload electric generation facilities or units and baseload electric cogeneration facilities or units~~)) A facility or unit subject to WAC ((~~173-407-120 producing~~)) 173-407-130, with a net output of less than 25 MW of electricity, ((~~the owner or operator may either utilize a~~)) must use one of the following three methods:

(I) 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((~~, or use~~)) (federal rules in effect on the date in WAC 173-407-006);

(II) 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 (federal rules in effect on the date in WAC 173-407-006); or

(III) Emission factors in 40 C.F.R. Part 98, Table C-1 (in effect on the date in WAC 173-407-006).

(C) When the monitoring data from a continuous emission monitoring system does not meet the completeness requirements of 40 C.F.R. Part 75, Subpart D, the ((~~baseload electric generation~~)) facility ((~~operator~~)) owner or operator ((~~will~~)) must substitute data according to the process in 40 C.F.R. Part 75, Appendix C (in effect on the date in WAC 173-407-006).

(D) A facility or unit must install continuous emission monitors for CO_2 ((~~will be installed~~)) under (c)(ii) of this subsection at a location meeting the requirements of 40 C.F.R. Part 75, Appendix A. The CO_2 and flow monitoring equipment must meet the quality control and quality assurance requirements of 40 C.F.R. Part 75, Appendix B (in effect on the date in WAC 173-407-006).

(iii) Nitrous oxide (N_2O).

(A) ((~~For baseload electric generation facilities or units or baseload electric cogeneration facilities or units subject to~~)) A facility or unit that triggers the applicability in WAC 173-407-120 ((~~producing~~)) prior to March 24, 2018, and produces 25 MW or more of electricity((~~,~~)) must determine the N_2O emissions ((~~shall be determined~~)) as follows:

(I) For the first year of operation, facility owner or operator will estimate N_2O emissions ((~~are estimated by use of emission factors as published by the Environmental Protection Agency, the federal Department of Energy's Energy Information Agency,~~)) using the emission factors from 40 C.F.R. Part 98, Table C-2 or other authoritative source as approved by ecology ((~~for use by the facility~~)).

(II) For succeeding years, facility operator or owner will estimate N_2O emissions ((~~will be estimated through use of~~)) using generating unit specific emission factors derived ((~~through use of~~)) from emissions testing using ecology or ((~~Environmental Protection Agency~~)) EPA approved methods. Facility owner or operator must derive the emission factor ((~~shall be derived~~)) through testing N_2O emissions from the stack at varying loads and through at least four separate test periods spaced evenly throughout the first year of commercial operation.

(B) ((~~For baseload electric generation facilities or units or baseload electric cogeneration facilities or units subject to~~)) A fa-

cility or unit that triggers the applicability in WAC 173-407-120 ((producing)) prior to March 24, 2018, and produces less than 25 MW of electricity((,)) will estimate the annual N_2O emissions ((will be estimated by use of emission factors as published by the Environmental Protection Agency, the federal Department of Energy's Energy Information Agency,)) by the emission factors from 40 C.F.R. Part 98, Table C-2 or other authoritative source as approved by ecology ((for use by the facility)).

(C) A facility or unit required to develop a generating unit specific N_2O emission factor prior to March 24, 2018, must estimate N_2O emissions using the generating unit specific emission factor.

(D) Any facility or unit that triggers the applicability in WAC 173-407-120 on or after March 24, 2018, must estimate N_2O emissions using one of the following emission factors:

(I) Generating unit specific emission factor derived through emissions testing following the schedule in (c)(iii)(A) of this subsection;

(II) Emission factor from 40 C.F.R. Part 98, Table C-2; or

(III) Other emission factor from authoritative sources as approved by ecology.

(iv) Methane (CH_4).

(A) ((For baseload electric generation facilities or units or baseload electric cogeneration facilities or units subject to)) A facility or unit that triggers the applicability in WAC 173-407-120 ((producing)) prior to March 24, 2018, and produces 25 MW or more of electricity((,)) must determine the CH_4 emissions ((shall be determined)) as follows:

(I) For the first year of operation, the facility owner or operator will estimate CH_4 emissions ((are estimated by use of emission factors as published by the Environmental Protection Agency, the federal Department of Energy's Energy Information Agency,)) using the emission factors from 40 C.F.R. Part 98, Table C-2 or other authoritative source as approved by ecology ((for use by the facility)).

(II) For succeeding years, the facility owner or operator will estimate CH_4 emissions ((will be estimated through use of plant)) using generating unit specific emission factors derived ((through use of)) from emissions testing using ecology or ((Environmental Protection Agency)) EPA approved methods. The facility owner or operator must derive the emission factor ((shall be derived)) through testing CH_4 emissions from the stack at varying loads and through at least four separate test periods spaced evenly through the first year of commercial operation.

(B) ((For baseload electric generation facilities or units or baseload electric cogeneration facilities or units subject to)) A facility or unit that triggers the applicability in WAC 173-407-120 ((producing)) prior to March 24, 2018, and produces less than 25 MW of electricity((.)) will estimate the annual CH_4 emissions ((will be estimated by use of emission factors as published by the Environmental Protection Agency, the federal Department of Energy's Energy Information Agency,)) by the emission factors from 40 C.F.R. Part 98, Table C-2 or other authoritative source as approved by ecology ((for use by the facility)).

(C) A facility or unit required to develop a generating unit specific CH_4 emission factor prior to March 24, 2018, must estimate CH_4 emissions using the generating unit specific emission factor.

(D) Any facility or unit that triggers the applicability in WAC 173-407-120 on or after March 24, 2018, must estimate CH_4 emissions using one of the following emission factors:

(I) Generating unit specific emission factor derived through emissions testing following the schedule in (c)(iv)(A) of this subsection;

(II) Emission factor from 40 C.F.R. Part 98, Table C-2; or

(III) Other emission factor from authoritative sources as approved by ecology.

(d) Fuel usage and heat content information.

(i) Facility owner and operator must monitor fossil fuel usage ((~~will be monitored~~)) by measuring continuous fuel volume or weight as appropriate for the fuel used. ((~~Measurement will be~~)) Facility owner and operator must measure on an hourly or daily basis and ((~~recorded~~)) record the measurements in a form suitable for use in calculating ((~~greenhouse gases~~)) GHG emissions.

(ii) Facility owner or operator must monitor renewable ((~~energy~~)) fuel usage ((~~will be monitored~~)) by measuring continuous fuel volume or weight as appropriate for the fuel used. ((~~Measurement will be~~)) Facility owner or operator must measure on an hourly or daily basis and ((~~recorded~~)) record the measurements in a form suitable for use in calculating ((~~greenhouse gases~~)) GHG emissions.

(iii) Facility owner or operator must monitor renewable fuel feedstocks by measuring the fuel volume or weight, as appropriate, as the feedstocks are used in the combustion process. Facility owner or operator must measure on an hourly or daily basis and record the measurements in a form suitable for use in calculating GHG emissions.

(iv) Facility owner or operator must monitor renewable resources used in the production of electricity continuously by a method approved by ecology to determine heat input to the electric generation process.

(v) Facility owner or operator must test 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~~)) must submit a proposed fuel content monitoring program to ecology for ((~~ecology~~)) approval. Upon request and submission of appropriate documentation of fuel heat content variability, ecology 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)~~)) Use the representative heat content for the fuel instead of the periodic monitoring of heat content.

(vi) Facility owner or operator must test renewable ((~~energy~~)) fuel heat content ((~~will be tested~~)) monthly or with a different frequency approved by ecology. ((~~A~~)) The facility owner or operator must base the 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 173-407-120~~)) a facility or unit using a mixture of renewable and fossil fuels ((~~do~~)) does not adjust their ((~~greenhouse gases~~)) GHG emissions by accounting for the heat input from renewable ((~~energy~~))

fuels, ecology does not require monitoring of the heat content of the renewable ((~~energy~~)) fuels ((~~is not required~~)).

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

(vii) Facility owner or operator must test the heat content of renewable fuel feedstocks monthly or on a different schedule approved by ecology. Ecology will approve the different schedule based on the variability of the heat content of the renewable fuel feedstocks. The facility owner or operator must measure the heat content of the fuel feedstocks in the form they are used in the combustion process.

(A) If a facility or a unit using a mixture of renewable and fossil fuels and does not adjust their GHG emissions by accounting for the heat input from renewable fuels, ecology does not require monitoring of the heat content of the renewable fuel feedstocks.

(B) Upon request and with supporting documentation, ecology may allow a source to use representative heat content for the renewable fuel feedstock instead of the periodic monitoring of heat content required above.

(2) Reporting requirements. Facility owner or operator must report the results of the monitoring required by this section ((~~shall be reported~~)) to ecology and the permitting authority annually.

(a) ((~~Facilities~~)) Facility or unit((~~s~~)) subject to the reporting requirements of 40 C.F.R. Part 75. Facility owner or operator must report annual emissions of CO_2, N_2O and CH_4 ((~~will be reported~~)) that occurred in the previous calendar year and supporting information to ecology and the ((~~air quality permitting authority with jurisdiction over the facility~~)) permitting authority by January 31st of each calendar year ((~~for emissions that occurred in the previous calendar year~~)). The ((~~report may be~~)) facility owner or operator may submit the report as an Excel™ or CSV format copy of the report submitted to EPA per 40 C.F.R. Part 75 with ((~~the~~)) N_2O and CH_4 emissions ((~~for N_2O and CH_4~~)) appended to the report.

(b) ((~~For facilities~~)) Facility or unit((~~s~~)) not subject to the reporting requirements of 40 C.F.R. Part 75((~~,~~)). Facility owners or operators must report annual emissions of CO_2, N_2O and CH_4 that occurred in the previous calendar year and supporting information ((~~will be reported~~)) to ecology and the ((~~air quality permitting authority with jurisdiction over the facility~~)) permitting authority by January 31st of each calendar year ((~~for emissions that occurred in the previous calendar year~~)).

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-240 Enforcement of the emissions performance standard under Part II.

Note: Ecology is the agency responsible for enforcing this section.

(1) ((~~Any power plant~~)) A baseload electric generation facility or unit or baseload electric cogeneration facility or unit subject to WAC ((~~173-407-120 that does not~~)) 173-407-130 that fails to meet the ((~~emissions performance standard on schedule shall~~)) applicable GHG

EPS or any implementation schedules and requirements in a sequestration plan or program may be subject to enforcement ((~~under~~)) using the enforcement criteria and procedures specified in chapter 70.94 RCW.

Penalties can include:

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

(b) Revocation of the 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~~)) must 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~~)) must be submitted to ecology ((~~or EFSEC, as appropriate,~~)) for approval.

(3) Provisions for unavoidable circumstances.

(a) The owner or operator of a facility or unit operated under an approved sequestration plan or sequestration program shall have the burden of proving to ecology((~~, EFSEC, or the decision-making authority~~)) in an enforcement action that failure to meet a sequestration benchmark was unavoidable. This demonstration ((~~shall~~)) must be a condition to ((~~obtaining~~)) obtain 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~~)) must be excused and not subject to financial penalty.

(c) Failure to meet a sequestration benchmark ((~~shall~~)) must be reported as part of the routine sequestration monitoring reports or by January 31st of the year following the calendar year during which the event occurred ((~~or as part of the routine sequestration monitoring reports~~)). Upon request by ecology, the ((~~owner(s) or operator(s)~~)) owner or operator of the sequestration project ((~~source(s) shall~~)) must 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~~)) must be considered unavoidable provided the source reports as required under (c) of this subsection((~~, and~~)). The owner or operator of the sequestration project must adequately demonstrate((~~s~~)) that the failure to meet a sequestration benchmark could not ((~~have been~~)) be prevented through careful planning and design and if a bypass of equipment occurs, ((~~that such~~)) and the bypass is necessary to prevent loss of life, personal injury, or severe property damage.

(e) ((~~Maintenance.~~)) Failure to meet a sequestration benchmark due to scheduled maintenance ((~~shall~~)) must 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~~)) be 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~~)) must 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~~)) that indicated inadequate design, operation, or maintenance; and

(iii) The owner or 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. ((~~(a)~~)) Enforcement of ((~~an ecology or local air agency permitting authority notice of construction will take place under the authority~~)) a violation of an order of approval must follow the requirements of chapter 70.94 RCW, as implemented by the permitting authority. Enforcement of an ecology approved sequestration plan or sequestration program ((~~will~~)) must be in accordance with this section.

((~~(b) Enforcement of any part of an EFSEC site certification agreement will proceed in accordance with RCW 80.50.150.~~))

PART III
LONG-TERM FINANCIAL COMMITMENTS; ((~~RELATIONSHIP OF ECOLOGY AND THE WUTC; AND RELATIONSHIP OF ECOLOGY AND THE GOVERNING BOARDS OF~~)) ECOLOGY'S CONSULTATION WITH UTC AND CONSUMER-OWNED UTILITIES ((~~UNDER CHAPTER 80.80 RCW~~))

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-300 Procedures for determining compliance with the emissions performance standard of a long-term financial commitment ((~~and addressing electricity from unspecified sources and specified sources~~)) under Part II. ((~~(1) The following procedures are adopted by the department to be utilized by the department under RCW 80.80.060 and to be available to and utilized by the governing boards of consumer-owned utilities pursuant to RCW 80.80.070 when evaluating a potential long-term financial commitment when the long-term financial commitment includes electricity from unspecified sources, electricity from one or more specified sources, and/or provisions to meet load growth with electricity from unspecified and/or specified sources.~~

~~(2) For each year of a long-term financial commitment for electric power, the regulated greenhouse gases emissions from specified and unspecified sources of power are not to exceed the emissions performance standard in WAC 173-407-130(1), in effect on the date the long-term contract is executed. The emissions performance standard for a long-term financial commitment for electricity that includes electricity from specified and unspecified sources is calculated using a~~

time-weighted average of all sources of generation and emissions in the years in which they are contributing electricity and emissions in the commitment. Each source's proportional contribution to emissions per each MWh delivered under the contract is added together and summed for each year and divided by the number of years in the term of the commitment.

(3) An extension of an existing long-term financial commitment is treated as a new commitment, not an extension of an existing commitment.

(4) Annual and lifetime calculations of greenhouse gases emissions.

(a) The annual average emissions shall be calculated, for every year of the contract, using the formula in subsection (5) of this section. The calculation of the pounds of greenhouse gases per megawatt-hour is based upon the delivered electricity, including the portion from specified and unspecified sources, of the total portfolio for the year for which the calculation is being made.

(b) The average greenhouse gases emissions per MWh of the power supply portfolio over the life of the long-term financial commitment is compared to the emissions performance standard. The calculation of the pounds of greenhouse gases per MWh is based on the expected annual delivery contracted or expected to be supplied by each specified and unspecified source's portion of the total portfolio of electricity to be provided under the contract for the year for which the calculation is being made.

(c) Default values adopted in this procedure shall be used for each source unless actual emissions are known or specified by the manufacturer. A default greenhouse gases emissions value of an average pulverized coal plant per WAC 173-407-300 (5)(b) shall be used for unspecified sources in the procedure.

(5) The annual average calculation shall be performed using the regulated greenhouse gases emissions factors as follows:

(a) For a specified source, utilize the manufacturer's emissions specification or the measured emission rate for a specified generator. When there is no available information on greenhouse gases emissions from a specified source, utilize the following:

(i) Combined cycle combustion turbines that begin operation after July 1, 2008 = 1,100 lbs/MWh or as updated by rule in 2012 and every five years thereafter.

(ii) Steam turbines using pulverized coal = 2,600 lbs/MWh minus the amount of greenhouse gases permanently sequestered by the facility on an annual basis divided by the MWhs generated that year.

(iii) Integrated gasification combined cycle turbines = 1,800 lbs/MWh minus the amount of greenhouse gases permanently sequestered by the facility on an annual basis divided by the MWhs generated that year.

(iv) Simple cycle combustion turbines = 1,800 lbs/MWh minus the amount of greenhouse gases permanently sequestered by the facility on an annual basis divided by the MWhs generated that year.

(v) Combined cycle combustion turbines that begin operation before July 1, 2008 = 1,100 lbs/MWh.

(b) Electricity from unspecified sources = 2,600 lbs/MWh.

(c) Renewable resources = 0 lbs/MWh.

Example Calculation

$$AE = \frac{(F_1 \times MWh_1) + (F_2 \times MWh_2) + (F_3 MWh_3) + \ldots (F_n \times MWh_n)}{Total\ MWh}$$

~~where:~~

~~AE~~	=	~~Average emissions in lb/MWh~~
~~F~~	=	~~Regulated greenhouse gases emissions factor in lb/MWh~~
~~MWh~~	=	~~Total MWh purchased or generated by the utility's own generation capacity during the year~~
~~Total MWh~~	=	~~Total MWh from all source types for that year~~))

(1) A baseload generation facility or unit or baseload cogeneration facility or unit in a long-term financial commitment must meet the GHG EPS in WAC 173-407-130 in effect at the time the parties sign the commitment.

(2) A long-term financial commitment must meet the following conditions to comply with the GHG EPS in WAC 173-407-130:

(a) Electricity from unspecified sources is limited to 12 percent of the total electricity in a long-term financial commitment.

(b) Long-term financial commitments with the Bonneville power administration are exempt from meeting the GHG EPS.

(c) For a long-term financial commitment with multiple power plants, each specified power plant named in the long-term financial commitment must individually meet the GHG EPS in WAC 173-407-130 in effect on the date the parties sign the commitment. Ecology deems a power plant named in a long-term financial commitment with multiple power plants meeting the following criteria to be in compliance with the GHG EPS:

(i) A facility or unit powered exclusively by renewable resources;

(ii) A facility or unit that is designed and intended to use a renewable fuel to provide at least 90 percent of its total annual heat input;

(iii) A baseload electric cogeneration facility or unit, fueled by natural gas or waste gas or a combination of the two fuels, that was in operation before June 30, 2008, unless it has:

(A) Changed ownership; or

(B) Upgraded.

(3) If ecology cannot determine compliance with the GHG EPS for a long-term financial commitment based on the conditions in subsection (2) of this section, ecology must use procedures in WAC 173-407-140 or 173-407-150 to determine compliance with the GHG EPS. All reports required by WAC 173-407-140(2) or 173-407-150(5) must be sent to ecology. An investor-owned electric utility must send another copy of the reports to UTC. A consumer owned electric utility must send another copy of the reports to their governing board.

(4) This rule exempts long-term purchase of coal transition power from meeting the GHG EPS as long as the term of the long-term purchase meets the schedule in RCW 80.80.040 (3)(c).

(5) In determining if a long-term financial commitment complies with the EPS, all unspecified power will have an emission rate of 2,300 lb/MWh.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-310 ((~~Relationship of ecology and Washington utilities and transportation commission~~)) Ecology's consultation with UTC under Part II. (1) ((~~The Washington utilities and transportation commission (commission) shall consult with ecology to apply the procedures adopted by the department to verify the emissions of greenhouse gases from baseload electric generation under RCW 80.80.040.~~)) On request for assistance from the UTC, ecology ((~~shall~~)) must report to ((~~the commission~~)) UTC whether baseload electric generation will comply with the ((~~greenhouse gases emissions performance standard~~)) GHG EPS for ((~~the duration of~~)) the period that the investor-owned utility contracts for the baseload electric generation ((~~is supplied to the electrical company. (RCW 80.80.060(7).)~~)).

(2) Ecology's consultation with ((~~the commission~~)) UTC includes:

(a) ((~~In assisting the commission to apply the emissions verification procedures adopted, ecology will compare the commission's procedures to the ecology procedures found in WAC 173-407-130, 173-407-140, and 173-407-230.~~)) Assist UTC to apply the conditions in WAC 173-407-300, 480-100-405, and 480-100-415.

(b) ((~~In consulting with the commission to~~)) Determine if a long-term financial commitment for baseload electric generation meets the ((~~greenhouse gases emissions performance standard, ecology shall consider whether the commitment meets WAC 173-407-300~~)) GHG EPS based on the conditions in WAC 173-407-300, 173-407-140, 173-407-150, and 173-407-160.

(3) ((~~When conducting the consultation and reporting processes, ecology will conclude this process of consultation and assistance~~)) Ecology will provide a report within thirty days of receiving all necessary information ((~~from the commission to determine compliance~~)), unless UTC grants additional time.

AMENDATORY SECTION (Amending WSR 08-14-011, filed 6/19/08, effective 7/20/08)

WAC 173-407-320 ((~~Relationship of ecology and the governing boards of~~)) Ecology's consultation with consumer-owned utilities under Part II. (1) ((~~RCW 80.80.070(2) requires~~)) The governing boards of consumer-owned utilities ((~~to "review and make a determination on any long-term financial commitment by the utility, pursuant to this chapter and after consultation with the department,~~)) may consult with ecology to determine whether the baseload electric generation ((~~to be~~)) supplied under ((~~that~~)) a long-term financial commitment complies with the ((~~greenhouse gases emissions performance standard established under RCW 80.80.040." During this consultation process, ecology shall assist the governing boards with the utilization of the method in WAC 173-407-300 to determine whether the long-term financial commitment for baseload electric generation meets the emissions performance standard~~)) GHG EPS in WAC 173-407-130 in effect at the time the long-term financial commitment is signed.

(2) Ecology's assistance will be limited to ((~~that assistance necessary~~)) providing technical support for the board to interpret,

clarify or otherwise determine that the proposed long-term financial commitment for baseload electric generation will comply with the ((~~emissions performance standard~~)) GHG EPS.

((~~(2) RCW 80.80.070(5) also requires~~)) (3) The governing board((~~s~~)) of consumer-owned utilities ((~~to "~~)) must apply the ((~~procedures adopted by the department~~)) conditions in WAC 173-407-300, 173-407-140, 173-407-150, and 173-407-160 to verify the emissions of ((~~greenhouse gases~~)) GHG from baseload electric generation ((~~under RCW 80.80.040," and allow them to "~~)).

(4) The governing board may request assistance from ((~~the department in doing so." The procedures adopted by the department to be utilized by the governing boards are found in WAC 173-407-300. Ecology shall provide consultation or further assistance to the governing boards of a consumer-owned utility to apply such procedures if the governing board makes such a request.~~

~~(3)~~)) ecology in performing the analyses in subsection (3) of this section.

(5) Ecology will ((~~conclude this process of consultation and assistance~~)) provide technical support within thirty days of receiving all necessary information unless the governing board ((~~requesting the assistance~~)) grants additional time.

NEW SECTION

The following section of the Washington Administrative Code is decodified and recodified as follows:

Old WAC Number	New WAC Number
173-407-230	173-407-160