MEMORANDUM

From: Office of Air Quality Planning and Standards
U.S. Environmental Protection Agency

To: EGU NSPS Docket (EPA-HQ-OAR-2013-0603)

Date: June, 2014

Subject: Amended Regulatory Text (Broad Applicability)

Amended Regulatory Text

On January 8, 2014, the EPA proposed amendments (79 FR 1430) to the regulatory text of subparts Da and KKKK to include greenhouse gas (GHG) standards for new electric generating units (EGUs). As an alternative to amending proposed subparts Da and KKKK, the EPA co-proposed creating a new subpart TTTT to include the proposed GHG standards. We intend to finalize the proposed amendments for modified and reconstructed EGUs following the approach finalized in the new source proposal published on January 8, 2014. For example, if the new source requirements are included in subparts Da and KKKK and use the applicability described in detail in docket item EPA-HQ-OAR-2013-0495-0062, the proposed requirements in this proposal would be added to those amendments.

To facilitate understanding the amendments being proposed in this proposal and allow interested persons to see how the proposed amendments for modified and reconstructed sources relate to the amendments from January 8, 2014 for newly constructed sources, the following document uses track changes to demonstrate the GHG standards for the proposed standards for modified and reconstructed EGUs on top of the regulatory text proposed on January 8, 2014.

In docket item EPA-HQ-OAR-2013-0495-0062 of the January 8, 2014, proposal, the EPA elaborated upon the request for comment included in the preamble on whether the general applicability of the proposed standards should be broadened and based on design characteristics instead of design characteristics and operating parameters. Under this approach, a GHG emission standard would apply during periods when certain conditions are met and no numerical GHG emission standard would apply during periods when one or more of those conditions are not met. In other words, although there would be no numerical emission limit, the facility would remain subject to the standard of performance. The track changes of the proposed amendments in this proposal include this expanded applicability approach.

Subpart Da-— Standards of Performance for Electric Utility Steam Generating Units

2. Section 60.46Da is added to read as follows:

§60.46Da Standards for carbon dioxide (CO_2).

(a) Your affected facility is subject to this section if it meets the conditions specified in paragraphs (a)(1) or (a)(2) of this section, except as specified in paragraph (b) of this section.

(1) ~~c~~Construction commenced after January 8, 2014 and the facility was constructed for the purpose of supplying and supplies more than one-third of its potential electric output capacity and more than 219,000 MWh as net-electric sales on an annual basis; or

(2) Modification or reconstruction commenced after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER], and the affected facility was constructed for the purpose of supplying more than one-third of its potential electric output and more than 219,000 MWh as net-electric sales on an annual basis, ~~meets the conditions specified in paragraphs (a)(1) and (a)(2) of this section, except as specified in paragraph (b) of this section.~~

~~(1) The affected facility combusts fossil fuel for more than 10.0 percent of the heat input during any 3 consecutive calendar years.~~

~~(2) The affected facility supplies more than one-third of its potential electric output and more than 219,000 MWh net-electric output to a utility power distribution system for sale on an annual basis.~~

(b) The following EGUs are not subject to this section:

(1) The proposed Wolverine EGU project described in Permit to Install No. 317-07 issued by the Michigan Department of Environmental Quality, Air Quality Division, effective June 29, 2011 (as revised July 12, 2011).

(2) The proposed Washington County EGU project described in Air Quality Permit No. 4911-303-0051-P-01-0 issued by the Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch, effective April 8, 2010, provided that construction had not commenced for NSPS purposes as of January 8, 2014.

(3) The proposed Holcomb EGU project described in Air Emission Source Construction Permit 0550023 issued by the Kansas Department of Health and Environment, Division of Environment, effective December 16, 2010, provided that construction had not commenced for NSPS purposes as of January 8, 2014.

(c) As owner or operator of an affected facility subject to this section, you shall not cause to be discharged into the atmosphere from the affected facility any gases that contain CO_2 in excess of the emissions limit~~ation~~ specified in ~~either~~ this paragraph~~s (c)(1) or (c)(2) of this section~~.

(1) As owner or operator of an affected facility for which construction commenced after January 8, 2014, you shall not cause to be discharged into the atmosphere from the affected facility any gases that contain CO_2 in excess of the emissions limit specified in paragraph (c)(1)(i), (c)(1) (ii), or (c)(1) (iii) of this section.

(i) 500 kilograms (kg) of CO_2 per megawatt-hour (MWh) of gross energy output (1,100 lb CO_2/MWh) on a 12-operating month rolling average basis;~~ or~~

(ii~~2~~) 480 kg of CO_2 per MWh of gross energy output (1,050 lb CO_2/MWh) on an 84-operating month rolling average basis; or

(iii) No numerical emission standard if the affected facility combusts fossil fuel for 10.0 percent or less of the heat input during any 3 consecutive calendar years.~~.~~

(2) As owner or operator of an affected facility for which reconstruction commenced after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER], you shall not cause to be discharged into the atmosphere from the affected facility any gases that contain CO_2 in excess of the emissions limit specified in paragraph (c)(2)(i), (c)(2)(ii), or (c)(2)(iii) of this section.

(i) If the design rated capacity of your affected facility is 590 MW (2,000 MMBtu/h) or less, 950 kg CO_2/MWh of net energy output (2,100 lb CO_2/MWh) on a 12-operating month rolling average basis;

(ii) If the design rated capacity of your affected facility is greater than 590 MW (2,000 MMBtu/h), then 820 kg CO_2/MWh of net energy output (1,900 lb CO_2/MWh) on a 12-operating month rolling average basis; or

(iii) No numerical emission standard if the affected facility combusts fossil fuel for 10.0 percent or less of the heat input during any 3 consecutive calendar years.

(3) As owner or operator of an affected facility for which modification commenced after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER], you shall not cause to be discharged into the atmosphere from the affected facility any gases that contain CO_2 in excess of the emissions limit specified in paragraph (c)(3)(i) or (c)(3)(ii) of this section.

(i) If the facility is not subject to an approved CAA section 111(d) plan (state or federal) at the time of the modification, a CO_2 emissions limit specified in paragraph (c)(3)(i)(A), (c)(3)(i)(B), or (c)(3)(i)(C) of this section.

(A) a site-specific12-operating month rolling average CO_2 emission limit calculated as 2 percent lower than (i.e., 98 percent) the best demonstrated annual historical operating performance for the affected facility using historical CO_2 emissions data for the calendar years 2002 through the most recent full calendar year the affected facility was operating prior to the modification using either recorded net output emission rate data or gross electrical output and CO_2 emissions data as reported under part 75 of this chapter. If incomplete or no data has been submitted under part 75 of this chapter, the Administrator or delegated authority shall approve the use of alternate data sources. The equivalent net output-based standard shall be calculated from gross output-based data assuming a 7.5 percent auxiliary (i.e., parasitic) load (i.e., the best annual value is divided by 0.925);

(B) If the design rated capacity of your affected facility is 590 MW (2,000 MMBtu/h) or less, 950 kg CO_2/MWh of net energy output (2,100 lb CO_2/MWh) on a 12-operating month rolling average basis; or

(C) If the design rated capacity of your affected facility is greater than 590 MW (2,000 MMBtu/h), 820 kg CO_2/MWh of net energy output (1,900 lb CO_2/MWh) on a 12-operating month rolling average basis.

(ii) If the facility is subject to an approved CAA section 111(d) plan (state or federal) at the time of the modification, a site-specific 12-operating month rolling average CO_2 emission limit determined by the CAA section 111(d) implementing authority based on the affected facility performing an energy assessment by an energy professional or engineer that have expertise in evaluating energy systems to identify applicable energy efficiency projects that you will implement at the affected facility to improve the affected facility's operating performance. You must maintain a copy of the most recent energy assessment report. The energy assessment must include at a minimum the elements in paragraphs (c)(3)(ii)(A) through (c)(3)(ii)(C) of this section.

(A) A visual inspection of the facility to identify steam leaks or other sources of reduced efficiency,

(B) A review of available engineering plans and facility operation and maintenance procedures and logs, and

(C) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

(d) You must make compliance determinations at the end of each operating month, as provided in paragraphs (d)(1) and (d)(2) of this section. For the purpose of this section, operating month means a calendar month during which any fossil fuel is combusted in the affected facility.

(1) If you are subject to ~~elect to comply with the~~ a 12-operating month CO_2 emissions limit~~ation in paragraph (c)(1) of this section~~, you must determine compliance monthly by calculating the average CO_2 emissions rate for the affected facility at the end of each 12-operating month period that includes, as the last month, the month for which you are determining compliance.

(2) If you are subject to ~~elect to comply with the~~an 84-operating month CO_2 emissions limit~~ation in paragraph (c)(2) of this section~~, you must determine compliance monthly by calculating the average CO_2 emissions rate for the affected facility at the end of each 84-operating month period that includes, as the last month, the month for which you are determining compliance.

(e) You must conduct an initial compliance determination with the CO_2 emissions limit~~ation~~ for your affected facility within 30 days after accumulating the required number of operating months for the compliance period with which you have elected to comply (i.e., 12-operating months or 84-operating months). The first operating month included in this compliance period is the month in which emissions reporting is required to begin under § 75.64(a) of this chapter.

(f) You must monitor and collect data to demonstrate compliance with the CO_2 emissions limit~~ation~~ according to the requirements in paragraphs (f)(1) through (4) of this section.

(1) You must prepare a monitoring plan in accordance with the applicable provisions in § 75.53(g) and (h) of this chapter.

(2) You must measure the hourly CO_2 mass emissions from each affected facility using the procedures in paragraphs (f)(2)(i) through (vii) of this section, except as provided in paragraph (f)(3) of this section.

(i) You must install, certify, operate, maintain, and calibrate a CO_2 continuous emission monitoring system (CEMS) to directly measure and record CO_2 concentrations in your affected facility's exhaust gases that are emitted to the atmosphere and an exhaust gas flow rate monitoring system according to §75.10(a)(3)(i) of this chapter. If you measure CO_2 concentration on a dry basis, you must also install, certify, operate, maintain, and calibrate a continuous moisture monitoring system, according to §75.11(b) of this chapter.

(ii) For each monitoring system used to determine the CO_2 mass emissions, you must meet the applicable certification and quality assurance procedures in §75.20 of this chapter and Appendices B and D to part 75 of this chapter.

(iii) You must use a laser device to measure the dimensions of each exhaust gas stack or duct at the flow monitor and the reference method sampling locations prior to the initial setup (characterization) of the flow monitor. For circular stacks, you must make measurements of the diameter at three or more distinct locations and average the results. For rectangular stacks or ducts, you must make measurements of each dimension (i.e., depth and width) at three or more distinct locations and average the results. If the flow rate monitor or reference method sampling site is relocated, you must repeat these measurements at the new location.

(iv) You can only use unadjusted exhaust gas volumetric flow rates to determine the hourly CO_2 mass emissions from the affected facility; you must not apply the bias adjustment factors described in section 7.6.5 of Appendix A to part 75 of this chapter to the exhaust gas flow rate data.

(v) If you choose to use Method 2 in Appendix A-1 to this part to perform the required relative accuracy test audits (RATAs) of the part 75 flow rate monitoring system, you must use a calibrated Type-S pitot tube or pitot tube assembly. You must not use the default Type-S pitot tube coefficient.

(vi) If two or more affected facilities share a common exhaust gas stack and are subject to the same CO_2 emissions limit~~ation~~ in paragraph (c) of this section, you may monitor the hourly CO_2 mass emissions at the common exhaust gas stack rather than monitoring each affected facility separately.

(vii) If the exhaust gases from the affected facilities are emitted to the atmosphere through multiple stacks (or if the exhaust gases are routed to a common stack through multiple ducts and you choose to monitor in the ducts), you must monitor the hourly CO_2 mass emissions and the "stack operating time" (as defined in § 72.2 of this chapter) at each stack or duct separately.

(3) As an alternative to complying with paragraph (f)(2) of this section, for affected facilities that do not combust any solid fuel, you may determine the hourly CO_2 mass emissions by using Equation G-4 in Appendix G to part 75 of this chapter according to the requirements specified in paragraphs (f)(3)(i) and (f)(3)(ii) of this section.

(i) You must implement the applicable procedures in Appendix D to part 75 of this chapter to determine hourly unit heat input rates (MMBtu/h), based on hourly measurements of fuel flow rate and periodic determinations of the gross calorific value (GCV) of each fuel combusted.

(ii) You may determine site-specific carbon-based F-factors (F_c) using Equation F-7b in section 3.3.6 of Appendix F to part 75 of this chapter, and you may use these F_c values in the emissions calculations instead of using the default F_c values in the Equation G-4 nomenclature.

(4) You must install, calibrate, maintain, and operate a sufficient number of watt meters to continuously measure and record the gross or net electric output from the affected facility~~,~~. These measurements must be performed using 0.2 class electricity metering instrumentation and calibration procedures as specified under ANSI Standards No. C12.20.~~and~~ ~~y~~You must also meet the requirements specified in paragraphs (f)(4)(i) and (ii) of this section, as applicable.

(i) If your affected facility is a combined heat and power unit as defined in § 60.42Da, you must also install, calibrate, maintain, and operate meters to continuously determine and record the total useful ~~recovered~~ thermal ~~energy~~output. For process steam applications, you must install, calibrate, maintain, and operate meters to continuously determine and record steam flow rate, temperature, and pressure. If your affected facility has a direct mechanical drive application, you must submit a plan to the Administrator or delegated authority for approval of how gross or net energy output will be determined. Your plan shall ensure that you install, calibrate, maintain, and operate meters to continuously determine and record each component of the determination.

(ii) If two or more affected facilities have steam generating units that serve a common electric generator, you must apportion the combined hourly gross or net electric output to each individual affected facility using a plan approved by the Administrator (e.g., using steam load or heat input to each affected facility). Your plan shall ensure that you install, calibrate, maintain, and operate meters to continuously determine and record each component of the determination.

(g) You must demonstrate compliance with the CO_2 emissions limit~~ation~~ using the procedures specified in paragraphs (g)(1) and (2) of this section.

(1) You must calculate the CO_2 mass emissions rate for your affected facility using the calculation procedures in paragraphs (g)(1)(i) through (v) of this section with the hourly CO_2 mass emissions and gross or net energy output data determined and recorded according to the procedures in paragraph (f) of this section for each operating hour in the applicable compliance period (i.e., 12-operating months or 84-operating months).

(i) You must only use operating hours in the compliance period for which you have valid data for all the parameters you use to determine the hourly CO_2 mass emissions and gross or net output data. You must not use operating hours which use the substitute data provisions of part 75 of this chapter for any of the parameters in the calculation. For the compliance determination calculation, you must obtain valid hourly values for a minimum of 95 percent of the operating hours in the applicable compliance period.

(ii) You must calculate the total CO_2 mass emissions by summing all of the valid hourly CO_2 mass emissions values for the applicable compliance period. If exhaust gases from the affected facility are emitted to the atmosphere through multiple stacks or ducts, you must calculate the total CO_2 mass emissions for the affected facility by summing the total CO_2 mass emissions from each of the individual stacks or ducts.

(iii) For each operating hour of the compliance period used in paragraph (g)(1)(ii) of this section to calculate the total CO_2 mass emissions, you must determine the affected facility's corresponding hourly gross or net energy output using the appropriate definitions in § 60.42Da and paragraph (k) of this section and using the procedure specified in paragraphs (g)(3)(iii)(A) through (D) of this section.

(A) Calculate $P_{gross/net}$ for your affected facility using the following equation:

$$P_{gross/net} = \frac{(Pe)_{ST} + (Pe)_{CT} + (Pe)_{IE} - (Pe)_{FW}}{T} + 0.75 \times [\,(Pt)_{PS} + (Pt)_{HR} + (Pt)_{IE}\,]$$

Where: ~~a~~

$P_{gross/net}$ = Gross or net energy output of your affected facility in megawatt-hours ~~in~~ (MWh).

$(Pe)_{ST}$ = Electric energy output plus mechanical energy output (if any) of steam turbines in MWh.

$(Pe)_{CT}$ = Electric energy output plus mechanical energy output (if any) of stationary combustion turbine(s) in MWh.

$(Pe)_{IE}$ = Electric energy output plus mechanical energy output (if any) of your affected facility's integrated equipment that provides electricity or mechanical energy to the affected facility or auxiliary equipment in MWh.

$(Pe)_{FW}$ = Electric energy used to power boiler feedwater pumps at steam generating units in MWh. This term is not applicable to IGCC facilities or facilities complying with a net output based standard.

$(Pt)_{PS}$ = Useful thermal ~~energy~~ output of steam (measured relative to ~~ISO~~ SATP conditions, as applicable) that is used for applications that do not generate additional electricity, produce mechanical energy output, or enhance the performance of the affected facility. This term is calculated using the equation specified in paragraph (g)(3)(iii)(B) of this section in MWh.

$(Pt)_{HR}$ = ~~Hourly u~~Non steam useful thermal ~~energy~~ output (measured relative to ~~ISO~~ SATP conditions, as applicable) ~~from heat recovery~~ that is used for applications other than steam generation or performance enhancement of the affected facility in MWh.

$(Pt)_{IE}$ = Useful thermal ~~energy~~ output (relative to ~~ISO~~ SATP conditions, as applicable) from any integrated equipment that is used for applications that do not generate additional steam, electricity, produce mechanical energy output, or enhance the performance of the affected facility ~~provides thermal energy to the affected facility or auxiliary equipment~~ in MWh.

T = Electric Transmission and Distribution Factor.

T = 0.95 for a combined heat and power affected facility where at least on an annual basis 20.0 percent of the total gross or net energy output consists of electric or direct mechanical output and 20.0 percent of the total gross or net energy output consists of useful thermal ~~energy~~ output on a rolling 3 year basis.

T = 1.0 for all other affected facilities.

(B) If applicable to your affected facility, calculate $(Pt)_{PS}$ using the following equation:

$$(Pt)_{PS} = \frac{Q_m \times H}{3.6 \times 10^9}$$

Where:

Q_m = Measured steam flow in kilograms (kg) (or pounds (lb)) for the operating hour.

H = Enthalpy of the steam at (measured temperature and pressure relative to ~~ISO~~ SATP conditions, as applicable) in Joules per kilogram (J/kg) (or Btu/lb).

3.6×10^9 = Conversion factor (J/MWh) (or 3.413×10^6 Btu/MWh).

(C) For an operating hour in which there is no gross or net electric load, but there is mechanical or useful thermal output, you must still determine the gross or net energy output for that hour. In addition, for an operating hour in which there is no useful output, you must still determine the hourly ~~gross~~ CO_2 emissions for that hour. For hours or partial hours where there the gross generation equal to or less than the auxiliary loads, net electric output shall be counted as zero for this calculation.

(D) If hourly CO_2 mass emissions are determined for a common stack, you must determine the hourly gross or net energy output (electric, thermal, and/or mechanical, as applicable) by summing the hourly loads for the individual affected facility and you must express the operating time as "stack operating hours" (as defined in § 72.2 of this chapter).

(iv) You must calculate the total gross or net energy output by summing the hourly gross or net energy output values for the affected facility determined from paragraph (g)(1)(iii) of this section for all of the operating hours in the applicable compliance period.

(v) You must calculate the CO_2 mass emissions rate for the applicable compliance period interval by dividing the total CO_2 mass emissions value from paragraph (g)(1)(ii) of this section by the total gross or net energy output value from paragraph (g)(1)(iv) of this section.

(2) You must determine compliance with the CO_2 emissions limit~~ation~~ in paragraph (c) of this section is determined as specified in paragraphs (g)(2)(i) and (ii) of this section using the CO_2 mass emissions rate for your affected facility that you determined in paragraph (g)(1) of this section.

(i) If the CO_2 mass emissions rate for your affected facility is less than or equal to the CO_2 emissions limit~~ation~~ applicable to your affected facility, then your affected facility is in compliance with the CO_2 emissions limit~~ation~~. If you attain compliance with the CO_2 emissions limit~~ation~~ at a common stack for two or more affected facilities subject to the same CO_2 emissions limit~~ation~~, each affected facility sharing the stack is in compliance with the CO_2 emissions limit~~ation~~.

(ii) If the CO_2 mass emissions rate for the affected facility is greater than the CO_2 emissions limit~~ation~~ in paragraph (c) of this section applicable to the affected facility, then the affected facility has excess CO_2 emissions.

(h) You must prepare and submit notifications and reports according to paragraphs (h)(1) through (4) of this section.

(1) You must prepare and submit the notifications in §§ 60.7(a)(1) and (a)(3) and 60.19, as applicable to your affected facility.

(2) You must prepare and submit notifications in § 75.61 of this chapter, as applicable to your affected facility.

(3) You must submit electronic quarterly reports according to the requirements specified in paragraphs (h)(3)(i) through (iii) of this section.

(i) Initially, after you have accumulated the required number of operating months for the CO_2 emission limit~~ation~~ compliance period that you have chosen to comply with (i.e., 12-operating months or 84-operating months), you must submit a report for the calendar quarter that includes the final (12th- or 84th) operating month no later than 30 days after the end of that quarter. Thereafter, you must submit a report for each subsequent calendar quarter no later than 30 days after the end of the quarter.

(ii) In each quarterly report you must include the information in paragraphs (h)(3)(ii)(A) through (E) of this section.

(A) The CO_2 emission limit~~ation~~ compliance period with which you have chosen to comply.

(B) Any months in the calendar quarter that you are not counting as operating months.

(C) For each operating month in the calendar quarter, the corresponding average CO_2 mass emissions rate for the applicable compliance period interval that you determined according to paragraph (g) of this section.

(D) The percentage of valid CO_2 mass emission rates in each compliance period (i.e., the total number of valid CO_2 mass emission rates in that period divided by the total number of operating hours in that period, multiplied by 100 percent).

(E) Any operating months in the calendar quarter with excess CO_2 emissions.

(iii) In the final quarterly report of each calendar year you must include the following:

(A) Net electric output sold to an electric grid over the calendar year; and

(B) The potential electric output of the facility.

(iv) You must submit each electronic report using the Emissions Collection and Monitoring Plan System (ECMPS) Client Tool provided by the Clean Air Markets Division in the EPA Office of Atmospheric Programs.

(4) You must meet all applicable reporting requirements and submit reports as required under subpart G of part 75 of this chapter.

(5) If your affected unit uses geologic sequestration to meet the applicable emissions limit, you must report in accordance with the requirements of 40 CFR part 98, subpart PP and either:

(i) if injection occurs onsite, report in accordance with the requirements of 40 CFR part 98, subpart RR, or

(ii) if injection occurs offsite, transfer the captured CO_2 to a facility or facilities that reports in accordance with the requirements of 40 CFR part 98, subpart RR.

(i) For each affected electric utility stream generating unit, you must maintain records according to paragraphs (i)(1) through (i)(8) of this section.

(1) You must comply with the applicable recordkeeping requirements and maintain records as required under subpart F of part 75 of this chapter.

(2) You must maintain records of the calculations you performed to determine the total CO_2 mass emissions for each operating month, and the averages for each compliance period interval (i.e., 12-operating months or 84-operating months, as applicable to the CO_2 emissions limit~~ation~~s).

(3) You must maintain records of the applicable data recorded and calculations performed that you used to determine the gross <u>or net </u>energy output for each operating month.

(4) You must maintain records of the calculations you performed to determine the percentage of valid CO_2 mass emission rates in each compliance period.

(5) You must maintain records of the calculations you performed to assess compliance with each applicable CO_2 emissions limit~~ation~~ in paragraph (c) of this section.

(6) Your records must be in a form suitable and readily available for expeditious review.

(7) You must maintain each record for 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record except those records required to demonstrate compliance with an 84-operating month compliance period. You must maintain records required to demonstrate compliance with an 84-operating month compliance period for at least 10 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(8) You must maintain each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 60.7. You may maintain the records off site and electronically for the remaining year(s) as required by this subpart.

(j) <u>PSD and Title V Thresholds for Greenhouse Gases</u>. (1) For purposes of 40 CFR 51.166(b)(49)(ii), with respect to GHG emissions from new affected facilities, the "pollutant that is subject to the standard promulgated under section 111 of the Act" shall be considered to be the pollutant that otherwise is subject to regulation under the Act as defined in 40 CFR 51.166(b)(48) and in any SIP approved by the EPA that is interpreted to incorporate, or specifically incorporates, 40 CFR 51.166(b)(48).

(2) For purposes of 40 CFR 52.21(b)(50)(ii), with respect to GHG emissions from new affected facilities, the "pollutant that is subject to the standard promulgated under section 111 of the Act" shall be considered to be the pollutant that otherwise is subject to regulation under the Act as defined in 40 CFR 52.21(b)(49).

(3) For purposes of 40 CFR 70.2, with respect to greenhouse gas emissions from new affected facilities, the "pollutant that is subject to any standard promulgated under section 111 of the Act" shall be considered to be the pollutant that otherwise is "subject to regulation" as defined in 40 CFR 70.2.

(4) For purposes of 40 CFR 71.2, with respect to greenhouse gas emissions from new affected facilities, the "pollutant that is subject to any standard promulgated under

section 111 of the Act" shall be considered to be the pollutant that otherwise is "subject to regulation" as defined in 40 CFR 71.2.

(k) For purposes of this section, the following definitions apply:

Gross energy output means:

(i) Except as provided under paragraph (ii) of this definition, for electric utility steam generating units, the gross electric or mechanical output from the affected facility (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expanders) minus any electricity used to power the feedwater pumps plus 75 percent of the useful thermal output ~~measured relative to ISO conditions that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application)~~;

(ii) For electric utility steam generating unit combined heat and power facilities where at least 20.0 percent of the total gross energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross energy output consists of useful thermal output on a rolling 3 year basis, the gross electric or mechanical output from the affected facility (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expanders) minus any electricity used to power the feedwater pumps, that difference divided by 0.95, plus 75 percent of the useful thermal output ~~measured relative to ISO conditions that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application)~~;

(iii) Except as provided under paragraph (iv~~i~~) of this definition, for a IGCC electric utility generating unit, the gross electric or mechanical output from the affected facility (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expanders) plus 75 percent of the useful thermal output ~~measured relative to ISO conditions that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application)~~; or

(iv) For IGCC electric utility generating unit combined heat and power facilities where at least 20.0 percent of the total gross energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross energy output consists of useful thermal output on a rolling 3 year basis, the gross electric or mechanical output from the affected facility (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expanders) divided by 0.95, plus 75 percent of the useful thermal output ~~measured relative to ISO conditions that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application)~~.~~;~~

IGCC facility is an integrated gasification combined cycle electric utility steam generating unit, which means an electric utility combined cycle facility that is designed to burn fuels containing 50 percent (by heat input) or more solid-derived fuel not meeting the definition of natural gas plus any integrated equipment that provides electricity or useful thermal output to either the affected facility or auxiliary equipment. The Administrator may waive the 50 percent solid-derived fuel requirement during periods of the gasification system construction, startup and commissioning, shutdown, or repair. No solid fuel is directly burned in the facility during operation.

Net-electric sales~~output~~ means:

(i) Except as provided under paragraph (ii) of this definition, the gross electric sales to the utility power distribution system minus purchased power~~ on a calendar year basis~~, or

(ii) For combined heat and power facilities where at least 20.0 percent of the total gross or net energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross or net energy output consists of useful thermal output, the gross electric sales to the utility power distribution system minus purchased power of the thermal host facility or facilities~~ on a calendar year basis~~; and~~.~~

(iii) Electricity supplied to other facilities that produce electricity to offset auxiliary loads are included when calculating net-electric sales.

Net-electric output means: the amount of gross generation the generator(s) produces (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expander(s)), as measured at the generator terminals, less the electricity used to operate the plant (i.e., auxiliary loads); such uses include fuel handling equipment, pumps, fans, pollution control equipment, other electricity needs, and transformer losses as measured at the transmission side of the step up transformer (e.g., the point of sale).

Net energy output means:

(i) Except as provided under paragraph (ii) of this definition, the net electric or mechanical output from the affected facility plus 75 percent of the useful thermal output; or

(ii) For combined heat and power facilities where at least 20.0 percent of the total gross or net energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross or net energy output consists of useful thermal output on a rolling 3 year basis, the net electric or mechanical output from the affected facility divided by 0.95, plus 75 percent of the useful thermal output.

Potential electric output means:

(i) Either 33 percent or the design net electric output efficiency, at the election of the owner/operator of the affected facility,

(ii) Multiplied by the maximum design heat input capacity of the steam generating unit, (Btu/h)

(iii) Divided by 3,413 Btu/KWh,

(iv) Divided by 1,000 kWh/MWh, and

(v) Multiplied by 8,760 h/yr.

(vi) For example, a 35 percent efficient steam generating unit with a 100 MW (341 MMBtu/h) fossil-fuel heat input capacity would have a 310,000 MWh 12 month potential electric output capacity.

Standard ambient temperature and pressure (SATP) conditions means 298.15 Kelvin (25^{o} C, 77 ^{o}F)) and 100.0 kilopascals (14.504 psi, 0.987 atm) pressure. The enthalpy of water at SATP conditions is 50 Btu/lb.

Steam generating unit means any furnace, boiler, or other device used for combusting fuel for the purpose of producing steam (nuclear steam generators are not included) plus any integrated equipment that provides electricity or useful thermal output to either the boiler or auxiliary equipment.

Useful thermal output means the thermal energy made available for use in any heating application (e.g., steam delivered to an industrial process for a heating application, including thermal cooling applications) that is not used for electric generation, mechanical output at the affected facility, or to directly enhance the performance of the affected facility (e.g., economizer output is not useful thermal output, but thermal energy used to reduce fuel moisture is considered useful thermal output). Useful thermal output for affected facilities with no condensate return (or other thermal energy input to the affected facility) or where measuring the energy in the condensate (or other thermal energy input to the affected facility) would not meaningfully impact the emission rate calculation is measured against the energy in the thermal output at SATP conditions. Affected facilities with meaningful energy in the condensate return (or other thermal energy input to the affected facility) must measure the energy in the condensate and subtract that energy relative to SATP conditions from the measured thermal output.

Subpart KKKK -— Standards of Performance for Stationary Combustion Turbines

3. Section 60.4305 is amended by adding paragraph (c) to read as follows:

§ 60.4305 Does this subpart apply to my stationary combustion turbine?

* * * * *

(c) For purposes of regulation of greenhouse gases, the applicable provisions of this subpart affect your stationary combustion turbine if it serves a generator capable of selling greater than 25 MW to a utility power distribution system and commenced construction after January 8, 2014 or it commenced reconstruction or modification after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

4. Section 60.4315 is revised to read as follows:

§ 60.4315 What pollutants are regulated by this subpart?

(a) The pollutants regulated by this subpart are nitrogen oxides (NO_X), sulfur dioxide (SO_2), and greenhouse gases.

(b)(1) The greenhouse gases regulated by this subpart consist of carbon dioxide (CO_2).

(2) PSD and Title V Thresholds for Greenhouse Gases. (i) For purposes of 40 CFR 51.166(b)(49)(ii), with respect to GHG emissions from affected stationary combustion turbine, the "pollutant that is subject to the standard promulgated under section 111 of the Act" shall be considered to be the pollutant that otherwise is subject to regulation under the Act as defined in 40 CFR 51.166(b)(48) and in any SIP approved by the EPA that is interpreted to incorporate, or specifically incorporates, 40 CFR 51.166(b)(48).

(ii) For purposes of 40 CFR 52.21(b)(50)(ii), with respect to GHG emissions from affected stationary combustion turbines, the "pollutant that is subject to the standard promulgated under section 111 of the Act" shall be considered to be the pollutant that otherwise is subject to regulation under the Act as defined in 40 CFR 52.21(b)(49).

(iii) For purposes of 40 CFR 70.2, with respect to greenhouse gas emissions from affected stationary combustion turbines, the "pollutant that is subject to any standard promulgated under section 111 of the Act" shall be considered to be the pollutant that otherwise is "subject to regulation" as defined in 40 CFR 70.2.

(iv) For purposes of 40 CFR 71.2, with respect to greenhouse gas emissions from affected stationary combustion turbines, the "pollutant that is subject to any standard promulgated under section 111 of the Act" shall be considered to be the pollutant that otherwise is "subject to regulation" as defined in 40 CFR 71.2.

5. Section 60.4326 is added to read as follows:

§ 60.4326 What CO_2 emissions standard must I meet?

You must not discharge from your affected stationary combustion turbine into the atmosphere any gases that contain CO_2 in excess of the applicable CO_2 emissions standard specified in Table 2 of this subpart.

6. Section 60.4333 is amended by adding paragraph (c) to read as follows:

§ 60.4333 What are my general requirements for complying with this subpart?

* * * * *

(c) If you own or operate an affected stationary combustion turbine subject to a CO_2 emissions standard in §60.4326, you must make compliance determinations on a 12-operating month rolling average basis, and you must determine compliance monthly by calculating the average CO_2 emissions rate for the affected stationary combustion turbine at the end of each 12-operating month period.

7. Section 60.4373 is added under undesignated center heading “Monitoring” to read as follows:

§ 60.4373 How do I monitor and collect data to demonstrate compliance with my CO_2 emissions standard using a CO_2 CEMS?

(a) You must prepare a monitoring plan in accordance with the applicable provisions in § 75.53(g) and (h) of this chapter.

(b) You must measure the hourly CO_2 mass emissions from each affected stationary combustion turbine using the procedures in paragraphs (b)(1) through (5) of this section, except as provided in paragraph (c) of this section.

(1) You must install, certify, operate, maintain, and calibrate a CO_2 continuous emission monitoring system (CEMS) to directly measure and record CO_2 concentrations in the stationary combustion turbine exhaust gases emitted to the atmosphere and an exhaust gas flow rate monitoring system according to § 75.10(a)(3)(i) of this chapter. If you measure CO_2 concentration on a dry basis, you must also install, certify, operate, maintain, and calibrate a continuous moisture monitoring system, according to § 75.11(b) of this chapter.

(2) For each monitoring system that you use to determine the CO_2 mass emissions, you must meet the applicable certification and quality assurance procedures in § 75.20 of this chapter and Appendices B and D to part 75 of this chapter.

(3) You must use a laser device to measure the dimensions of each exhaust gas stack or duct at the flow monitor and the reference method sampling locations prior to the initial setup (characterization) of the flow monitor. For circular stacks, you must make measure of the diameter at three or more distinct locations and average the results. For rectangular stacks or ducts, you must measure each dimension (i.e., depth and width) at three or more distinct locations and average the results. If the flow rate monitor or reference method sampling site is relocated, you must repeat these measurements at the new location.

(4) You must use unadjusted exhaust gas volumetric flow rates only to determine the hourly CO_2 mass emissions from the affected stationary combustion turbine; you must not apply the bias adjustment factors described in section 7.6.5 of Appendix A to part 75 of this chapter to the exhaust gas flow rate data.

(5) If you chose to use Method 2 in Appendix A-1 to this part to perform the required relative accuracy test audits (RATAs) of the part 75 flow rate monitoring system, you must use a calibrated Type-S pitot tube or pitot tube assembly. You must not use the default Type-S pitot tube coefficient.

(c) As an alternative to complying with paragraph (b) of this section, you may determine the hourly CO_2 mass emissions by using Equation G-4 in Appendix G to part 75 of this chapter according to the requirements specified in paragraphs (c)(1) and (2) of this section.

(1) You must implement the applicable procedures in appendix D to part 75 of this chapter to determine hourly unit heat input rates (MMBtu/h), based on hourly measurements of fuel flow rate and periodic determinations of the gross calorific value (GCV) of each fuel combusted.

(2) You may determine site-specific carbon-based F-factors (F_c) using Equation F-7b in section 3.3.6 of Appendix F to part 75 of this chapter, and you may use these F_c values in the emissions calculations instead of using the default F_c values in the Equation G-4 nomenclature.

(d) You must install, calibrate, maintain, and operate a sufficient number of watt meters to continuously measure and record the gross electric output from the affected stationary combustion turbine. These measurements must be performed using 0.2 class electricity metering instrumentation and calibration procedures as specified under ANSI Standards No. C12.20. If the affected stationary combustion turbine is a CHP stationary combustion turbine, you must also install, calibrate, maintain, and operate meters to continuously determine and record the total useful ~~recovered~~ thermal ~~energy~~output. For process steam applications, you will need to install, calibrate, maintain, and operate meters to continuously determine and record steam flow rate, temperature, and pressure. If the affected stationary combustion turbine has a direct mechanical drive application, you must submit a plan to the Administrator or delegated authority for approval of how gross energy output will be determined. Your plan shall ensure that you install, calibrate, maintain, and operate meters to continuously determine and record each component of the determination.

(e) If two or more affected stationary combustion turbines serve a common electric generator, you must apportion the combined hourly gross output to the individual stationary combustion turbines using a plan approved by the Administrator (e.g., using steam load or heat input to each affected stationary combustion turbine). Your plan shall ensure that you install, calibrate, maintain, and operate meters to continuously determine and record each component of the determination.

(f) In accordance with § 60.13(g), if two or more stationary combustion turbines that implement the continuous emission monitoring provisions in paragraph (b) of this section share a common exhaust gas stack and are subject to the same emissions standard under § 60.4326, you may monitor the hourly CO_2 mass emissions at the common stack in lieu of monitoring each stationary combustion turbine separately. If you choose this option, the hourly gross load (electric, thermal, and/or mechanical, as applicable) must be the sum of the hourly loads for the individual stationary combustion turbines and you must express the operating time as “stack operating hours” (as defined in § 72.2 of this chapter). If you attain compliance with the applicable emissions standard in § 60.4326 at the common stack, each stationary combustion turbine sharing the stack is in compliance.

(g) In accordance with § 60.13(g), if the exhaust gases from a stationary combustion turbine that implements the continuous emission monitoring provisions in paragraph (b) of this section are emitted to the atmosphere through multiple stacks (or if the exhaust gases are routed to a common stack through multiple ducts and you chose to monitor in the ducts), you must monitor the hourly CO_2 mass emissions and the “stack operating time” (as defined in § 72.2 of this chapter) at each stack or duct separately. In this case, you determine compliance with the applicable emissions standard in § 60.4326 by summing the CO_2 mass emissions measured at the individual stacks or ducts and dividing by the total gross output for the unit.

8. Section 60.4374 is added under undesignated center heading “Monitoring” to read as follows:

§ 60.4374 How do I demonstrate compliance with my CO_2 emissions standard and determine excess emissions?

(a) You must calculate the CO_2 mass emissions rate for your affected stationary combustion turbine by using the hourly CO_2 mass emissions and total gross output data determined and recorded according to the procedures in § 60.4373 for the compliance period for the CO_2 emissions standard applicable to the affected stationary combustion turbine, and the calculation procedures in paragraphs (a)(1) through (a)(5) of this section.

(1) You must only use operating hours in the compliance period for the compliance determination calculation for which you obtained valid data for all parameters you used to determine the hourly CO_2 mass emissions and gross output data, are used for the compliance determination calculation. You must not include operating hours in which you used the substitute data provisions of part 75 of this chapter for any of the parameters in the calculation. For the compliance determination calculation, you must obtain valid hourly CO_2 mass emission values for a minimum of 95 percent of the operating hours in the compliance period.

(2) You must calculate the total CO_2 mass emissions by summing the hourly CO_2 mass emissions values for the affected stationary combustion turbine determined to be valid according to the conditions specified in paragraph (a)(1) of this section for all of the operating hours in the applicable compliance period.

(3) For each operating hour of the compliance period used in paragraph (a)(2) of this section to calculate the total CO_2 mass emissions, you must determine the affected stationary combustion turbine’s corresponding hourly gross output (P_{gross}) by applying the appropriate definitions in §§ 60.4420 and 60.4421 of this subpart and according to the procedures specified in paragraphs (a)(3)(i) and (iv) of this section .

(i) Calculate P_{gross} for your affected stationary combustion turbine using the following equation:

$$P_{gross} = \frac{(Pe)_{CT} + (Pe)_{ST} + (Pe)_{IE}}{\mathrm{T}} + 0.75 \times [\,(Pt)_{PS} + (Pt)_{HR} + (Pt)_{IE}\,]$$

Where:

P_{gross} = Gross energy output of your affected stationary combustion turbine in megawatt-hours ~~in~~ (MWh).

$(Pe)_{CT}$ = Electric energy output plus mechanical energy output (if any) of stationary combustion turbines in MWh.

$(Pe)_{ST}$ = Electric energy output plus mechanical energy output (if any) of steam turbines in MWh.

$(Pe)_{IE}$ = Electric energy output plus mechanical energy output (if any) of your affected stationary combustion turbine’s integrated equipment that provides electricity to the affected facility or auxiliary equipment in MWh.

$(Pt)_{PS}$ = Useful thermal ~~energy~~ output of steam (relative to ~~ISO~~SATP conditions, as applicable) that is used for applications that do not generate additional electricity, produce mechanical energy output, enhance the performance of the affected facility. This is ~~C~~calculated using the equation specified in paragraph (a)(3)(ii) of this section in MWh.

$(Pt)_{HR}$ = Useful thermal ~~energy~~ output (relative to ~~ISO~~ SATP conditions, as applicable) from heat recovery that is used for applications other than steam generation or performance enhancement of the affected facility in MWh.

$(Pt)_{IE}$ = Useful thermal ~~energy~~ output (relative to ~~ISO~~ SATP conditions, as applicable) from any integrated equipment that is used for applications that do not generate additional steam, electricity, produce mechanical energy output, or enhance the performance of the affected facility~~provides input to the affected facility or auxiliary equipment~~ in MWh.

T = Electric Transmission and Distribution Factor.

T = 0.95 for a CHP stationary combustion turbine where at least on an annual basis 20.0 percent of the total gross energy output consists of electric or direct mechanical output and 20.0 percent of the total gross energy output consists of useful thermal ~~energy~~ output on a rolling 3 year basis.

T = 1.0 for all other affected stationary combustion turbines.

(ii) If applicable to your affected stationary combustion turbine, calculate $(Pt)_{PS}$ using the following equation:

$$(Pt)_{PS} = \frac{Q_m \times H}{3.6 \times 10^9}$$

Where:

Q_m = Measured steam flow in kilograms (kg) (or pounds (lb)) for the operating hour.

H = Enthalpy of the steam at measured temperature and pressure (relative to ~~ISO~~ SATP conditions, as applicable) in Joules per kilogram (J/kg) (or Btu/lb).

3.6×10^9 = Conversion factor (J/MWh) (or 3.413×10^6 Btu/MWh).

(iii) You must determine the hourly gross energy output for each operating hour in which there is no electric output, but there is mechanical output or useful thermal output. In addition you must determine the hourly gross CO_2 emissions for each operating hour in which there is no useful output.

(iv) In the case for which compliance is demonstrated according to § 60.4373(f) for affected stationary combustion turbines that vent to a common stack, then you must calculate the hourly gross energy output (electric, mechanical, and/or thermal, as applicable) by summing the hourly gross energy output you determined for each of your individual affected stationary combustion turbines that vent to the common stack; and you must express the operating time as “stack operating hours” (as defined in § 72.2 of this chapter).

(4) You must calculate the total gross output for the affected stationary combustion turbine’s compliance period by summing the hourly gross output values for the affected stationary combustion turbine determined from paragraph (a)(2) of this section for all of the operating hours in the applicable compliance period.

(5) You must calculate the CO_2 mass emissions rate for the affected stationary combustion turbine by dividing the total CO_2 mass emissions value as calculated according to the requirements of paragraph (a)(2) of this section by the total gross output value as calculated according to the requirements of paragraph (a)(4) of this section.

(b) If the CO_2 mass emissions rate for the affected stationary combustion turbine determined according to the procedures specified in paragraph (a) of this section is less than or equal to the CO_2 emissions standard in Table 2 of this subpart applicable to the affected stationary combustion turbine, then your affected stationary combustion turbine is in compliance with the emissions standard. If the average CO_2 mass emissions rate is greater than the CO_2 emissions standard in Table 2 of this subpart applicable to the affected stationary combustion turbine, then your affected stationary combustion turbine has excess CO_2 emissions.

9. Section 60.4375 is amended by revising the section heading to read as follows:

§ 60.4375 What reports must I submit to comply with my NO_x and SO_2 emissions limits?

* * * * *

10. Section 60.4376 is added to read as follows:

§ 60.4376 What notifications and reports must I submit to comply with my CO_2 emissions standard?

(a)(1) You must prepare and submit the notifications specified in §§ 60.7(a)(1) and (a)(3) and 60.19, as applicable to your affected stationary combustion turbine.

(2) You must prepare and submit notifications specified in § 75.61 of this chapter, as applicable to your affected stationary combustion turbine.

(b) You must prepare and submit reports according to paragraphs (b)(1) through (d) of this section, as applicable.

(1) For stationary combustion turbines that are required, by § 60.4333(c), to conduct initial and on-going compliance determinations on a 12-operating month rolling average basis for the standard in § 60.4326, you must submit electronic quarterly reports as follows. After you have accumulated the first 12-operating months for the affected stationary combustion turbine, you must submit a report for the calendar quarter that includes the 12th-operating month no later than 30 days after the end of that quarter. Thereafter, you must submit a report for each subsequent calendar quarter, no later than 30 days after the end of the quarter.

(2) In each quarterly report, you must include the following information, as applicable:

(i) Each rolling average CO_2 mass emissions rate for which the last (12th) operating month in a 12-operating month compliance period falls within the calendar quarter. You must calculate each average CO_2 mass emissions rate according to the requirements of § 60.4374. You must report the dates (month and year) of the 1st and 12th-operating months in each compliance period for which you performed a CO_2 mass emissions rate calculation. If there are no compliance periods that end in the quarter, you must include a statement to that effect;

(ii) If one or more compliance periods end in the quarter, you must identify each operating month in the calendar quarter with excess CO_2 emissions;

(iii) The percentage of valid CO_2 mass emission rates (as defined in § 60.4374) in each 12-operating month compliance period described in paragraph (b)(2)(i) of this section (i.e., the total number of valid CO_2 mass emission rates in that period divided by the total number of operating hours in that period, multiplied by 100 percent); and

(iv) The CO_2 emissions standard (as identified in Table 2 of this subpart) with which your affected stationary combustion turbine is complying.

(3) The final quarterly report of each calendar year must contain the following:

(i) Net electric output sold to an electric grid over the 4 quarters of the calendar year; and

(ii) The potential electric output of the stationary combustion turbine.

(c) You must submit all electronic reports required under paragraph (b) of this section using the Emissions Collection and Monitoring Plan System (ECMPS) Client Tool provided by the Clean Air Markets Division in the Office of Atmospheric Programs of the EPA.

(d) You must meet all applicable reporting requirements and submit reports as required under subpart G of part 75 of this chapter.

11. Section 60.4391 is added to read as follows:

§ 60.4391 What records must I maintain to comply with my CO_2 emissions limits?

(a) You must maintain records of the information you used to demonstrate compliance with this subpart as specified in § 60.7(b) and (f).

(b) You must follow the applicable recordkeeping requirements and maintain records as required under subpart F of part 75 of this chapter.

(c) You must keep records of the calculations you performed to determine the total CO_2 mass emissions for:

(1) Each operating month (for all affected units);

(2) Each compliance period, including, as applicable, each 12-operating month compliance period.

(d) You must keep records of the applicable data recorded and calculations performed that you used to determine your affected stationary combustion turbine's gross output for each operating month.

(e) You must keep records of the calculations you performed to determine the percentage of valid CO_2 mass emission rates in each compliance period.

(f) You must keep records of the calculations you performed to assess compliance with each applicable CO_2 mass emissions standard in § 60.4326.

(g) You must keep records of the calculations you performed to determine any site-specific carbon-based F-factors you used in the emissions calculations (if applicable).

(h)(1) Your records must be in a form suitable and readily available for expeditious review.

(2) You must keep each record for 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record to demonstrate compliance with a 12-operating month emissions standard.

(3) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 60.7. You may keep the records off site and electronically for the remaining year(s) as required by this subpart.

12. Section 60.4395 is revised to read as follows:

§ 60.4395 When must I submit my reports?

All of your reports required under § 60.7(c) must be postmarked by the 30th day after the end of each 6-month period, except as specified in § 60.4376

13. Section 60.4421 is added to read as follows:

§ 60.4421 What definitions with respect to CO_2 emissions apply to this subpart?

As used in this subpart:

Base load rating means 100 percent of the manufacturer's design heat input capacity of the combustion turbine engine at ISO conditions using the higher heating value of the fuel (heat input from duct burners is not included).

Excess emissions means a specified averaging period over which either:

(1) The CO_2 emissions rate of your affected stationary combustion turbine exceeds the applicable emissions standard in Table 2 of this subpart or § 60.4330; or

(2) The recorded value of a particular monitored parameter is outside the acceptable range specified in the parameter monitoring plan for the affected unit.

Gross energy output means:

(1) The gross electric or direct mechanical output from both the combustion turbine engine and any associated steam turbine(s) or integrated equipment plus any useful thermal output measured relative to ~~ISO~~ SATP conditions (except for GHG calculations in § 60.4374 as only 75 percent credit is given) that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application).

(2) For a CHP stationary combustion turbine where at least 20.0 percent of the total gross energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross energy output consists of useful thermal output on a rolling 3-year basis, the sum of the gross electric or direct mechanical output from both the combustion turbine engine and any associated steam turbine(s) divided by 0.95 plus any useful thermal output measured relative to ~~ISO~~ SATP conditions (except for GHG calculations in § 60.4374 as only 75 percent credit is

given) that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application).

Net-electric sales~~output~~ means:

(1) The gross electric sales to the utility power distribution system minus purchased power~~ on a 3 calendar year rolling average basis~~; or

(2) For combined heat and power facilities where at least 20.0 percent of the total gross energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross energy output consists of useful thermal output on a 3 calendar year rolling average basis, the gross electric sales to the utility power distribution system minus purchased power of the thermal host facility or facilities~~ on a three calendar year rolling average basis~~;~~.~~ and

(3) Electricity supplied to other facilities that produce electricity to offset auxiliary loads are included when calculating net-electric sales.

Net-electric output means: the amount of gross generation a generator produces, as measured at the generator terminals, less the electricity used to operate the plant (i.e., auxiliary loads); such uses include fuel handling equipment, pumps, fans, pollution control equipment, other electricity needs, and transformer losses as measured at the transmission side of the step up transformer (e.g., the point of sale).

Net energy output means:

(i) Except as provided under paragraph (ii) of this definition, the net electric or mechanical output from both the combustion turbine engine and any associated steam turbine(s) or integrated equipment plus 75 percent of the useful thermal output; or

(ii) For combined heat and power facilities where at least 20.0 percent of the total gross energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross energy output consists of useful thermal output on a rolling 3 year basis, the net electric or mechanical output from both the combustion turbine engine and any associated steam turbine(s) or integrated equipment divided by 0.95, plus 75 percent of the useful thermal output.

Operating month means a calendar month during which any fuel is combusted in the affected stationary combustion turbine.

Potential electric output means 33 percent or the design electric output efficiency on a net output basis (at the election of the owner/operator of the affected facility) multiplied by the base load rating (expressed in MMBtu/h) of the stationary combustion turbine, multiplied by 10^6 Btu/MMBtu, divided by 3,413 Btu/KWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 h/yr (e.g., a 35 percent efficient stationary combustion turbine with a 100 MW (341 MMBtu/h) fossil-fuel heat input capacity would have a 310,000 MWh 12-month potential electric output capacity).

Standard ambient temperature and pressure (SATP) conditions means 298.15 Kelvin (25^o C, 77 ^{o}F)) and 100.0 kilopascals (14.504 psi, 0.987 atm) pressure. The enthalpy of water at SATP conditions is 50 Btu/lb.

Stationary combustion turbine means all equipment, including but not limited to the combustion turbine engine, the fuel, air, lubrication and exhaust gas systems, control systems, heat recovery system, steam turbine, fuel compressor, heater, and/or pump, post-combustion emission control technology, and any ancillary components and sub-components plus any integrated equipment that provides electricity or useful thermal output to the combustion turbine engine, heat recovery system or auxiliary equipment. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability.

Useful thermal output means the thermal energy made available for use in any heating application (e.g., steam delivered to an industrial process for a heating application, including thermal cooling applications) that is not used for electric generation, mechanical output at the affected facility, or to directly enhance the performance of the affected facility (e.g., economizer output is not useful thermal output, but thermal energy used to reduce fuel moisture is considered useful thermal output). Useful thermal output for affected facilities with no condensate return (or other thermal energy input to the affected facility) or where measuring the energy in the condensate (or other thermal energy input to the affected facility) would not meaningfully impact the emission rate calculation is measured against the energy in the thermal output at SATP conditions. Affected facilities with meaningful energy in the condensate return (or other thermal energy input to the affected facility) must measure the energy in the condensate and subtract that energy relative to SATP conditions from the measured thermal output.

14. Table 2 ~~to~~of Subpart KKKK of Part 60 is added to read as follows:

Table 2 ~~to~~of Subpart KKKK of Part 60 – Carbon Dioxide Emission Limits for Stationary Combustion Turbines

Note: all numerical values have a minimum of 2 significant figures

Affected Stationary Combustion Turbine	CO_2 Emission Standard
Stationary combustion turbine that has a design heat input to the turbine engine of greater than 250 MW (850 MMBtu/h), that combusts over 90% natural gas on a heat input basis on a 3 year rolling average basis, and ~~that supplies~~where net-electric sales consist of more than one-third of its potential electric output and more than 219,000 MWh ~~net-electric output to a utility distribution system~~ on a 3 year rolling average basis.	450 kilograms (kg) of CO_2 per megawatt-hour (MWh) of gross output (1,000 lb/MWh) on a 12-operating month rolling average
Stationary combustion turbine that has a design heat input to the turbine engine greater than 73 MW (250 MMBtu/h) and equal to or less than 250 MW (850 MMBtu/h), that combusts over 90% natural gas on a heat input basis on a 3 year rolling average basis, and where net-electric sales consist of ~~that supplies~~ more than one-third of its potential electric output and more than 219,000 MWh ~~net-electric output to a utility distribution system~~ on a 3 year rolling average basis..	500 kg of CO_2 per MWh of gross output (1,100 lb CO_2/MWh) on a 12-operating month rolling average
Stationary combustion turbine that either has a design heat input to the turbine engine of 73 MW (250 MMBtu/h) or less, that combusts 90% or less natural gas on a heat input basis on a 3 year rolling average basis, or where net-electric sales consist of~~that supplies~~ one-third or less of its potential electric output or 219,000 MWh or less ~~net-electric output to a utility distribution system~~ on a 3 year rolling average basis.	No emission standard

15. Table 3 ~~to~~of Subpart KKKK of Part 60 is added to read as follows:

Table 3 of~~to~~ Subpart KKKK of Part 60 – Applicability of Subpart A General Provisions to Stationary Combustion Turbine CO_2 Emissions Standards in Subpart KKKK

General Provisions citation	Subject of citation	Applies to subpart KKKK	Explanation
§ 60.1	Applicability	Yes	
§ 60.2	Definitions	Yes	
§ 60.3	Units and Abbreviations	Yes	
§ 60.4	Address	Yes	
§ 60.5	Determination of construction or modification	Yes	
§ 60.6	Review of plans	Yes	
§ 60.7	Notification and Recordkeeping	Yes	Only the requirements to submit the notification in § 60.7(a)(1) and (a)(3)
§ 60.8	Performance tests	No	
§ 60.9	Availability of Information	Yes	
§ 60.10	State authority	Yes	
§ 60.11	Compliance with standards and maintenance requirements	No	
§ 60.12	Circumvention	Yes	
§ 60.13	Monitoring requirements	Yes	
§ 60.14	Modification	No	
§ 60.15	Reconstruction	No	
§ 60.16	Priority list	No	
§ 60.17	Incorporations by reference	Yes	
§ 60.18	General control device requirements	No	
§ 60.19	General notification and reporting requirements	Yes	

16. Part 60 is amended by adding subpart TTTT to read as follows:

Subpart TTTT -- Standards of Performance for Greenhouse Gas Emissions for Electric ~~Utility~~ Generating Units

Sec.

Applicability

§ 60.5508 What is the purpose of this subpart?
§ 60.5509 Am I subject to this subpart?

Emission Standards

§ 60.5515 What greenhouse gases are regulated by this subpart?
§ 60.5520 What CO_2 emissions standard must I meet?

General Compliance Requirements

§ 60.5525 What are my general requirements for complying with this subpart?
~~§ 60.5530 Affirmative defense for violation of emission standards during malfunction~~

Monitoring and Compliance Determination Procedures

§ 60.5535 How do I monitor and collect data to demonstrate compliance?
§ 60.5540 How do I demonstrate compliance with my CO_2 emissions standard and determine excess emissions?

Notifications, Reports, and Records

§ 60.5550 What notifications must I submit and when?
§ 60.5555 What reports must I submit and when?
§ 60.5560 What records must I maintain?
§ 60.5565 In what form and how long must I keep my records?

Other Requirements and Information

§ 60.5570 What parts of the General Provisions apply to my affected facility?
§ 60.5575 Who implements and enforces this subpart?
§ 60.5580 What definitions apply to this subpart?

Applicability

§ 60.5508 What is the purpose of this subpart?

This subpart establishes emission standards and compliance schedules for the control of greenhouse gas (GHG) emissions from a steam generating unit, IGCC, or a stationary combustion turbine that commences construction after January 8, 2014 or commences modification or reconstruction after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

§ 60.5509 Am I subject to this subpart?

(a) Except as provided for in paragraph (b) of this section, the subpart applies to any steam generating unit, IGCC, or stationary combustion turbine serves a generator capable of selling greater than 25 MW to a utility power distribution system and that commences construction after January 8, 2014 or commences modification or reconstruction after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) You are not subject to the requirements of this subpart if your affected facility meets any one of the conditions specified in paragraphs (b)(1) through (b)(5) of this section.

(1) The proposed Wolverine EGU project described in Permit to Install No. 317-07 issued by the Michigan Department of Environmental Quality, Air Quality Division, effective June 29, 2011 (as revised July 12, 2011).

(2) The proposed Washington County EGU project described in Air Quality Permit No. 4911-303-0051-P-01-0 issued by the Georgia Department of Natural Resources, Environmental Protection Division, Air Protection Branch, effective April 8, 2010, provided that construction had not commenced for NSPS purposes as of January 8, 2014.

(3) The proposed Holcomb EGU project described in Air Emission Source Construction Permit 0550023 issued by the Kansas Department of Health and Environment, Division of Environment, effective December 16, 2010, provided that construction had not commenced for NSPS purposes as of January 8, 2014.

(4) Your affected facility is a municipal waste combustor unit that is subject to subpart Eb of this part.

(5) Your affected facility is a commercial or industrial solid waste incineration unit that is subject to subpart CCCC of this part.

Emission Standards

§ 60.5515 What greenhouse gases are regulated by this subpart?

(a) The greenhouse gas regulated by this subpart is carbon dioxide (CO_2).

(b) PSD and Title V Thresholds for Greenhouse Gases. (1) For purposes of 40 CFR 51.166(b)(49)(ii), with respect to GHG emissions from affected facilities, the “pollutant that is subject to the standard promulgated under section 111 of the Act” shall be considered to be the pollutant that otherwise is subject to regulation under the Act as defined in 40 CFR 51.166(b)(48) and in any SIP approved by the EPA that is interpreted to incorporate, or specifically incorporates, 40 CFR 51.166(b)(48).

(2) For purposes of 40 CFR 52.21(b)(50)(ii), with respect to GHG emissions from affected facilities, the “pollutant that is subject to the standard promulgated under section 111 of the Act” shall be considered to be the pollutant that otherwise is subject to regulation under the Act as defined in 40 CFR 52.21(b)(49).

(3) For purposes of 40 CFR 70.2, with respect to greenhouse gas emissions from affected facilities, the “pollutant that is subject to any standard promulgated under section 111 of the Act”

shall be considered to be the pollutant that otherwise is "subject to regulation" as defined in 40 CFR 70.2.

(4) For purposes of 40 CFR 71.2, with respect to greenhouse gas emissions from affected facilities, the "pollutant that is subject to any standard promulgated under section 111 of the Act" shall be considered to be the pollutant that otherwise is "subject to regulation" as defined in 40 CFR 71.2.

§ 60.5520 What CO_2 emissions standard must I meet?

(a) For each affected facility subject to this subpart, you must not discharge from the affected facility ~~stack into the atmosphere~~ any gases that contain CO_2 in excess of the applicable CO_2 emissions standard specified in Table 1 or Table 2 of this subpart, except for owners and operators of modified affected facilities complying with the standards specified in paragraph (b) of this section, as applicable to the affected facility.

(b) The owner or operator of a modified steam generating unit or IGCC facility complying with the requirements of this paragraph are not required to comply with the emission limit in Table 2 to this subpart.

(1) If the affected facility is not subject to an approved CAA section 111(d) plan (state or federal) at the time of the modification, the owner/operator may elect to comply with a site-specific 12-operating month rolling average CO_2 emission limit calculated as 2 percent lower than (i.e., 98 percent) the best demonstrated annual historical operating performance for the affected facility using historical CO_2 emissions data for the calendar years 2002 through the most recent full calendar year the affected facility was operating prior to the modification using either recorded net output emission rate data or gross electrical output and CO_2 emissions data as reported under part 75 of this chapter. If incomplete or no data has been submitted under part 75 of this chapter, the Administrator or delegated authority shall approve the use of alternate data sources. The equivalent net output-based standard shall be calculated from gross output-based data assuming a 7.5 percent auxiliary (i.e., parasitic) load (i.e., the best annual value is divided by 0.925); or

(2) If the affected facility is subject to an approved CAA section 111(d) plan (state or federal) at the time of the modification, a site-specific 12-operating month rolling average CO_2 emission limit determined by the CAA section 111(d) implementing authority based on the affected facility performing an energy assessment by an energy professional or engineer that have expertise in evaluating energy systems to identify applicable energy efficiency projects that you will implement at the affected facility to improve the affected facility's operating performance. You must maintain a copy of the most recent energy assessment report. The energy assessment must include at a minimum the elements in paragraphs (b)(2)(i) through (b)(2)(iii) of this section.

(i) A visual inspection of the facility to identify steam leaks or other sources of reduced efficiency,

(ii) A review of available engineering plans and facility operation and maintenance procedures and logs, and

(iii) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

General Compliance Requirements

§ 60.5525 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission standards in this subpart that apply to your affected facility at all times. However, you must make a compliance determination only at the end of the applicable operating month, as provided in paragraphs (a)(1) and (2) of this section.

(1) For each affected facility subject to a CO_2 emissions standard based on a 12-operating month rolling average, you must determine compliance monthly by calculating the average CO_2 emissions rate for the affected facility at the end of each 12-operating month period.

(2) For each affected facility subject to a CO_2 emissions standard based on an 84-operating month rolling average, you must determine compliance monthly by calculating the average CO_2 emissions rate for the affected facility at the end of each 84-operating month period.

(b) At all times you must operate and maintain each affected facility, including associated equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practice. The Administrator will determine if you are using consistent operation and maintenance procedures based on information available to the Administrator that may include, but is not limited to, fuel use records, monitoring results, review of operation and maintenance procedures and records, review of reports required by this subpart, and inspection of the facility.

(c) You must conduct an initial compliance determination for your affected facility for the applicable emissions standard in § 60.5520, according to the requirements in this subpart, within 30 days after the end of the initial compliance period for the CO_2 emissions standards applicable to your affected facility (i.e., 12-operating months or 84-operating months). The first operating month included in this compliance period is the month in which emissions reporting is required to begin under §75.64(a) of this chapter.

~~§ 60.5530 Affirmative defense for violation of emission standards during malfunction.~~

~~In response to an action to enforce the standards set forth in § 60.5520, you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at 40 CFR 60.2. Appropriate penalties may be assessed if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.~~

~~(a) Assertion of affirmative defense. To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:~~

~~(1) The violation:~~

~~(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and~~

~~(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices;~~

~~(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for;~~

~~(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance;~~

~~(2) Repairs were made as expeditiously as possible when the violation occurred;~~

~~(3) The frequency, amount and duration of the violation (including any bypass) were minimized to the maximum extent practicable;~~

~~(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;~~

~~(5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health;~~

~~(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices;~~

~~(7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs;~~

~~(8) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and~~

~~(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.~~

~~(b) Report. The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator to demonstrate, with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report is due after the initial occurrence of the exceedance of the standard in § 60.5520, and on the same quarterly reporting schedule as in § 60.5555 (which may be the end of any applicable averaging period). If such quarterly report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the following quarterly report required in § 60.5555(a).~~

Monitoring and Compliance Determination Procedures

§ 60.5535 How do I monitor and collect data to demonstrate compliance?

(a) You must prepare a monitoring plan in accordance with the applicable provisions in § 75.53(g) and (h) of this chapter.

(b) You must measure the hourly CO_2 mass emissions from each affected facility using the procedures in paragraphs (b)(1) through (5) of this section, except as provided in paragraph (c) of this section.

(1) You must install, certify, operate, maintain, and calibrate a CO_2 continuous emission monitoring system (CEMS) to directly measure and record CO_2 concentrations in the affected facility exhaust gases emitted to the atmosphere and an exhaust gas flow rate monitoring system according to § 75.10(a)(3)(i) of this chapter. If you measure CO_2 concentration on a dry basis, you must also install, certify, operate, maintain, and calibrate a continuous moisture monitoring system, according to § 75.11(b) of this chapter.

(2) For each monitoring system you use to determine the CO_2 mass emissions, you must meet the applicable certification and quality assurance procedures in § 75.20 of this chapter and Appendices B and D to part 75 of this chapter.

(3) You must use a laser device to measure the dimensions of each exhaust gas stack or duct at the flow monitor and the reference method sampling locations prior to the initial setup (characterization) of the flow monitor. For circular stacks, you must measure the diameter at three or more distinct locations and average the results. For rectangular stacks or ducts, you must measure each dimension (i.e., depth and width) at three or more distinct locations and average the results. If the flow rate monitor or reference method sampling site is relocated, you must repeat these measurements at the new location.

(4) You must use only unadjusted exhaust gas volumetric flow rates to determine the hourly CO_2 mass emissions from the affected facility; you must not apply the bias adjustment factors described in section 7.6.5 of Appendix A to part 75 of this chapter to the exhaust gas flow rate data.

(5) If you choose to use Method 2 in Appendix A-1 to this part to perform the required relative accuracy test audits (RATAs) of the part 75 flow rate monitoring system, you must use a calibrated Type-S pitot tube or pitot tube assembly. You must not use the default Type-S pitot tube coefficient.

(c) If your affected facility exclusively combusts liquid fuel and/or gaseous fuel as an alternative to complying with paragraph (b) of this section, you may determine the hourly CO_2 mass emissions by using Equation G-4 in Appendix G to part 75 of this chapter according to the requirements in paragraphs (c)(1) and (2) of this section.

(1) You must implement the applicable procedures in appendix D to part 75 of this chapter to determine hourly unit heat input rates (MMBtu/h), based on hourly measurements of fuel flow rate and periodic determinations of the gross calorific value (GCV) of each fuel combusted.

(2) You may determine site-specific carbon-based F-factors (F_c) using Equation F-7b in section 3.3.6 of appendix F to part 75 of this chapter, and you may use these F_c values in the emissions calculations instead of using the default F_c values in the Equation G-4 nomenclature.

(d) You must install, calibrate, maintain, and operate a sufficient number of watt meters to continuously measure and record the gross or net electric output from the affected facility. These measurements must be performed using 0.2 class electricity metering instrumentation and calibration procedures as specified under ANSI Standards No. C12.20. If the affected facility is a CHP facility, you must also install, calibrate, maintain, and operate meters to continuously determine and record the total useful ~~recovered~~ thermal ~~energy~~output. For process steam applications, you will need to install, calibrate, maintain, and operate meters to continuously determine and record steam flow rate, temperature, and pressure. If the affected facility has a direct mechanical drive application, you must submit a plan to the Administrator or delegated authority for approval of how gross or net energy output will be determined. Your plan shall ensure that you install, calibrate, maintain, and operate meters to continuously determine and record each component of the determination.

(e) If two or more affected facilities serve a common electric generator, you must apportion the combined hourly gross or net output to the individual affected facilities using a plan approved by the Administrator (e.g., using steam load or heat input to each affected EGU). Your plan shall ensure that you install, calibrate, maintain, and operate meters to continuously determine and record each component of the determination.

(f) In accordance with § 60.13(g), if two or more affected facilities that implement the continuous emission monitoring provisions in paragraph (b) of this section share a common exhaust gas stack and are subject to the same emissions standard under § 60.5520, you may monitor the hourly CO_2 mass emissions at the common stack in lieu of monitoring each EGU separately. If you choose this option, the hourly gross or net load (electric, thermal, and/or mechanical, as applicable) must be the sum of the hourly loads for the individual affected facility and you must express the operating time as "stack operating hours" (as defined in § 72.2 of this chapter). If you attain compliance with the applicable emissions standard in § 60.5520 at the common stack, each affected facility sharing the stack is in compliance.

(g) In accordance with § 60.13(g), if the exhaust gases from an affected facility that implements the continuous emission monitoring provisions in paragraph (b) of this section are emitted to the atmosphere through multiple stacks (or if the exhaust gases are routed to a common stack through multiple ducts and you elect to monitor in the ducts), you must monitor the hourly CO_2 mass emissions and the "stack operating time" (as defined in § 72.2 of this chapter) at each stack or duct separately. In this case, you must determine compliance with the applicable emissions standard in § 60.5520 by summing the CO_2 mass emissions measured at the individual stacks or ducts and dividing by the total gross or net output for the affected facility.

§60.5540 How do I demonstrate compliance with my CO_2 emissions standard and determine excess emissions?

(a) You must calculate the CO_2 mass emissions rate for your affected facility by using the hourly CO_2 mass emissions and total gross or net output data determined and recorded according to the procedures in § 60.5535 for each operating hour in the compliance period for the CO_2 emissions standard applicable to the affected facility (i.e., 12- or 84-operating month rolling average period), and the calculation procedures in paragraphs (a)(1) through (a)(5) of this section.

(1) You can only use operating hours in the compliance period for the compliance determination calculation if valid data are obtained for all parameters you used to determine the hourly CO_2 mass emissions and the gross or net output data are used for the compliance determination calculation. You must not include operating hours in which you used the substitute data provisions of part 75 of this chapter for any of those parameters in the calculation. For the compliance determination calculation, you must obtain valid hourly CO_2 mass emission values for a minimum of 95 percent of the operating hours in the compliance period for the CO_2 emissions standard applicable to the affected facility.

(2) You must calculate the total CO_2 mass emissions by summing the valid hourly CO_2 mass emissions values for all of the operating hours in the applicable compliance period.

(3) For each operating hour of the compliance period that you used in paragraph (a)(2) of this section to calculate the total CO_2 mass emissions, you must determine the affected facility's corresponding hourly gross or net output according to the procedures in paragraphs (a)(3)(i) and (ii) of this section, as appropriate for the type of affected facility. For an operating hour in which there is no gross or net electric load, but there is mechanical or useful thermal output, you must

still determine the gross or net output for that hour. In addition, for operating hours in which there is no useful output, you still need to determine the CO_2 emissions for that hour. For hours or partial hours where the gross generation is equal to or less than the auxiliary loads, net electric output shall be counted as zero for this calculation.

(i) Calculate $P_{gross/net}$ for your affected facility using the following equation:

$$P_{gross/net} = \frac{(Pe)_{ST} + (Pe)_{CT} + (Pe)_{IE} - (Pe)_{FW}}{T} + 0.75 \times [\,(Pt)_{PS} + (Pt)_{HR} + (Pt)_{IE}\,]$$

Where: a

$P_{gross/net}$ = Gross or net energy output of your affected facility in megawatt-hours ~~in~~ (MWh).

$(Pe)_{ST}$ = Electric energy output plus mechanical energy output (if any) of steam turbines in MWh.

$(Pe)_{CT}$ = Electric energy output plus mechanical energy output (if any) of stationary combustion turbine(s) in MWh.

$(Pe)_{IE}$ = Electric energy output plus mechanical energy output (if any) of your affected facility's integrated equipment that provides electricity or mechanical energy to the affected facility or auxiliary equipment in MWh.

$(Pe)_{FW}$ = Electric energy used to power boiler feedwater pumps at steam generating units in MWh. Not applicable to stationary combustion turbines, ~~or~~ IGCC facilities, or facilities complying with a net output based standard.

$(Pt)_{PS}$ = Useful thermal ~~energy~~ output of steam (measured relative to ~~ISO~~ SATP conditions, as applicable) that is used for applications that do not generate additional electricity, produce mechanical energy output, or enhance the performance of the affected facility. This is ~~C~~calculated using the equation specified in paragraph (g)(3)(iii)(B) of this section in MWh.

$(Pt)_{HR}$ = ~~Hourly~~ Non steam useful thermal ~~energy~~ output (measured relative to ~~ISO~~ SATP conditions, as applicable) from heat recovery that is used for applications other than steam generation or performance enhancement of the affected facility in MWh.

$(Pt)_{IE}$ = Useful thermal ~~energy~~ output (relative to ~~ISO~~ SATP conditions, as applicable) from any integrated equipment that is used for applications that do not generate additional steam, electricity, produce mechanical energy output, or enhance the performance of the affected facility~~provides thermal energy to the affected facility or auxiliary equipment~~ in MWh.

T = Electric Transmission and Distribution Factor.

T = 0.95 for a combined heat and power affected facility where at least on an annual basis 20.0 percent of the total gross or net energy output consists of electric or direct mechanical output and 20.0 percent of the total gross or net energy output consists of useful thermal ~~energy~~ output on a rolling 3 year basis.

T = 1.0 for all other affected facilities.

(ii) If applicable to your affected facility, you must calculate $(Pt)_{PS}$ using the following equation:

$$(Pt)_{PS} = \frac{Q_m \times H}{3.6 \times 10^9}$$

Where:

Q_m = Measured steam flow in kilograms (kg) (or pounds (lb)) for the operating hour.

H = Enthalpy of the steam at measured temperature and pressure (relative to ~~ISO~~ SATP conditions, as applicable) in Joules per kilogram (J/kg) (or Btu/lb).

3.6×10^9 = Conversion factor (J/MWh) (or 3.413×10^6 Btu/MWh).

(4) You must calculate the total gross or net output for the affected facility's compliance period by summing the hourly gross or net output values for the affected facility that you determined from paragraph (a)(2) of this section for all of the operating hours in the applicable compliance period.

(5) You must calculate the CO_2 mass emissions rate for the affected facility by dividing the total CO_2 mass emissions value calculated according to the procedures in paragraph (a)(2) of this section by the total gross or net output value calculated according to the procedures in paragraph (a)(4) of this section.

(b) If the CO_2 mass emissions rate for your affected facility that you determined according to the procedures specified in paragraph (a) of this section is less than or equal to the CO_2 emissions standard in Table 1 of this subpart applicable to the affected facility, then your affected facility is in compliance with the emissions standard. If the average CO_2 mass emissions rate is greater than the CO_2 emissions standard in Table 1 of this subpart applicable to the affected facility, then your affected facility has excess CO_2 emissions.

Notification, Reports, and Records

§ 60.5550 What notifications must I submit and when?

(a) You must prepare and submit the notifications specified in §§ 60.7(a)(1) and (a)(3) and 60.19, as applicable to your affected facility.

(b) You must prepare and submit notifications specified in § 75.61 of this chapter, as applicable to your affected facility.

§ 60.5555 What reports must I submit and when?

(a) You must prepare and submit reports according to paragraphs (a) through (d) of this section, as applicable.

(1) For affected facilities that are required by § 60.5525 to conduct initial and on-going compliance determinations on a 12- or 84-operating month rolling average basis for the standard

in § 60.5520 you must submit electronic quarterly reports as follows. After you have accumulated the first 12-operating months for the affected facility (or, the first 84-operating months for an affected facility electing to comply with the 84-operating month standard), you must submit a report for the calendar quarter that includes the twelfth (or eighty-fourth) operating month no later than 30 days after the end of that quarter. Thereafter, you must submit a report for each subsequent calendar quarter, no later than 30 days after the end of the quarter.

(2) In each quarterly report you must include the following information, as applicable:

(i) Each rolling average CO_2 mass emissions rate for which the last (12th or eighty-fourth) operating month in a 12- or 84-operating month compliance period falls within the calendar quarter. You must calculate each average CO_2 mass emissions rate according to the procedures in § 60.5540. You must report the dates (month and year) of the first and twelfth (or eighty-fourth) operating months in each compliance period for which you performed a CO_2 mass emissions rate calculation. If there are no compliance periods that end in the quarter, you must include a statement to that effect;

(ii) If one or more compliance periods end in the quarter you must identify each operating month in the calendar quarter with excess CO_2 emissions;

(iii) The percentage of valid CO_2 mass emission rates (as defined in § 60.5540) in each 12- or 84-operating month compliance period described in paragraph (a)(1)(i) of this section (i.e., the total number of valid CO_2 mass emission rates in that period divided by the total number of operating hours in that period, multiplied by 100 percent); and

(iv) The CO_2 emissions standard (as identified in Table 1 of this subpart) with which your affected facility is complying.

(3) In the final quarterly report of each calendar year, you must include the following:

(i) Gross electric output sold to an electric grid over the 4 quarters of the calendar year; and

(ii) The potential electric output of the facility.

(b) You must submit all electronic reports required under paragraph (a) of this section using the Emissions Collection and Monitoring Plan System (ECMPS) Client Tool provided by the Clean Air Markets Division in the Office of Atmospheric Programs of EPA.

(c) You must meet all applicable reporting requirements and submit reports as required under subpart G of part 75 of this chapter.

(d) If your affected unit employs geologic sequestration to meet the applicable emission limit, you must report in accordance with the requirements of 40 CFR part 98, subpart PP and either:

(1) if injection occurs onsite, report in accordance with the requirements of 40 CFR part 98, subpart RR, or

(2) if injection occurs offsite, transfer the captured CO_2 to a facility or facilities that reports in accordance with the requirements of 40 CFR part 98, subpart RR.

§ 60.5560 What records must I maintain?

(a) You must maintain records of the information you used to demonstrate compliance with this subpart as specified in § 60.7(b) and (f).

(b) You must follow the applicable recordkeeping requirements and maintain records as required under subpart F of part 75 of this chapter.

(c) You must keep records of the calculations you performed to determine the total CO_2 mass emissions for:

(1) Each operating month (for all affected units);

(2) Each compliance period, including, as applicable, each 12-operating month compliance period and the 84-operating month compliance period.

(d) You must keep records of the applicable data recorded and calculations performed that you used to determine your affected facility's gross or net output for each operating month.

(e) You must keep records of the calculations you performed to determine the percentage of valid CO_2 mass emission rates in each compliance period.

(f) You must keep records of the calculations you performed to assess compliance with each applicable CO_2 mass emissions standard in § 60.5520.

(g) You must keep records of the calculations you performed to determine any site-specific carbon-based F-factors you used in the emissions calculations (if applicable).

§ 60.5565 In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review.

(b) You must maintain each record for 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record except those records required to demonstrate compliance with an 84-operating month compliance period. You must maintain records required to demonstrate compliance with an 84-operating month compliance period for at least 10 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must maintain each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 60.7. You may maintain the records off site and electronically for the remaining year(s) as required by this subpart.

Other Requirements and Information

§ 60.5570 What parts of the General Provisions apply to my affected facility?

Notwithstanding any other provision of this chapter, certain parts of the General Provisions in §§ 60.1 through 60.19, listed in Table 2 of this subpart, do not apply to your affected facility.

§ 60.5575 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by the EPA, or a delegated authority such as your state, local, or tribal agency. If the Administrator has delegated authority to your state, local, or tribal agency, then that agency (as well as the EPA) has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if this subpart is delegated to your state, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency, the Administrator retains the authorities listed in paragraphs (b)(1) through (5) of this section and does not transfer them to the state, local, or tribal agency. In addition, the EPA retains oversight of this subpart and can take enforcement actions, as appropriate.

(1) Approval of alternatives to the emission standards.

(2) Approval of major alternatives to test methods.

(3) Approval of major alternatives to monitoring.

(4) Approval of major alternatives to recordkeeping and reporting.

(5) Performance test and data reduction waivers under § 60.8(b).

§ 60.5580 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein will have the meaning given them in the Clean Air Act and in subpart A (General Provisions of this part).

~~Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.~~

Base load rating means the maximum amount of heat input (fuel) that a steam generating unit can combust on a steady state basis, as determined by the physical design and characteristics of the steam generating unit at ISO conditions. For a stationary combustion turbine, base load rating means 100 percent of the design heat input capacity of the simple cycle portion of the stationary combustion turbine (i.e., the combustion turbine engine) at ISO conditions (heat input from duct burners is not included).

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17), coal refuse, and petroleum coke. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal (not meeting the definition of natural gas), coal-oil mixtures, and coal-water mixtures are included in this definition for the purposes of this subpart.

Coal refuse means waste products of coal mining, physical coal cleaning, and coal preparation operations (*e.g.* culm, gob, etc.) containing coal, matrix material, clay, and other organic and inorganic material.

Combined cycle facility means an electric generating unit that uses a stationary combustion turbine from which the heat from the turbine exhaust gases is recovered by a heat recovery steam generating unit to generate additional electricity.

Combined heat and power facility or CHP facility, *(*also known as “cogeneration”) means an electric generating unit that that use a steam-generating unit or stationary combustion turbine to simultaneously produce both electric (or mechanical) and useful thermal ~~energy~~ output from the same primary energy source.

Distillate oil means fuel oils that contain no more than 0.05 weight percent nitrogen and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17); diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 60.17); kerosene, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see § 60.17); biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see § 60.17); or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see § 60.17).

Excess emissions means a specified averaging period over which the CO_2 emissions rate is higher than the applicable emissions standard located in Table 1 of this subpart.

Fossil fuel means natural gas, petroleum, coal, and any form of solid, liquid, or gaseous fuel derived from such material for the purpose of creating useful heat.

Gaseous fuel means any fuel that is present as a gas at ISO conditions and includes, but is not limited to, natural gas, refinery fuel gas, process gas, coke-oven gas, synthetic gas, and gasified coal.

Gross energy output means:

(1) For stationary combustion turbines and IGCC facilities, the gross electric or direct mechanical output from both the unit (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expander(s)) plus 75 percent of the useful thermal output ~~measured relative to ISO conditions that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application)~~.

(2) For electric utility steam generating units, the gross electric or mechanical output from the affected facility (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expander(s)) minus any electricity used to power the feedwater pumps plus 75 percent of the useful thermal output ~~measured relative to ISO conditions that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application)~~;

(3) For combined heat and power facilities where at least 20.0 percent of the total gross energy output consists of electric or direct mechanical output and 20.0 percent of the total gross energy output consists of useful thermal output on a rolling 3 year basis, the gross electric or mechanical output from the affected facility (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expander(s)) minus any electricity used to power the feedwater pumps (the electric auxiliary load of boiler feedwater pumps is not applicable to IGCC facilities), that difference divided by 0.95, plus 75 percent of the useful thermal output ~~measured relative to ISO conditions that is not used to generate additional electric or mechanical output or to enhance the performance of the unit (e.g., steam delivered to an industrial process for a heating application)~~.

Heat recovery steam generating unit (HRSG) means a unit in which hot exhaust gases from the combustion turbine engine are routed in order to extract heat from the gases and generate useful output. Heat recovery steam generating units can be used with or without duct burners.

Integrated gasification combined cycle facility or IGCC facility means a combined cycle facility that has a design heat input greater than 73 MW (250MMBtu/h) heat input of fossil fuel (either alone or in combination with any other fuel), ~~supplies~~ was constructed for the purpose of supplying one-third or more of its potential electric output and more than 219,000 MWh for net-electric sales ~~net-electric output to a utility distribution system~~ on an annual basis, and is designed to burn fuels containing 50 percent (by heat input) or more solid-derived fuel not meeting the definition of natural gas plus any integrated equipment that provides electricity or useful thermal output to either the affected facility or auxiliary equipment. The Administrator may waive the 50 percent solid-derived fuel requirement during periods of the gasification system construction, startup and commissioning, shutdown, or repair. No solid fuel is directly burned in the unit during operation.

ISO conditions means 288 Kelvin (15^{o} C), 60 percent relative humidity and 101.3 kilopascals pressure.

Liquid fuel means any fuel that is present as a liquid at ISO conditions and includes, but is not limited to, distillate oil and residual oil.

Mechanical output means the useful mechanical energy that is not used to operate the affected facility, generate electricity and/or thermal energy, or to enhance the performance of the affected facility. Mechanical energy measured in horsepower hour should be converted into MWh by multiplying it by 745.7 then dividing by 1,000,000.

Natural gas means a fluid mixture of hydrocarbons (e.g., methane, ethane, or propane), composed of at least 70 percent methane by volume or that has a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot), that maintains a gaseous state under ISO conditions. In addition, natural gas contains 20.0 grains or less of total sulfur per 100 standard cubic feet. Finally, natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

Net-electric ~~output~~ sales means:

(1) The gross electric sales to the utility power distribution system minus purchased power ~~on a three calendar year rolling average basis~~; or

(2) For combined heat and power facilities where at least 20.0 percent of the total gross energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross energy output consists of useful thermal output ~~on a 3 calendar year rolling average basis~~, the gross electric sales to the utility power distribution system minus purchased power of the thermal host facility or facilities ~~on a three calendar year rolling average basis~~; and~~.~~

(3) Electricity supplied to other facilities that produce electricity to offset auxiliary loads are included when calculating net-electric sales.

Net-electric output means: the amount of gross generation the generator(s) produces (including, but not limited to, output from steam turbine(s), combustion turbine(s), and gas expander(s)), as measured at the generator terminals, less the electricity used to operate the plant (i.e., auxiliary loads); such uses include fuel handling equipment, pumps, fans, pollution control equipment, other electricity needs, and transformer losses as measured at the transmission side of the step up transformer (e.g., the point of sale).

Net energy output means:

(i) Except as provided under paragraph (ii) of this definition, the net electric or mechanical output from the affected facility plus 75 percent of the useful thermal output; or

(ii) For combined heat and power facilities where at least 20.0 percent of the total gross or net energy output consists of electric or direct mechanical output and at least 20.0 percent of the total gross or net energy output consists of useful thermal output on a rolling 3 year basis, the net electric or mechanical output from the affected facility divided by 0.95, plus 75 percent of the useful thermal output;

~~Oil means crude oil or petroleum or a fuel derived from crude oil or petroleum, including distillate and residual oil, and gases derived from solid oil-derived fuels (not meeting the definition of natural gas).~~

Operating month means a calendar month during which any fuel is combusted in the affected facility at any time.

Petroleum means crude oil or a fuel derived from crude oil, including, but not limited to, distillate and residual oil.

Potential electric output means 33 percent or the design electric output efficiency on a net output basis multiplied by the maximum design heat input capacity (expressed in MMBtu/h) of the steam generating unit, multiplied by 10^6 Btu/MMBtu, divided by 3,413 Btu/KWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 h/yr (e.g., a 35 percent efficient affected facility with a 100 MW (341 MMBtu/h) fossil-fuel heat input capacity would have a 310,000 MWh 12 month potential electric output capacity).

Solid fuel means any fuel that has a definite shape and volume, has no tendency to flow or disperse under moderate stress, and is not liquid or gaseous at ISO conditions. This includes, but is not limited to, coal, biomass, and pulverized solid fuels.

Standard ambient temperature and pressure (SATP) conditions means 298.15 Kelvin (25^{o} C, 77 ^{o}F)) and 100.0 kilopascals (14.504 psi, 0.987 atm) pressure. The enthalpy of water at SATP conditions is 50 Btu/lb.

Stationary combustion turbine means all equipment, including but not limited to the turbine engine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), heat recovery system, fuel compressor, heater, and/or pump, post-combustion emission control technology, and any ancillary components and sub-components comprising any simple cycle stationary combustion turbine, any combined cycle combustion turbine, and any combined heat and power combustion turbine based system plus any integrated equipment that provides electricity or useful thermal output to the combustion turbine engine, heat recovery system or auxiliary equipment. Stationary means that the combustion turbine is not self propelled or intended to be propelled while performing its function. It may, however, be mounted on a vehicle for portability. If a stationary combustion turbine burns any solid fuel directly it is considered a steam generating unit.

Steam generating unit means any furnace, boiler, or other device used for combusting fuel and producing steam (nuclear steam generators are not included) that has a design heat input greater than 73 MW (250MMBtu/h) heat input of fossil fuel (either alone or in combination with any other fuel) and that ~~supplies~~was constructed for the purpose of supplying one-third or more of its potential electric output and more than 219,000 MWh as net-electric sales~~net-electric output to a utility distribution system on~~ an annual basis plus any integrated equipment that provides electricity or useful thermal output to the affected facility or auxiliary equipment.

Useful thermal output means the thermal energy made available for use in any ~~industrial or commercial process, or used in any~~ heating ~~or cooling~~ application~~,~~ (e.g., steam delivered to an industrial process for a heating application, including thermal cooling applications) ~~i.e., total thermal energy made available for processes and applications other than~~that is not used for electric generation, mechanical output at the affected facility, or to directly enhance the performance of the affected facility (e.g., economizer output is not useful thermal output, but thermal energy used to reduce fuel moisture is considered useful thermal output). Useful ~~T~~thermal output for affected facilities with no condensate return (or other thermal energy input to the affected facility) or where measuring the energy in the condensate (or other thermal energy input to the affected facility) would not meaningfully impact the emission rate calculation is measured against the energy in the thermal output at SATP conditions. Affected facilities with meaningful energy in the condensate return (or other thermal energy input to the affected facility) must measure the energy in the condensate and subtract that energy relative to SATP conditions from the measured thermal output. ~~this subpart means the energy in recovered thermal output measured against the energy in the thermal output at ISO conditions~~.

Table 1 of~~to~~ Subpart TTTT of Part 60 – CO_2 Emission Standards for Affected Facilities that Commenced Construction after January 8, 2014

Note: all numerical values have a minimum of 2 significant figures

Affected Facility	**CO_2 Emission Standard**
Stationary combustion turbine that has a base load rating heat input to the turbine engine of greater than 250 MW (850 MMBtu/h), that combusts over 90% natural gas on a heat input basis on a 3 year rolling average basis, and ~~that supplies~~where net-electric sales consist of more than one-third of its potential electric output and more than 219,000 MWh ~~net-electric output to a utility distribution system~~ on a 3 year rolling average basis.	450 kilograms (kg) of CO_2 per megawatt-hour (MWh) of gross output (1,000 lb/MWh) on a 12-operating month rolling average
Stationary combustion turbine that has a design heat input to the turbine engine greater than 73 MW (250 MMBtu/h) and equal to or less than 250 MW (850 MMBtu/h), that combusts over 90% natural gas on a heat input basis on a 3 year rolling average basis, and where net-electric sales consist of ~~that supplies~~ more than one-third of its potential electric output and more than 219,000 MWh ~~net-electric output to a utility distribution system~~ on a 3 year rolling average basis.	500 kg of CO_2 per MWh of gross output (1,100 lb CO_2/MWh) on a 12-operating month rolling average
Stationary combustion turbine that either has a design heat input to the turbine engine of 73 MW (250 MMBtu/h) or less, that combusts 90% or less natural gas on a heat input basis on a 3 year rolling average basis, or where net-electric sales consist of one-third or less of its potential electric output or 219,000 MWh or less on a 3 year rolling average basis.	No emission standard
Steam generating unit that burns fossil fuel for more than 10.0 percent of the ~~average annual~~ heat input during a 3 year rolling average basis.	500 kg of CO_2 per MWh of gross energy output (1,100 lb CO_2/MWh) on a 12-operating month rolling average basis; or 480 kg of CO_2 per MWh of gross energy output (1,050 lb CO_2/MWh) on an 84-operating month rolling average basis.
Integrated gasification combined cycle (IGCC) facility that burns fossil fuel for more than 10.0 percent of the ~~average annual~~ heat input during a 3 year rolling average basis.	500 kg of CO_2 per MWh of gross energy output (1,100 lb CO_2/MWh) on a 12-operating month rolling average basis; or

	480 kg of CO_2 per MWh of gross energy output (1,050 lb CO_2/MWh) on an 84-operating month rolling average basis.
~~Stationary combustion turbine that either has a design heat input to the turbine engine of 73 MW (250 MMBtu/h) or less, that combusts 90% or less natural gas on a heat input basis on a 3 year rolling average basis, or that supplies one-third or less of its potential electric output or 219,000 MWh or less net-electric output to a utility distribution system on a 3 year rolling average basis.~~	~~No emission standard~~
Steam generating unit or IGCC facility that burns fossil fuel for 10.0 percent or less of the ~~average annual~~ heat input during a 3 year rolling average basis.	No emission standard

Table 2 of Subpart TTTT of Part 60 – CO_2 Emission Standards for Affected Facilities (as applicable)[1] that Commenced Reconstruction or Modification after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]

Note: all numerical values have a minimum of 2 significant figures

Affected Facility	CO_2 Emission Standard
Stationary combustion turbine that has a design heat input to the turbine engine greater than 73 MW (250 MMBtu/h) and equal to or less than 250 MW (850 MMBtu/h), that combusts over 90% natural gas on a heat input basis on a 3 year rolling average basis, and where net-electric sales consist of more than one-third of its potential electric output and more than 219,000 MWh on a 3 year rolling average basis.	510 kg of CO_2 per MWh of gross output (1,100 lb CO_2/MWh) on a 12-operating month rolling average
Stationary combustion turbine that has a base load rating heat input to the turbine engine of greater than 250 MW (850 MMBtu/h), that combusts over 90% natural gas on a heat input basis on a 3 year rolling average basis, and where net-electric sales consist of more than one-third of its potential electric output and more than 219,000 MWh on a 3 year rolling average basis.	460 kilograms (kg) of CO_2 per megawatt-hour (MWh) of gross output (1,000 lb/MWh) on a 12-operating month rolling average
Stationary combustion turbine that either has a design heat input to the turbine engine of 73 MW (250 MMBtu/h) or less, that combusts 90% or less natural gas on a heat input basis on a 3 year rolling average basis, or where net-electric sales consist of one-third or less of its potential electric output or 219,000 MWh or less on a 3 year rolling average basis.	No emission standard
Steam generating unit or integrated gasification combined cycle (IGCC) facility that has a design heat input of 590 MW (2,000 MMBtu/h) or less and that burns fossil fuel for more than 10.0 percent of the heat input during a 3 year rolling average basis.	950 kg of CO_2 per MWh of net energy output (2,100 lb CO_2/MWh) on a 12-operating month rolling average basis;

[1] The emission standards in Table 2 are not applicable to modified steam generating units and IGCC facilities subject to an approved CAA section 111(d) plan at the time of the modification or modified steam generating units and IGCC facilities not subject to an approved CAA section 111(d) plan at the time of the modification that elect to comply with an emission standard based on historical operating data.

Steam generating unit or IGCC facility that has a design heat input greater than 590 MW (2,000 MMBtu/h) and that burns fossil fuel for more than 10.0 percent of the heat input during a 3 year rolling average basis.	860 kg of CO_2 per MWh of net energy output (1,900 lb CO_2/MWh) on a 12-operating month rolling average basis;
Steam generating unit or IGCC facility that burns fossil fuel for 10.0 percent or less of the heat input during a 3 year rolling average basis.	No emission standard

Table ~~2~~3 ~~to~~of Subpart TTTT of Part 60 – Applicability of Subpart A General Provisions to Subpart TTTT

General Provisions citation	Subject of citation	Applies to subpart TTTT	Explanation
§ 60.1	Applicability	Yes	
§ 60.2	Definitions	Yes	Additional terms defined in § 60.5580
§ 60.3	Units and Abbreviations	Yes	
§ 60.4	Address	Yes	
§ 60.5	Determination of construction or modification	Yes	
§ 60.6	Review of plans	Yes	
§ 60.7	Notification and Recordkeeping	Yes	Only the requirements to submit the notification in § 60.7(a)(1) and (a)(3)
§ 60.8	Performance tests	No	
§ 60.9	Availability of Information	Yes	
§ 60.10	State authority	Yes	
§ 60.11	Compliance with standards and maintenance requirements	No	
§ 60.12	Circumvention	Yes	
§ 60.13	Monitoring requirements	Yes	
§ 60.14	Modification	No	
§ 60.15	Reconstruction	No	
§ 60.16	Priority list	No	
§ 60.17	Incorporations by reference	Yes	
§ 60.18	General control device requirements	No	
§ 60.19	General notification and reporting requirements	Yes	