

**BAY AREA AIR QUALITY MANAGEMENT DISTRICT**

**RESOLUTION NO. 2013-10**

**A Resolution of the Board of Directors of the  
Bay Area Air Quality Management District  
Amending District Regulation 9, Rule 10: Nitrogen Oxides and  
Carbon Monoxide from Boilers, Steam Generators and  
Process Heaters in Petroleum Refineries  
and Adopting a CEQA Negative Declaration for the Project**

WHEREAS, a public hearing has been properly noticed in accordance with the provisions of Health & Safety Code Section 40725;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that a need exists to adopt proposed amendments to Regulation 9, Rule 10: Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries ("Proposed Amendments") in order to: (1) add an alternative compliance plan ("ACP") option whereby any Bay Area refinery may comply with a mass emissions limit in lieu of the current 0.033 lb NO<sub>x</sub>/MM BTU emission rate limit in Regulation 9, Rule 10 for NO<sub>x</sub> from refinery boilers, steam generators and process heaters, not including CO boilers, that were operating prior to January 5, 1994 ("pre-1994 heaters"); (2) require at least 95% of the NO<sub>x</sub> emissions at pre-1994 heaters at each refinery to be monitored with continuous emissions monitoring systems ("CEMS"); and (3) require each refinery to report on current burners and future burner changes.

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District obtains its authority to adopt, amend or repeal rules and regulations from Sections 40000, 40001, 40702, and 40725 through 40728.5, of the California Health & Safety Code;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that the Proposed Amendments are written and displayed so that their meaning can be easily understood by the persons directly affected by the rule;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that the Proposed Amendments are in harmony with and not in conflict with or contradictory to, existing statutes, court decisions, or state or federal regulations and that proposed amended Regulation 9, Rule 10 does not duplicate any comparable federal or District standard for NO<sub>x</sub> emissions from boilers, steam generators and process heaters in petroleum refineries;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District has determined that Regulation 9, Rule 10, as proposed to be amended, does not impose the same requirements as any existing state or federal regulation and is necessary and proper to execute the power and duties granted to, and imposed upon the District;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District, by adopting the Proposed Amendments, is implementing, interpreting or making specific the provisions of Health & Safety Code § 40001 (rules to achieve and maintain ambient air quality standards), and § 40702 (rulemaking actions that are necessary and proper to execute the powers and duties granted to it);

WHEREAS, Regulation 9, Rule 10 was amended in 2010 to, among other things, add new emission limits for CO boilers;

WHEREAS, during the rulemaking process that resulted in the 2010 amendments to Regulation 9-10, a Bay Area refinery requested the development of a voluntary NOx standard as an alternative to the 0.033 lb NOx/MM BTU emission rate limit in Regulation 9-10 to remove what the refinery characterized as a “disincentive” to pre-1994 heater modernization under certain circumstances;

WHEREAS, at the public hearing on December 15, 2010 on the 2010 amendments to Regulation 9-10, the District Board directed staff to further consider an alternative NOx standard for pre-1994 heaters in response to the refinery’s concerns;

WHEREAS, the ACP provisions in the Proposed Amendments are designed to provide a voluntary, alternative compliance option for refineries with respect to NOx emissions from pre-1994 heaters and remove a perceived disincentive to pre-1994 heater modernization under certain circumstances, while ensuring that emission reductions equivalent to those that would have been required under current Regulation 9-10 will occur for any foreseeable project at any ACP refinery;

WHEREAS, the CEMS provisions in the Proposed Amendments are designed to equalize CEMS coverage across the refineries and improve enforceability of the rule;

WHEREAS, the reporting provisions in the Proposed Amendments are designed to provide staff with burner data that may be used to evaluate potential further emission reductions at pre-1994 heaters;

WHEREAS, the District prepared initial draft amendments, published them for comment, and held a public workshop on December 4, 2012, to discuss the draft amendments with interested parties and the public;

WHEREAS, subsequent to the December 4, 2012, public workshop, District staff revised the proposed rule based on comments provided by the public and published revised draft amendments for comment on May 29, 2013;

WHEREAS, subsequent to publishing the revised draft amendments on May 29, 2013, and based on comments provided by the public, District staff prepared the Proposed Amendments and published the Proposed Amendments for comment in advance of the public hearing on October 16, 2013;

WHEREAS, on September 16, 2013, District staff discussed the Proposed Amendments with the Stationary Source Committee of the Board of Directors of the Bay Area Air Quality Management District, after having discussed earlier versions of the Proposed Amendments with the Stationary Source Committee on March 19, 2012;

WHEREAS, on September 9, 2013, the District transmitted the text of the Proposed Amendments to California Air Resources Board;

WHEREAS, on September 9, 2013, District staff published in newspapers and distributed and published on the District's website a request for public comments and input on the Proposed Amendments;

WHEREAS, the Board of Directors of the Bay Area Air Quality Management District held a public hearing on October 16, 2013, to consider the Proposed Amendments in accordance with all provisions of law;

WHEREAS, at the October 16, 2013, public hearing, the subject matter of the Proposed Amendments was discussed with interested persons in accordance with all provisions of law;

WHEREAS, District staff has prepared and presented to this Board a detailed Staff Report regarding the Proposed Amendments, which Staff Report has been considered by this Board and is incorporated herein by reference;

WHEREAS, the Board of Directors finds and determines that the Proposed Amendments are considered a "project" pursuant to the California Environmental Quality Act ("CEQA") (Public Resources Code § 21000 *et seq.*);

WHEREAS, the District is the CEQA lead agency for this project pursuant to CEQA Guidelines § 15050 (California Code of Regulations ("CCR"), tit. 14 § 15050);

WHEREAS, District staff contracted with Environmental Audit, Inc., of Placentia, California to prepare an assessment of the potential environmental effects from the adoption and implementation of the Proposed Amendments;

WHEREAS, Environmental Audit, Inc., prepared an Initial Study as required by CEQA, in which the potential environmental effects from the adoption and implementation of the Proposed Amendments were analyzed, and subsequently prepared a Draft Negative Declaration for the proposed rulemaking project because the Initial Study identified no potentially significant effects on the environment and because there is no evidence in the record before the District that there could be a significant effect on the environment from the adoption and implementation of this rulemaking project;

WHEREAS, that Draft Negative Declaration and Initial Study were offered for and subjected to public review and comment (Public Resources Code §§ 21082.1, 21091, 21092; 14 CCR § 15070 *et seq.*);

WHEREAS, public notice was provided and copies of the Draft Negative Declaration were made available to all interested persons and provided an adequate comment period of at least 20 days pursuant to CEQA Guidelines § 15105, subdivision (b);

WHEREAS, no comments on the CEQA document were received from interested persons during the CEQA comment period;

WHEREAS, District staff, in exercising its independent judgment, has determined that there is no substantial evidence, in light of the whole record before the District, that the adoption and implementation of the Proposed Amendments could have a significant effect on the environment;

WHEREAS, it is necessary that the adequacy of the Draft Negative Declaration be determined by the Board of Directors of the Bay Area Air Quality Management District prior to its adoption;

WHEREAS, the members of the Board of Directors voting on this Resolution have reviewed and considered the Draft Negative Declaration;

WHEREAS, the Board of Directors finds and determines that in light of the whole record before it (which specifically includes the Initial Study and the Draft Negative Declaration), the Proposed Amendments will not have any significant adverse impacts on the environment, and the Negative Declaration reflects the District's independent judgment and analysis;

WHEREAS, the Board of Directors, pursuant to the requirements of Health & Safety Code Section 40728.5, has actively considered the socioeconomic impacts of Proposed Amendments and has reviewed and considered the "Socioeconomic Analysis for Regulation 9, Rule 10 (May 29, 2013): NOx and CO from Boilers, Steam Generators, and Process Heaters in Petroleum Refineries" prepared for the District by Applied Development Economics of Walnut Creek, California, and has determined that the Proposed Amendments would have no significant socioeconomic impacts;

WHEREAS, the District has not performed an incremental cost analysis pursuant to California Health and Safety Code Section 40920.6 because the Proposed Amendments do not include any Best Available Retrofit Control Technology (BARCT) rule or rule that is part of an Alternative Emission Reduction Strategy as described in Health and Safety Code Section 40914;

WHEREAS, the District has prepared, pursuant to the requirements of Health & Safety Code Section 40727.2, a comparison of federal and District requirements applicable to this source category and has found that the Proposed Amendments would not be conflict with any federal or other District rules, and the Board of Directors has agreed with these findings;

WHEREAS, the documents and other materials that constitute the record of proceedings on which this rulemaking project is based are located at the Bay Area Air Quality

Management District, 939 Ellis Street, San Francisco, 94109, and the custodian for these documents is Sean Gallagher, Clerk of the Boards;

WHEREAS, District staff recommends adoption of the Proposed Amendments and adoption of the Negative Declaration for this rulemaking project;

WHEREAS, the Board of Directors concurs with District staff's recommendations and desires to adopt the Proposed Amendments and to adopt the Negative Declaration for Proposed Amendments to comply with CEQA.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Bay Area Air Quality Management District does hereby adopt the Proposed Amendments, pursuant to the authority granted by law, as set forth in Attachment A hereto, and discussed in the Staff Report (including Appendices) with instructions to staff to correct any typographical or formatting errors before final publication of the Proposed Amendments.

BE IT FURTHER RESOLVED, that the Board of Directors of the Bay Area Air Quality Management District does hereby adopt the Negative Declaration pursuant to CEQA for the Proposed Amendments.

The foregoing resolution was duly and regularly introduced, passed and adopted at a regular meeting of the Board of Directors of the Bay Area Air Quality Management District on the Motion of Director BATES, seconded by Director AVALOS, on the 16<sup>th</sup> day of OCTOBER, 2013 by the following vote of the Board:

AYES: ADAMS, AVALOS, BARRETT, BATES, CHAVEZ, GIOIA,  
GROOM, HAGGERTY, MAR, MILEY, PEPPER, ROSS


NOES: HUDSON, SPERING

ABSTAIN: PIEPHO

ABSENT: KLATT, KNISS, LEE, SBRANTI, WAGENKNECHT, ZANE,  
KALRA

  
\_\_\_\_\_  
Ash Kalra  
Chairperson of the Board of Directors

ATTEST:

  
\_\_\_\_\_  
Carole Groom  
Secretary of the Board of Directors

## **ATTACHMENT A**

### **[PROPOSED AMENDMENTS] Regulation 9, Rule 10: Nitrogen Oxides and Carbon Monoxide from Boilers, Steam Generators and Process Heaters in Petroleum Refineries**

**REGULATION 9**  
**INORGANIC GASEOUS POLLUTANTS**  
**RULE 10**  
**NITROGEN OXIDES AND CARBON MONOXIDE FROM BOILERS, STEAM**  
**GENERATORS AND PROCESS HEATERS IN PETROLEUM REFINERIES**

**INDEX**

**9-10-100 GENERAL**

9-10-101	Description
9-10-110	Exemptions
9-10-111	Limited Exemption, Small Units
9-10-112	Limited Exemption, Low Fuel Usage
9-10-113	<u>Limited Exemption, Alternate NOx Compliance Plan</u>

**9-10-200 DEFINITIONS**

9-10-201	Deleted December 15, 2010
9-10-202	Boiler or Steam Generator
9-10-203	British Thermal Unit (BTU)
9-10-204	CO Boiler
9-10-205	Deleted December 15, 2010
9-10-206	Heat Input
9-10-207	Higher Heating Value (HHV)
9-10-208	Natural Gas
9-10-209	Nitrogen Oxides (NOx)
9-10-210	Non-Gaseous Fuel
9-10-211	Operating Day
9-10-212	Out of Service
9-10-213	Petroleum Refinery
9-10-214	Process Heater
9-10-215	Rated Heat Input
9-10-216	Refinery-wide Emission Rate
9-10-217	Small Unit
9-10-218	Start-up or Shutdown
9-10-219	Therm
9-10-220	Deleted December 15, 2010
9-10-221	Best Available Control Technology (BACT)
9-10-222	Curtailed Operation

**9-10-300 STANDARDS**

9-10-301	Refinery-wide NOx Emission Limit
9-10-302	Deleted July 17, 2002
9-10-303	Federal Refinery-wide and CO Boiler NOx Emission Limits
9-10-304	Interim NOx Emission Limit For CO Boilers
9-10-305	CO Emission Limit
9-10-306	Small Unit Requirements
9-10-307	Final NOx Emission Limits For CO Boilers
9-10-308	<u>Alternate NOx Compliance Plan</u>

**9-10-400 ADMINISTRATIVE REQUIREMENTS**

- 9-10-401 Deleted December 15, 2010
- 9-10-402 Deleted December 15, 2010
- 9-10-403 Deleted December 15, 2010
- 9-10-404 Final Control and Monitoring Plan
- 9-10-405 Application for Alternate NOx Compliance Plan
- 9-10-406 Determination of Compliance
- 9-10-407 Boiler, Steam Generator and Process Heater Status Report

**9-10-500 MONITORING AND RECORDS**

- 9-10-501 Deleted December 15, 2010
- 9-10-502 Monitoring
- 9-10-503 Modified Maximum Heat Input
- 9-10-504 Records
- 9-10-505 Reporting Requirements

**9-10-600 MANUAL OF PROCEDURES**

- 9-10-601 Determination of Nitrogen Oxides
- 9-10-602 Determination of Carbon Monoxide and Stack-Gas Oxygen
- 9-10-603 Compliance Determination
- 9-10-604 Determination of Higher Heating Value
- 9-10-605 Tune-Up Procedures



**REGULATION 9**  
**INORGANIC GASEOUS POLLUTANTS**  
**RULE 10**  
**NITROGEN OXIDES AND CARBON MONOXIDE FROM BOILERS, STEAM**  
**GENERATORS AND PROCESS HEATERS IN PETROLEUM REFINERIES**

(Adopted January 5, 1994)

**9-10-100 GENERAL**

**9-10-101** Description: This rule limits the emissions of nitrogen oxides and carbon monoxide from boilers, steam generators, and process heaters, including CO boilers, in petroleum refineries.

*(Amended December 15, 2010)*

**9-10-110 Exemptions:** The requirements of this rule shall not apply to the following:

110.1 Boilers, steam generators and process heaters with a rated heat input less than 2 million BTU/hour, if fired exclusively with natural gas, liquefied petroleum gas, or any combination thereof.

110.2 Boilers, steam generators and process heaters with a rated heat input less than 1 million BTU/hour fired with any fuel.

110.3 Waste heat recovery boilers that are used to recover sensible heat from the exhaust of combustion turbines or reciprocating internal combustion engines.

110.4 Boilers, steam generators and process heaters processing hydrogen sulfide process flue gas in sulfur recovery plants and their tail-gas treating units, or sulfuric acid manufacturing plants.

110.5 Boilers, steam generators and process heaters fired on non-gaseous fuel when natural gas is unavailable for use.

110.6 Boilers, steam generators and process heaters, including CO boilers, that receive an Authority to Construct subject to BACT requirements for NOx on or after January 5, 1994.

*(Amended December 15, 2010)*

**9-10-111 Limited Exemption, Small Units:** The requirements of Sections 9-10-301, 303, and 305 and 308 shall not apply to the use of any small units, provided the requirements of Section 9-10-306 are satisfied.

*(Amended 7/17/02; 12/15/10)*

**9-10-112 Limited Exemption, Low Fuel Usage:** The requirements of Sections 9-10-301, 303, and 305 and 308 shall not apply to the use of any boiler, steam generator or process heater that has an annual heat input less than 90,000 therms during each consecutive 12-month period or that accepts a condition in its Title V Permit to Operate limiting the annual heat input to less than 90,000 therms, provided the requirements for small units in Sections 9-10-306 ~~and are satisfied~~ and a fuel-flow meter as described in Section 9-10-502.2 ~~are satisfied~~ is maintained and operated.

*(Amended 7/17/02; 12/15/10)*

**9-10-113 Limited Exemption, Alternate NOx Compliance Plan:** The requirements of Section 9-10-301 shall not apply to the use of any boiler, steam generator or process heater at a refinery subject to Section 9-10-308.

**9-10-200 DEFINITIONS**

**9-10-201 Deleted December 15, 2010**

**9-10-202 Boiler or Steam Generator:** Any combustion equipment used to produce steam or heat water.

**9-10-203 British Thermal Unit (BTU):** The amount of heat required to raise the temperature of one pound of water from 59° F to 60° F at one atmosphere.

- 9-10-204 CO Boiler:** A CO boiler is any boiler or furnace that processes the off-gases from a catalytic cracking unit (CCU) regenerator or a coker burner. A partial-burn CO boiler normally processes off-gases from a CCU regenerator that is operated in a partial-burn mode such that the off-gases normally have a CO concentration exceeding 2% by volume.  
(Amended December 15, 2010)
- 9-10-205 Deleted December 15, 2010**
- 9-10-206 Heat-Input:** The heat of combustion released due to burning a fuel in a source, using higher heating value of the fuel. This does not include the sensible heat of incoming combustion air. In the case of carbon monoxide boilers, the heat input includes the sensible heat of regenerator off-gases and the heat of combustion of the incoming carbon monoxide and of the auxiliary fuel.
- 9-10-207 Higher Heating Value (HHV):** The total heat liberated per mass of fuel burned (BTU per pound) when fuel and dry air at standard conditions undergo complete combustion and all resultant products are brought to their standard states at standard conditions per Section 9-10-604.
- 9-10-208 Natural Gas:** Any mixture of gaseous hydrocarbons containing at least 80 percent methane by volume, as determined according to Standard Method ASTM D1945-64.
- 9-10-209 Nitrogen Oxides (NOx):** The sum of nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) in the flue gas, collectively expressed as nitrogen dioxide.
- 9-10-210 Non-Gaseous Fuel:** Any fuel that is not a gas at 68° F and one atmosphere.  
(Amended December 15, 2010)
- 9-10-211 Operating Day:** 24 hours from midnight to midnight.
- 9-10-212 Out of Service:** The period of time during which a unit is in an inactive state following shutdown.
- 9-10-213 Petroleum Refinery:** Any facility engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, lubricants or other products through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives.
- 9-10-214 Process Heater:** Any combustion equipment that transfers heat from combustion gases to water or process streams.
- 9-10-215 Rated Heat Input:** The heat input capacity specified on the nameplate of the combustion source. If the combustion source has been physically modified and/or operated in such a manner that its maximum heat input is different from the heat input capacity specified on the nameplate, then the modified maximum heat input per Section 9-10-503 shall be considered as the rated heat input.
- 9-10-216 Refinery-wide Emission Rate:** The ratio of the total mass of discharge into the atmosphere of nitrogen oxides, in pounds, to the sum of the actual heat input, in million BTU, calculated over a twenty-four (24) hour operating day.  
(Amended December 15, 2010)
- 9-10-217 Small Unit:** Any refinery boiler, steam generator or process heater with a rated heat input less than 10 million BTU/hour.  
(Amended December 15, 2010)
- 9-10-218 Startup or Shutdown:** Startup is that period of time, not to exceed twelve (12) hours unless specifically extended by a ~~Title V~~ Permit to Operate, during which a unit is brought up to its normal operating temperature from a cold start, initially at zero fuel flow, by following a prescribed series of separate steps or operations. Shutdown is that period of time, not to exceed nine (9) hours unless specifically extended by a ~~Title V~~ Permit to Operate, during which a unit is taken out of service from a normal operating mode to an inactive status following a prescribed series of separate steps or operations.  
(Amended December 15, 2010)
- 9-10-219 Therm:** One hundred thousand (100,000) BTUs.
- 9-10-220 Deleted December 15, 2010**
- 9-10-221 Best Available Control Technology (BACT):** As defined in Regulation 2, Rule 2.  
(Adopted December 15, 2010)
- 9-10-222 Curtailed Operation:** Operation of a boiler, steam generator or process heater at no more than 30% of its rated heat input.

*(Adopted December 15, 2010)***9-10-300 STANDARDS**

**9-10-301 Refinery-wide NOx Emission Limit:** A person shall not exceed a refinery-wide emission rate from boilers, steam generators and process heaters, excluding CO boilers, of 0.033 pounds NOx per million BTU of heat input, based on an operating day average. Boilers, steam generators and process heaters that are test-fired on non-gaseous fuel, that are undergoing startup or shutdown, or that are temporarily out of service, that are in curtailed operation, or that are test-fired on non-gaseous fuel shall be included in the refinery-wide emission rate as follows:

- 301.1 Deleted December 15, 2010
- 301.2 Deleted December 15, 2010
- 301.3 Units Test-Fired On Non-Gaseous Fuel: For the purposes of determining compliance with the emission limit of Section 9-10-301, the emission contribution of each boiler, steam generator or process heater that is fired on non-gaseous fuel for equipment testing shall be taken as the operating day average of NOx emissions at the average heat input over the previous thirty (30) day period. Equipment testing shall not exceed a total of forty-eight (48) hours during any calendar year for any one unit.
- 301.4 Units in Start-up or Shutdown or in Curtailed Operation: For the purposes of determining compliance with the emission limit of Section 9-10-301, the emission contribution of each boiler, steam generator or process heater that is undergoing startup or shutdown, or that is in Curtailed Operation shall be one of the following:
  - 4.1 The operating day average NOx emissions (either from a continuous emission monitoring system (CEMS) or from an equivalent parametric monitoring system developed in accordance with a ~~Title V~~ Permit to Operate and Section 9-10-502.1), and the operating day heat input.
  - 4.2 The operating day average NOx emissions (either from a CEMS or from an equivalent parametric monitoring system developed in accordance with a ~~Title V~~ Permit to Operate and Section 9-10-502.1), and the operating day heat input averaged over the previous thirty (30) day period or, subject to the approval of the APCO, an alternate 30-day period representative of normal operation.
- 301.5 Units Temporarily Out of Service: For the purposes of determining compliance with the emission limit of Section 9-10-301, the emission contribution of each boiler, steam generator or process heater that is temporarily out of service shall be the operating day average NOx emissions (either from a continuous emission monitoring system (CEMS) or from an equivalent parametric monitoring system developed in accordance with a ~~Title V~~ Permit to Operate and Section 9-10-502.1), and the operating day heat input, averaged over the previous thirty (30) day period or, subject to the approval of the APCO, an alternate 30-day period representative of normal operation.

*(Amended December 15, 2010)***9-10-302 Deleted July 17, 2002**

**9-10-303 Federal Refinery-wide and CO Boiler NOx Emission Limits:** A person shall not exceed a refinery-wide emission rate from boilers, steam generators or process heaters, excluding CO boilers, of 0.20 pounds NOx per million BTU of heat input, based on an operating day average.

- 303.1 Except during startup and shutdown, a person shall not operate a CO boiler unless the emissions of nitrogen oxides (NOx) do not exceed 300 ppmv, dry at 3% oxygen, based on an operating day average.

*(Amended 7/17/02; 12/15/10)*

**9-10-304 Interim NOx Emission Limit For CO Boilers:** Until Section 9-10-307 is effective, and except during startup and shutdown, a person shall not operate a CO boiler unless at least one of the following is met:

- 304.1 Emissions of nitrogen oxides (NOx) do not exceed 150 ppmv, dry at 3% oxygen, based on an operating day average; or
- 304.2 Emissions of nitrogen oxides (NOx) are controlled by an emission control system with a NOx control efficiency of at least 50 percent by weight.

*(Amended December 15, 2010)*

**9-10-305 CO Emission Limit:** Except during start-up, shutdown or curtailed operation, a person shall not operate a boiler, steam generator or process heater, including CO boilers, unless carbon monoxide emissions of 400 ppmv, dry at 3% oxygen, based on an operating day average, are not exceeded.

*(Amended December 15, 2010)*

**9-10-306 Small Unit Requirements:** A person shall not operate a small unit unless at least one of the following is met:

- 306.1 Operate in a manner that maintains stack-gas oxygen concentrations at less than or equal to 3 percent by volume on a dry basis; or
- 306.2 Tune at least once every twelve (12) months, or within two weeks of unit startup if not operated in the last twelve (12) months, by a technician in accordance with the procedure specified in Section 9-10-605; or
- 306.3 Meet the applicable emission limits in Sections 9-10-301, 303 and 305.

*(Amended December 15, 2010)*

**9-10-307 Final NOx Emission Limits For CO Boilers:** Effective January 1, 2015, and except during start-up or shutdown, a person shall not operate a CO boiler unless it meets the applicable NOx emission limits in Sections 9-10-307.1 and 307.2.

307.1 A person shall not operate a non-partial-burn CO boiler, ~~except for a partial-burn CO boiler,~~ unless the following NOx limits are not exceeded:

Averaging Period	NOx (ppmv, dry at 3% O <sub>2</sub> )
1.1 Operating day	150
1.2 Calendar year (excluding periods when the CO boiler does not process CCU regenerator offgas)	45

307.2 A person shall not operate a partial-burn CO boiler, unless the following NOx limits are not exceeded:

Averaging Period	NOx (ppmv, dry at 3% O <sub>2</sub> )
2.1 Operating day	125
2.2 Calendar year	85

*(Adopted December 15, 2010)*

**9-10-308 Alternate NOx Compliance Plan:** A person at a refinery with an Alternate NOx Compliance Plan that has been approved in accordance with Section 9-10-405, shall not exceed the refinery-wide daily NOx limit from boilers, steam generators and process heaters, excluding CO boilers, as specified in the Plan. The boilers, steam generators and process heaters that are covered by the Alternate NOx Compliance Plan shall be referred to as devices in this Section.

308.1 A daily NOx limit shall apply to all devices at a refinery with an approved Alternate NOx Compliance Plan. The limit shall be the sum of the baseline NOx daily emissions for each device, expressed in pounds of NOx. The baseline NOx daily emissions for each device shall be the average of the daily emissions on any ten (10) different days during the 3-year period immediately preceding the date of the application for an Alternate Compliance Plan, on which the refinery operator was in compliance with Section 9-10-301. The same 10 days shall be used for all devices at a refinery. The APCO may consider allowing 10 days within a different time

period, if the APCO finds that a different period allows the selection of operating days that better represent maximum daily emission levels for these devices.

1.1 At any refinery that used Interchangeable Emission Reduction Credits (IERC) to comply with Section 9-10-301 on any of the 10 baseline days, the average difference between actual operating emissions, in pounds NOx/day, and the emissions that would meet the 0.033 pounds NOx/million BTU NOx limit in Section 9-10-301 shall be calculated for the 10 days used to develop the daily NOx limit, and the daily NOx limit shall be reduced by this difference. NOx Emission Reduction Credits (ERC) generated in accordance with Regulation 2, Rule 2 may be surrendered on a one-time basis at a 1.15 to 1 ratio to make up all or part of the difference, and the daily NOx emissions limit will be adjusted accordingly.

1.2 At any refinery with an Authority to Construct application submitted before the date of approval of an Alternate Compliance Plan described in Section 9-10-405, if the actions permitted in the Authority to Construct would reduce the number of devices subject to Section 9-10-301 and require additional NOx emissions reductions to comply with Section 9-10-301, the daily NOx emissions limit shall be reduced by the amount of reductions required. NOx ERC generated in accordance with Regulation 2, Rule 2 may be surrendered on a one-time basis at a 1.15 to 1 ratio to offset all or part of the NOx emissions reductions required, and the daily NOx emissions limit will be adjusted accordingly.

308.2 A person operating under a daily NOx limit shall determine compliance with that limit on a daily basis.

308.3 For any device for which baseline NOx emissions have been permanently reduced, a permit application may be submitted to modify the baseline daily NOx emissions for that device.

308.4 The daily NOx limit shall be reduced when a device is no longer subject to this rule. The amount of reduction shall be equal to the baseline NOx daily emissions for that device.

## **9-10-400 ADMINISTRATIVE REQUIREMENTS**

**9-10-401 Deleted December 15, 2010**

**9-10-402 Deleted December 15, 2010**

**9-10-403 Deleted December 15, 2010**

**9-10-404 Final Control and Monitoring Plan:** A person subject to Section 9-10-307 shall comply with the following increments of progress:

404.1 No later than twenty-four (24) months prior to the effective date of Section 9-10-307, submit to the APCO a control plan detailing the proposed measures, if any, to be taken in order to meet the requirements of Section 9-10-307, as well as proposed measures, if any, to be taken to continue to meet the requirements of Section 9-10-301.

404.2 No later than eighteen (18) months prior to the effective date of Section 9-10-307, submit applications for all Authorities to Construct required for compliance with Section 9-10-307.

404.3 No later than 30 days after the effective date of Section 9-10-307, perform testing for nitrogen oxide and carbon monoxide emissions at each CO boiler subject to Section 9-10-307 at the rated heat input or as near thereto as practicable. This requirement may be satisfied by monitoring nitrogen oxide and carbon monoxide emissions with a continuous emission monitoring system (CEMS).

*(Adopted December 15, 2010)*

**9-10-405 Application for an Alternate NOx Compliance Plan:** An application for an Alternate NOx Compliance Plan may be submitted by a person who operates a refinery where a boiler, steam generator or process heater is subject to Section 9-10-301. The Alternate NOx Compliance Plan shall apply to all boilers, steam generators and process heaters that are subject to the NOx limit in Section 9-10-301 at the time the Alternate NOx Compliance Plan is approved, and only to these boilers, steam generators and process heaters. The application shall be submitted and processed in accordance with Regulation 2, Rule 1. The fees for the application shall be as specified in Regulation 3 for an alternate compliance plan. The application shall include the following information, which shall be included in the Permit to Operate for the boiler, steam generator or process heater:

- 405.1 The proposed effective date of the Alternate NOx Compliance Plan.
- 405.2 A list of the boilers, steam generators and process heaters that will be subject to a daily NOx limit, as specified in Section 9-10-308, and for each:
- 2.1 The baseline NOx daily emissions determined in accordance with Section 9-10-308.1, including the data used to establish the baseline NOx daily emissions and the source(s) of the data. To the extent possible, the baseline NOx daily emissions shall be based on CEMS data.
  - 2.2 One or two substitute emission factors to be used in the absence of CEMS data and determined from representative source test data measured in accordance with District Manual of Procedures, Volume IV, ST-13A (nitrogen oxides) and ST-14 (oxygen), including the source test report.
  - 2.3 The amount of the required reductions to the daily NOx limit described in Sections 9-10-308.1.1 and 308.1.2 and any proposed mitigation to these reductions.
- 405.3 The amount of any ERC use allowed by Sections 9-10-308.1.1 and 308.1.2 shall be calculated as follows: (average difference between actual operating emissions, in pounds NOx/day, and the pounds NOx emissions/day that would meet the 0.033 pounds NOx/million BTU NOx limit in Section 9-10-301 for the 10 days used to develop the baseline NOx emissions)(365 days/year)(1.15) = NOx ERC surrendered. Any ERC use shall be surrendered before the application for the Alternate NOx Compliance Plan is considered complete. If an Authority to Construct that meets the conditions described in Section 9-10-308.1.2 is cancelled, any ERC surrendered shall be returned to the applicant.

**9-10-406 Determination of Compliance:** Compliance with the daily limit in Section 9-10-301 or 308 shall be determined by CEMS data and, for those boilers, steam generators and process heaters subject to parametric monitoring, the emission factor established according to Section 9-10-502.1.2 and the heat input rate as measured for each boiler, steam generator and process heater.

**9-10-407 Boiler, Steam Generator and Process Heater Status Report:** Any person who operates a boiler, steam generator or process heater that is subject to Section 9-10-301 or 308 shall, no later than [6 months after adoption], submit information on the make, model and emission rates for all burners in each boiler, steam generator or process heater. Information shall be submitted in a format as specified by the APCO. The information shall be updated no later than 30 days after any non-identical burner change or replacement.

## **9-10-500 MONITORING AND RECORDS**

**9-10-501 Deleted December 15, 2010**

**9-10-502 Monitoring:** A person subject to Sections 9-10-301, 303, 304, 305, ~~or~~ 307 or 308 shall maintain in good working order, and operate the following equipment:

502.1 An in-stack nitrogen oxide (NO<sub>x</sub>), carbon monoxide (CO), and oxygen (O<sub>2</sub>) continuous emission monitoring system (CEMS), or equivalent parametric monitoring system as specified in a ~~Title V~~ Permit to Operate. The CEMS ~~shall~~must meet the requirements of the District Manual of Procedures, Volume V, Continuous Emission Monitoring, Policy and Procedures.

1.1 No later than [6 months after adoption], a person who operates boilers, steam generators or process heaters that are subject to Section 9-10-301 or 308 shall submit a monitoring plan to the APCO for the installation of NO<sub>x</sub> CEMS on these boilers, steam generators or process heaters such that no less than 95% of the NO<sub>x</sub> emissions, by weight, subject to either 9-10-301 or 308 is monitored with a NO<sub>x</sub> CEMS. The monitoring plan shall consider the actual NO<sub>x</sub> emission contribution from each boiler, steam generator or process heater subject to Section 9-10-301 or 308 during the most recent calendar year for which complete data are available at the time of the submittal of the monitoring plan. No later than [12 months after adoption], the APCO shall approve each submitted monitoring plan, or else shall specify additional NO<sub>x</sub> CEMS that must be installed, and notify the affected refinery. The date of plan approval or notification shall serve as the "date of notification" specified in the District Manual of Procedures (MOP), Volume V, Continuous Emission Monitoring, Policy and Procedures. The installation of CEMS shall then be in accordance with the schedule and other provisions of MOP, Volume V, except that the completion of installation in Section 4.3 of Volume V shall be within 12 months of submittal of the Intent to Purchase.

1.2 Any person who operates a boiler, steam generator or process heater that uses a parametric monitoring system to monitor compliance with Section 9-10-301 or 308 shall estimate the NO<sub>x</sub> emission contribution of the boiler, steam generator or process heater based on one or two NO<sub>x</sub> emission factors (expressed as lb NO<sub>x</sub> / MM BTU) and on actual fuel input for all operating conditions, except as allowed by Section 9-10-301.3, 301.4 or 301.5. The emission factor shall be based on one or more District-approved source tests and included in a Permit to Operate. The operator shall conduct periodic monitoring of boilers, steam generators and process heaters that use a parametric monitoring system as follows:

2.1 Boilers, steam generators and process heaters rated less than 25 MM BTU/hr shall have one source test per consecutive 12 month period. The time interval between source tests shall not exceed 16 months. A boiler, steam generator or process heater that is out of service need not be placed into service for the purposes of conducting a source test. Notwithstanding the time limits specified above, a source test for a boiler, steam generator or process heater that is out of service may be delayed until it returns to service.

2.2 Boilers, steam generators and process heaters rated 25 MM BTU/hr or more shall have two source tests per consecutive 12 month period. The time interval between source tests shall be no less than 5 months and no more than 8 months. Notwithstanding the time limits specified above, a source test for a boiler, steam generator or process heater that is out of service may be delayed until it returns to service.

If a source test measures an emission factor higher than the emission factor in the Permit to Operate, then the higher emission factor shall become the new emission factor for determining compliance with Section 9-10-301 and 308. An operator may re-test

at operating conditions substantially similar to those during the original test and appeal the change in emission factor to the APCO within 60 days. An operator may submit source test data with a permit application to establish a lower emission factor for a device that has been altered in a way that reduces the emission rate. The APCO may require that a source test be performed at a specific operating condition if the APCO determines that such a condition is a representative operating condition that has not been previously tested. Source test results shall be submitted to the APCO within 60 days of any test.

502.2 A fuel-flow meter in each fuel line for each boiler, steam generator and process heater, including each CO boiler.

*(Amended 7/17/02; 12/15/10)*

**9-10-503 Modified Maximum Heat Input:** Any unit that has been physically modified such that its maximum heat input is different than the heat input specified on the nameplate shall demonstrate to the APCO the maximum heat input while operating the source at maximum capacity.

**9-10-504 Records:** The owner/operator of a source subject to this rule shall keep the following records, in a form suitable for inspection for a period of at least five (5) years. Such records shall be retained for a minimum of sixty (60) months from date of entry and made available to the APCO upon request. These records shall include, but are not limited to the following:

504.1 For all sources subject to the requirements of Sections 9-10-301, 303, 304, 305, ~~307, 308~~ or 404.3:

- 1.1 The continuous emission monitoring system (CEMS) measurements for NO<sub>x</sub> and CO (ppmv corrected to 3% oxygen) and O<sub>2</sub> (percent by volume on a dry basis) or equivalent parametric monitoring system parameters for NO<sub>x</sub>, CO, and O<sub>2</sub> in ppmv; and hourly (lb/hour) and daily (lb/day) NO<sub>x</sub> emissions for each source. Measurements shall be submitted in a digital format that can be readily imported into standard database tools as specified by the APCO. The APCO shall provide a reasonable amount of time to implement any required changes in data format.
- 1.2 The type, heat input (BTU/hr and BTU/day), and higher heating value of each fuel burned, and the injection rate for any reactant chemicals used by the emission control system(s) on a daily basis.
- 1.3 The date, time, and duration of any startup, shutdown or malfunction in the operation of any unit, emission control equipment or emission monitoring equipment.
- 1.4 The results of performance testing, evaluations, calibrations, checks, adjustments, and maintenance of any CEMS required by this rule.
- 1.5 A list of all sources subject to the NO<sub>x</sub> refinery-wide emission rate limits in Sections 9-10-301 and 303.
- 1.6 Total NO<sub>x</sub> emissions and total heat input for all sources listed in Section 9-10-504.1.5, on a daily basis.
- 1.7 The date, time and duration of all start-up and shutdown periods.
- 1.8 The results of source tests required by Section 9-10-404.3.

504.2 For all sources subject to Section 9-10-306.2, records of annual tune-ups.

*(Amended 7/17/02; 12/15/10)*

**9-10-505 Reporting Requirements:** A person subject to the requirements of Sections 9-10-301, 303, 304, 305, 306<sub>1</sub>~~, or 307 or 308~~ shall meet the following reporting requirements:

505.1 Report to the APCO any violation of Section 9-10-301, 303, 304, 305, 306<sub>1</sub>~~, or 307 or 308~~ in accordance with the requirements of Regulation 1-522 for continuous emission monitoring systems (CEMS) and Regulation 1-523 for parametric monitoring systems.



- 505.2 Submit a written report for each calendar quarter to the APCO. The report shall be due on the 30th day following the end of the calendar quarter and shall include:
- 2.1 A summary of the data obtained from the CEMS or equivalent parametric monitoring system and the fuel meters installed pursuant to Section 9-10-502; and
  - 2.2 The date, time, duration, and magnitude of emissions in excess of the appropriate standards; the nature and cause of the excess (if known); the corrective actions taken; and the preventive measure adopted.
- (Amended 7/17/02; 12/15/10)*
- 505.3 A person subject to the requirements of Section 9-10-308 shall submit to the APCO a permit application to amend the Alternate NOx Compliance Plan whenever Section 9-10-308.34 is triggered. The application shall be submitted within 30 days of the event that triggers Section 9-10-308.3.

## 9-10-600 MANUAL OF PROCEDURES

- 9-10-601 Determination of Nitrogen Oxides:** Compliance with the nitrogen oxide emission requirements of Sections 9-10-301, 303, 304, ~~and 307 and 308~~ shall be determined by a continuous emission monitoring system (CEMS) that meets the requirements of Regulation 1-522, or by an equivalent parametric monitoring system that is authorized in a ~~Title V~~ Permit to Operate and that meets the requirements of Regulation 1-523. CEMS operation and compliance with Section 9-10-404.3 shall be verified by source test as set forth in the District Manual of Procedures, Volume IV, ST-13A (nitrogen oxides) and ST-14 (oxygen).
- (Amended 7/17/02; 12/15/10)*
- 9-10-602 Determination of Carbon Monoxide and Stack-Gas Oxygen:** Compliance with the carbon monoxide emission requirements of Section 9-10-305 shall be determined by a continuous emission monitoring system (CEMS) that meets the requirements of Regulation 1-522, or by an equivalent parametric monitoring system that is authorized in a ~~Title V~~ Permit to Operate and that meets the requirements of Regulation 1-523. CEMS operation and compliance with Section 9-10-404.3 shall be verified by source test as set forth in the District Manual of Procedures, Volume IV, ST-6 (carbon monoxide) and ST-14 (oxygen).
- (Amended December 15, 2010)*
- 9-10-603 Compliance Determination:** All emission determinations shall be made in the as-found operating condition, except during periods of start-up or shutdown.
- (Amended December 15, 2010)*
- 9-10-604 Determination of Higher Heating Value:** If certification of the higher heating value is not provided by the third-party fuel supplier, it shall be determined by one of the following test methods: (1) ASTM D2015-85 for solid fuels; (2) ASTM D240-87 or ASTM D2382-88 for liquid hydrocarbon fuels; or (3) ASTM D1826-88 or ASTM D1945-81 in conjunction with ASTM D3588-89 for gaseous fuels.
- 9-10-605 Tune-Up Procedures:** The tuning procedure required by Section 9-10-306.2 shall be performed in accordance with the procedure set forth in the District Manual of Procedures, Volume I, Chapter 5.