

Regulation I

Rule 111 – Federal Permitting Requirements for Sources of Greenhouse Gases

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RULE 111

FEDERAL REQUIREMENTS FOR SOURCES OF GREENHOUSE GASES

A. PURPOSE: The purpose of this Rule is to: (1) ensure that any stationary source that has the potential to emit greenhouse gases, as defined in this Rule, above applicable thresholds complies with the requirements of District Rule 110 (NSR) and Rule 501 (Title V), as applicable; and (2) establish federally enforceable limits on potential to emit greenhouse gases for stationary sources that elect to comply with such limits in lieu of obtaining a Part 70 permit that is otherwise required

B. APPLICABILITY:

1. General Applicability: Except as provided in sections (B)(2), (B)(3), (B)(4), and (B)(5) below, this Rule shall apply to any stationary source which has the potential to emit greenhouse gases.

2. Exemption, Stationary Source with Potential to Emit Greenhouse Gases Below Specified Thresholds: This Rule shall not apply to any stationary source which has a maximum potential to emit greenhouse gases below the applicable threshold(s) in sections (D)(1) and (D)(2), below, including sources with their potential to emit limited by conditions in an operating permit if the conditions are federally, or legally and practically enforceable.

3. Exemption from Recordkeeping and Reporting: The following sources shall not be required to comply with the recordkeeping and reporting provisions in sections (E), (F), and (G):

- a. A stationary source which emits, or will emit, less than or equal to 5,000 tons per year of CO₂e, in every 12-month period. Within 30 days of a written request by the District or EPA, the owner or operator of such stationary source shall demonstrate that the stationary source's greenhouse gas emissions are less than or equal to 5,000 tons per year of CO₂e, in every 12-month period in the preceding 5 years.
- b. Any stationary source that would otherwise be subject to the provisions of section (D)(2)(b) or (D)(4)(2)(c) below and which meets both of the following conditions:
 - i. The owner or operator has notified the District at least 30 days prior to any violation that s/he will submit an application for a Part 70 permit, or otherwise obtain federally-enforceable permit limits; and
 - ii. A complete Part 70 permit application is received by the District, or the permit action to otherwise obtain federally-enforceable limits is completed, within 12 months of the date of notification.
- c. Any stationary source that has applied for a Part 70 permit in a timely manner and in conformance with District Rule 501 and is awaiting final action by the District and EPA.
- d. Any stationary source required to obtain a Part 70 permit under District Rule 501 for any reason other than being a major source.
- e. Any stationary source with a valid Part 70 permit.

Notwithstanding subsections (b) and (d) above, nothing in this section shall prevent any stationary source which has had a Part 70 permit from qualifying to comply with this Rule in the future in lieu of maintaining an application for a Part 70 permit or upon rescission of a Part 70 permit if the owner or operator demonstrates that the stationary source is in compliance with the provisions of section (D)(2)(b) or (D)(2)(c), below.

4. **Exemption from Process Statement:** For the purpose of determining compliance with this Rule, the requirement in section 6.1 to submit a process statement shall not apply to stationary sources which emit less than 25,000 tons per year of CO₂e, in every 12-month period in the preceding 5 year period.

5. **Otherwise Applicable Requirements:** This Rule shall not relieve any stationary source from complying with requirements pertaining to any otherwise applicable preconstruction permit, or to replace a condition or term of any preconstruction permit, or any provision of a preconstruction permitting program. This does not preclude issuance of any preconstruction permit with conditions or terms necessary to ensure compliance with this Rule.

C. **DEFINITIONS:** The definitions provided under District Rules 101, 110, and 502 shall apply unless otherwise defined herein.

1. **12-month period:** A period of twelve consecutive months determined on a rolling basis with a new 12-month period beginning on the first day of each calendar month.

2. **Actual Emissions:** The emissions of the sum of greenhouse gases, expressed as CO₂e, from a stationary source for every 12-month period. Valid continuous emission monitoring data or source test data shall be preferentially used to determine actual emissions. In the absence of valid continuous emissions monitoring data or source test data, the basis for determining actual emissions shall be: throughputs of process materials; throughputs of materials stored; usage of materials; data provided in manufacturer's product specifications, material content reports or laboratory analyses; other information required by this Rule and applicable District, State and Federal regulations; or information requested in writing by the District. All calculations of actual emissions shall use methods, including emission factors and assumptions, specified or approved by EPA; where such methods are not available, the APCO may allow methods approved by CARB or other District-approved methods, including emission factors and assumptions.

3. **Alternative Operational Limit:** A limit on a measurable parameter, such as hours of operation, throughput of materials, use of materials, or quantity of product, as specified in Section (G), Alternative Operational Limit and Requirements.

4. **CO₂ Equivalent Emissions (CO₂e):** For the purposes of this rule, the sum of the adjusted emissions of each of the six individual greenhouse gases as defined in Section (C)(8), below, where the adjusted emissions for each individual greenhouse gas are equal to the mass emissions of that gas multiplied by the global warming potential of that gas, as listed in Table 2 in Section (I).

5. **Emission Unit:** Any article, machine, equipment, operation, contrivance or related groupings of such that may produce and/or emit any greenhouse gas.

6. **Federal Clean Air Act:** The federal Clean Air Act (CAA) as amended in 1990 (42 U.S.C. section 7401 et seq.) and its implementing regulations.

7. **Global Warming Potential (GWP):** The relative capacity of an individual greenhouse gas to cause a warming effect in the earth's atmosphere as compared to the capacity of CO₂ to cause such warming effect; for the purposes of this Rule, the global warming potential of a greenhouse gas shall be as listed in Table 2 of Section (I).

- 8. Greenhouse Gases (GHGs):** A gas that has the capacity to create a warming effect in the earth's atmosphere; for the purposes of this Rule: carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).
- 9. Major Source of GHG Emissions:** On or after July 1, 2011, a stationary source that emits or has the potential to emit greater than or equal to 100,000 tons per year of CO₂e, provided that the mass emissions of all GHGs emitted, without consideration of GWP, are equal to or greater than the following:
- a. 100 tons per year for a source in any category listed under Section (C)(10)(c); or
 - b. 250 tons per year for any other source.
- 10. Major Source for PSD:** A "major source" for PSD is as specified below:
- a. Major Source for PSD means:
 - i. Any of the stationary sources of air pollutants listed in Section (C)(10)(c), which emits or has the potential to emit, 100 tons per year or more of any regulated NSR pollutant;
 - ii. Notwithstanding the stationary source size specified in paragraph (1) above, any stationary source which emits, or has the potential to emit, 250 tons per year or more of a regulated NSR pollutant; or
 - iii. Any physical change that would occur at a stationary source not otherwise qualifying under paragraph A.1 or A.2 as a major stationary source, if the changes would constitute a major stationary source by itself.
 - b. A major source that is major for volatile organic compounds or NO_x shall be considered major for ozone.
 - c. The fugitive emissions of a stationary source shall not be included in determining for any of the purposes of this section whether it is a major stationary source, unless the source belongs to one of the following categories of stationary sources:
 - i. Coal cleaning plants (with thermal dryers);
 - ii. Kraft pulp mills;
 - iii. Portland cement plants;
 - iv. Primary zinc smelters;
 - v. Iron and steel mills;
 - vi. Primary aluminum ore reduction plants;
 - vii. Primary copper smelters;
 - viii. Municipal incinerators capable of charging more than 250 tons of refuse per day;
 - ix. Hydrofluoric, sulfuric, or nitric acid plants;
 - x. Petroleum refineries;
 - xi. Lime plants;
 - xii. Phosphate rock processing plants;
 - xiii. Coke oven batteries;
 - xiv. Sulfur recovery plants;
 - xv. Carbon black plants (furnace process);
 - xvi. Primary lead smelters;
 - xvii. Fuel conversion plants;
 - xviii. Sintering plants;
 - xix. Secondary metal production plants;
 - xx. Chemical process plants-The term chemical processing plant shall not include ethanol production facilities that produce ethanol by natural fermentation included in NAICS codes 325193 or 312140;

- xxi. Fossil-fuel boilers (or combination thereof) totaling more than 250 million British thermal units per hour heat input;
- xxii. Petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels;
- xxiii. Taconite ore processing plants;
- xxiv. Glass fiber processing plants;
- xxv. Charcoal production plants;
- xxvi. Fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, and
- xxvii. Any other stationary source category which, as of August 7, 1980, is being regulated under section 111 or 112 of the Act.

11. Part 70 Permit: An operating permit issued to a stationary source pursuant to an interim, partial or final Title V program approved by the U.S. EPA.

12. Potential to Emit: The maximum capacity of a stationary source to emit a regulated air pollutant based on its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation is federally or legally and practically enforceable.

13. Process Statement: An annual report on permitted emission units from an owner or operator of a stationary source certifying the following information, to the best of their knowledge: throughputs of process materials; throughputs of materials stored; usage of materials; fuel usage; any available continuous emissions monitoring data; hours of operation; and any other information required by this Rule or requested in writing by the District.

D. EMISSION LIMITATIONS:

1. New Sources: A new stationary source subject to this Rule shall comply with the requirements of District Rule 110, including implementation of BACT for GHG emissions, if either of the following thresholds is met:

- a. On or after January 2, 2011, the new stationary source is a major source under District Rule 110, and the new stationary source has the potential to emit greater than or equal to 75,000 tons per year of CO₂e, and the potential emissions of all GHGs emitted, without consideration of GWP, will be greater than or equal to 100 tons per year on a mass basis, for any source in a category listed under Section 3.10.C, or 250 tons per year on a mass basis for any other source ; or
- b. On or after July 1, 2011, either the provisions of Section (D)(1)(a) apply, or the new stationary source has the potential to emit GHGs greater than or equal to 100,000 tons per year of CO₂e, and the potential emissions of all GHGs emitted, without consideration of GWP, will be greater than or equal to 100 tons per year on a mass basis, for any source in a category listed under Section (C)(10)(c), or 250 tons per year on a mass basis for any other source.

2. Existing Sources: A stationary source subject to this Rule shall comply with the provisions of either section (a), section (b), or section (c), below.

- a. A stationary source shall comply with the requirements of District Rule 501, and shall include in its operating permit emissions of GHGs and all applicable GHG requirements, if either of the following thresholds is met:
 - i. On or after January 2, 2011, the stationary source is otherwise required to obtain a Part 70 permit pursuant to the requirements of District Rule 501; or
 - ii. On or after July 1, 2011, either the provisions of (D)(2)(a)(i) apply, or the stationary source is a “major source of GHG emissions”.
- b. A stationary source shall comply with the requirements of District Rule 501, and shall include in its operating permit limitations on emissions of GHGs to ensure the source is not a “major source of GHG emissions” if the conditions of section (D)(2)(a)(i) or section (D)(2)(a)(ii) applies.
- c. Unless the stationary source complies with the provisions of section (D)(2)(a) or (b), above, or the owner or operator has chosen to operate the stationary source under an alternative operational limit specified in Section (G)(1) below, no stationary source subject to this Rule shall emit more than 50,000 tons of CO₂e, in any 12-month period.

Calculations and other methods to determine applicability of, and compliance with the provisions of Section (D)(2) shall be as specified in District Rules 501 and 504.

3. Modifications to Existing Sources: Any modification to an existing stationary source subject to this Rule shall comply with the requirements of District Rule 110, and shall implement BACT for GHG emissions, if either of the following conditions apply:

- a. On or after January 2, 2011, the existing source, before modification, is a “major source for PSD”, and all of the following apply:
 - i. The emissions increase from the modification, and the net emissions increase from the facility are greater than or equal to 75,000 tons per year of CO₂e; and
 - ii. The emissions increase from the modification, and the net emissions increase from the facility, of all GHGs emitted, without consideration of GWP, will be greater than zero.
- b. On or after July 1, 2011, either the conditions in Section (D)(3)(a) apply, or all of the following apply:
 - i. The existing stationary source before modification is a “major source of GHG emissions”; and
 - ii. The emissions increase from the modification, and the net emissions increase from the facility are greater than or equal to 75,000 tons per year of CO₂e; and
 - iii. The emissions increase from the modification, and the net emissions increase from the facility, of all GHGs emitted, without consideration of GWP, will be greater than zero.
- c. On or after July 1, 2011, either the conditions in Section (D)(3)(a) or (D)(3)(b) apply, or all of the following apply:
 - i. The emissions increase from the modification, and the net emissions increase from the facility are greater than or equal to 100,000 tons per year of CO₂e; and
 - ii. The emissions increase from the modification, and the net emissions increase from the facility, of all GHGs emitted, without consideration of GWP, will be greater than or equal to 100 tons per year on a mass basis, for a source in any category listed in Appendix B, or 250 tons per year on a mass basis for any other source.
- d. Calculations and other methods to determine applicability of, and compliance with the provisions of Section (D)(3) shall be as specified in District Rule 110.

4. Evaluation: The APCO shall evaluate a stationary source's compliance with the emission limitations in section (D)(2)(c), above as part of the District's annual permit renewal process required by H&SC

42301(e). In performing the evaluation, the APCO shall consider any annual process statement submitted pursuant to Section 6.0, Reporting Requirements. In the absence of valid continuous emission monitoring data or source test data, actual and projected emissions shall be calculated using emissions factors approved by the U.S. EPA; where such factors are not available, the APCO may allow factors approved by CARB, or other District-approved factors.

5. Permit Applications: An application for a permit for a stationary source pursuant to sections (D)(1) or (D)(2)(a) or (D)(2)(b) shall include the following information:

- a. An application submitted pursuant to Section (D)(1) shall, in addition to the information specified in District Rule 110, include sufficient information about greenhouse gas emissions from the modified emission units for the District to determine all applicable requirements, including the net emissions increase of GHG emissions from the project, and a BACT analysis, if required.
- b. An application submitted pursuant to section (D)(2)(a) shall, in addition to the information specified in District Rule 502, include sufficient information about greenhouse gas emissions from all emission units for the District to determine all applicable requirements.
- c. An application submitted pursuant to section (D)(2)(b) shall, in addition to the information specified in District Rule 502 include sufficient information about greenhouse gas emissions from all emission units for the District to determine all applicable requirements.
- d. Recordkeeping The owner or operator of a stationary source subject to this Rule shall comply with applicable recordkeeping requirements in this section. However, for a stationary source operating under an alternative operational limit, the owner or operator shall instead comply with the applicable recordkeeping and reporting requirements specified in Section (G), Alternative Operational Limit and Requirements. The recordkeeping requirements of this Rule shall not replace any recordkeeping requirement contained in an operating permit or in a District, State, or federal rule or regulation.

6. Exceeding De Minimis Emissions: A stationary source previously covered by the provisions in section (B)(3)(a) above shall comply with the applicable provisions of Section (E) above and Sections (F) and (G) below if the stationary source emissions exceed the limit specified in section (B)(2).

E. REQUIRED RECORDS: The owner or operator of a stationary source subject to this Rule shall keep and maintain records for each permitted emission unit or groups of permitted emission units sufficient to determine actual emissions. Such information shall be summarized in a monthly log, maintained on site for five years, and be made available to District, CARB, or EPA staff upon request.

1. Combustion Emission Unit: The owner or operator of a stationary source subject to this Rule that contains a combustion emission unit shall keep and maintain the following records:

- a. Information on equipment type, make and model, maximum design process rate or maximum power input/output, minimum operating temperature (for thermal oxidizers) and capacity, control device(s) type and description (if any) and all source test information; and
- b. A monthly log of hours of operation, fuel type, fuel usage, fuel heating value (for non-fossil fuels; in terms of BTU/lb or BTU/gal), percent sulfur for fuel oil and coal, and percent nitrogen for coal.

2. Emission Control Unit: The owner or operator of a stationary source subject to this Rule that contains an emission control unit shall keep and maintain the following records:

- a. Information on equipment type and description, make and model, and emission units served by the control unit;

- b. Information on equipment design including where applicable: pollutant(s) controlled; control effectiveness; maximum design or rated capacity; inlet and outlet temperatures, and concentrations for each pollutant controlled; all parametric data necessary to verify operation, maintenance, and performance of the device; other design data as appropriate; all source test information; and
 - c. A monthly log of hours of operation including notation of any control equipment breakdowns, upsets, repairs, maintenance and any other deviations from design parameters.
- 3. General Emission Unit:** The owner or operator of a stationary source subject to this Rule that contains an emission unit not included in subsections A or B above shall keep and maintain the following records:
- a. Information on the process and equipment including the following: equipment type, description, make and model; maximum design process rate or throughput; control device(s) type and description (if any);
 - b. Any additional information requested in writing by the APCO;
 - c. A monthly log of operating hours, each raw material used and its amount, each product produced and its production rate; and
 - d. Purchase orders, invoices, and other documents to support information in the monthly log.

F. REPORTING REQUIREMENTS:

- 1. Process Statement** At the time of annual renewal of a permit to operate under District Rule 102, each owner or operator of a stationary source subject to this rule shall submit to the District a process statement for all equipment and processes related to emissions of GHGs. The statement shall be signed by the owner or operator and certify that the information provided is accurate and true.
- 2. Loss of Exemption** A stationary source previously covered by provisions in Section (B)(4) above shall comply with the provisions of section (F)(1) above if the stationary source exceeds the quantities specified in section (B)(4).
- 3. Deadline to Submit** Any additional information requested by the APCO under Section (F)(1) above shall be submitted to the APCO within 30 days of the date of request.

G. ALTERNATIVE OPERATIONAL LIMIT AND REQUIREMENTS: The owner or operator may operate the permitted emission units at a stationary source subject to this rule under any one alternative operational limit, provided that at least 90 percent of the stationary source's emissions in every 12-month period are associated with the permitted emission units limited by the alternative operational limit.

- 1. Alternative Requirements:** Upon choosing to operate a stationary source subject to this Rule under any one alternative operational limit, the owner or operator shall operate the stationary source in compliance with the alternative operational limit and comply with the specified recordkeeping and reporting requirements.
 - a. The owner or operator shall report within 24 hours to the APCO any exceedance of the alternative operational limit.

- b. The owner or operator shall maintain all purchase orders, invoices, and other documents to support information required to be maintained in a monthly log. Records required under this section shall be maintained on site for five years and be made available to District or EPA staff upon request.
- c. Boilers: The owner or operator shall operate the boiler(s) in compliance with the following requirements:
 - i. The boiler shall not use more than (X quantity) of fuel in every 12-month period, or the boiler shall not operate more than (Y hours) in every 12 month period where X and Y are determined by the fuel burned, and Y is also dependent on the total Btu/hr rating of the boiler, as shown in Table-1, below:

Table 1 – Annual Capacity Limits				
Boiler Fuel	Annual Fuel Use Cap	MMBtu/hr with 7,000 hr. cap	MMBtu/hr with 6,000 hr. cap	MMBtu/hr with 5,000 hr. cap
Natural Gas	13,000,000 Therms	190	≤220	≤260
LPG and Propane	11,700,000 gal	160	≤185	≤220
Oils: No.2, No.6, Crude	6,000,000 gal	140	≤160	≤180
Tires	31,000 tons	110	≤130	≤150
MSW	65,000 tons	110	≤130	≤150
Wood	67,000 tons	105	≤120	≤140
Pet Coke	24,000 tons	100	≤115	≤130
Ag Byproducts	38,000 tons	85	≤100	≤115

- ii. A monthly log of hours of operation, (quantity) of fuel used, and a monthly calculation of the total hours operated and (quantity) of fuel used in the previous 12 months shall be kept on site.
 - iii. A copy of the monthly log shall be submitted to the APCO at the time of annual permit renewal. The owner or operator shall certify that the log is accurate and true.
- 2. Exceeding Alternative Operating Limits:** The owner or operator of a stationary source subject to this rule shall obtain any necessary permits prior to commencing any physical or operational change or activity which will result in an exceedance of an applicable operational limit specified in Section (F)(1) above.

H. VIOLATIONS

1. **Failure to Comply:** Failure to comply with any of the applicable provisions of this Rule shall constitute a violation of this Rule, and shall be subject to penalties pursuant to District Rules and Regulations, and/or the provisions of the District's mutual settlement policy as determined by the APCO. Each day during which a violation of this Rule occurs is a separate offense.
2. **Applicable Federal Requirements:** In addition to penalties assessed pursuant to Section (H)(1), a stationary source which violates the provisions of (D)(2)(c), or which cannot demonstrate compliance with those provisions, shall be immediately subject to the provisions of District Regulation V and must submit an application for a permit pursuant to that Regulation within 12 months of the first day on which the source failed to show compliance. Failure to submit a required application shall be a separate offense from failing to comply with the limits in this rule, and each day during which the required application has not been submitted is a separate offense.

- I. **GLOBAL WARMING POTENTIAL:** For purposes of compliance with this Rule, the Global Warming Potential values listed in Table 2 shall be used.

Table 2 - Affected Greenhouse Gases Pollutants and Their Global Warming Potentials			
GHG Name	GWP	GHG Name	GWP
CO2	1	HFE-43-10pccc (H-Galden 1040x)	1,870
CH4	21	HFE-125	14,900
N2O	310	HFE-134	6,320
HFC-23	11,700	HFE-143a	756
HFC-32	650	HFE-227ea	1,540
HFC-41	150	HFE-236ca12 (HG-10)	2,800
HFC-125	2,800	HFE-236ea2 (Desflurane)	989
HFC-134	1,000	HFE-236fa	487
HFC-134a	1,300	HFE-245cb2	708
HFC-143	300	HFE-245fa1	286
HFC-143a	3,800	HFE-245fa2	659
HFC-152	53	HFE-254cb2	359
HFC-152a	140	HFE-263fb2	11
HFC-161	12	HFE-329mcc2	919
HFC-227ea	2,900	HFE-338mcf2	552
HFC-236cb	1,340	HFE-338pcc13 (HG-01)	1,500
HFC-236ea	1,370	HFE-338mmz1	380
HFC-236fa	6,300	HFE-347mcc3	575
HFC-245ca	560	HFE-347mcf2	374
HFC-245fa	1,030	HFE-347pcf2	580
HFC-365mfc	794	HFE-347mmy1	343
HFC-4310mee	1,300	HFE-356mec3	101
Nitrogen trifluoride	17,200	HFE-356pcc3	110
Sulfur hexafluoride	23,900	HFE-356pcf2	265
Trifluoromethyl sulphur pentafluoride	17,700	HFE-356pcf3	502
PFC-14 (Perfluoromethane)	6,500	HFE-356mm1	27
PFC-116 (Perfluoroethane)	9,200	HFE-365mcf3	11
PFC-218 (Perfluoropropane)	7,000	HFE-374pc2	557
PFC-3-1-10 (Perfluorobutane)	7,000	HFE-449sl (HFE-7100) Chemical Blend	297
PFC-4-1-12 (Perfluoropentane)	7,500	HFE-569sf2 (HFE-7200) Chemical Blend	59
PFC-5-1-14 (Perfluorohexane)	7,400	Sevoflurane	345
Perfluorocyclopropane	17,340	(Octafluorotetramethylene) hydroxymethyl grp	73
Perfluorocyclobutane	8,700	Bis(trifluoromethyl)-methanol	195
PFC-9-1-18	7,500	2,2,3,3,3-pentafluoropropanol	42
HCFE-235da2 (Isoflurane)	350	PFPME	10,300