

SUBPART Q: STATIONARY TURBINES AND RECIPROCATING INTERNAL
COMBUSTION ENGINES

Section 217.386 Applicability

- a) Any owner or operator of a reciprocating internal combustion engine or turbine that meets the criteria in subsection (a)(1) or (a)(2) of this Section is subject to the requirements of this Subpart, unless the emission unit is exempt from the control requirements of this Subpart pursuant to the criteria in subsection (b) of this Section.
 - 1) The engine is rated at equal to or greater than 500 bhp output; or
 - 2) The turbine is rated at equal to or greater than 3.5 MW(4,694 bhp) output.

- b) Exemptions:
 - 1) Except for the requirement to maintain records pursuant to Sections 217.392(c) and 217.398(b) and (c) of this Subpart, an owner or operator of an engine is exempt from the requirements of this Subpart if the engine is rated at less than or equal to 1500 bhp output, and operates less than 500 hours per year on a 12-month rolling average.

 - 2) Except for the requirement to submit a certification of exemption pursuant to Section 217.392(b) of this Subpart, an owner or operator of an engine or turbine is exempt from the requirements of this Subpart if the engine or turbine is:
 - A) Used as an emergency standby unit;
 - B) Used for research or for the purposes of performance verification or testing;
 - C) Regulated under Subpart W of this Part;
 - D) Used to control emissions from landfills, where at least 50 percent of the heat input is gas collected from a landfill;
 - E) Less than 1500 bhp (1118 kW) output, is mounted on a chassis or skids and is designed to be moveable, and moves to a different source at least once every 12 months;
 - F) Used for agricultural purposes including the raising of crops or livestock that are produced on site, but not associated businesses like packing operations, sale of equipment or repair; or

- G) Located at a source where the potential to emit (PTE) is no more than 100 TPY NO_x from all engines and turbines that are not otherwise exempt pursuant to subsections (b)(1), (b)(2)(A), (b)(2)(B), (b)(2)(C), (b)(2)(D), (b)(2)(E), or (b)(2)(F) of this Section and the NO_x PTE limit is contained in a federally enforceable permit.
- c) Loss of exemption: An owner or operator who claims that an emission unit is exempt pursuant to an exemption specified in subsection (b) of this Section shall notify the Agency within 30 days after he becomes aware that the exemption no longer applies. The owner or operator shall comply immediately with the requirements of this Subpart.
- d) The requirements of this Subpart shall continue to apply to any engine or turbine that has ever been subject to the control limits of Section 217.388 of this Subpart, even if the owner or operator subsequently modifies or changes the use of any unit in such a way as to make the unit eligible for an exemption pursuant to subsection (b) of this Section.

Section 217.388 Control and Maintenance Requirements

On and after the compliance date specified in Section 217.392 of this Subpart, an owner or operator of an engine or turbine subject to the requirements of this Subpart pursuant to Section 217.386(a) of this Subpart:

- a) Shall not operate it in such a manner that the discharge from the emission unit into the atmosphere of any gases that contain NO_x is in excess of:
 - 1) For engines:
 - A) 150 ppmv (corrected to 15 percent O₂ on a dry basis) for spark-ignited rich-burn;
 - B) 210 ppmv (corrected to 15 percent O₂ on a dry basis) for spark-ignited lean-burn; and
 - C) 660 ppmv (corrected to 15 percent O₂ on a dry basis) for diesel.
 - 2) For turbines:
 - A) 42 ppmv (corrected to 15 percent O₂ on a dry basis) for gas-fired; and
 - B) 96 ppmv (corrected to 15 percent O₂ on a dry basis) for liquid-fired.

- b) Shall inspect and perform periodic maintenance on the affected unit or units, in accordance with a Maintenance Plan that documents the manufacturer's recommended inspection and maintenance of the applicable air pollution control equipment and affected emission units. If the original equipment manual is not available, the plan for inspection and maintenance shall be done in accordance with what is customary for this type of air pollution control equipment and emission unit.

Section 217.390 **Averaging Plans (This a place holder, a more specific methodology may be added.)**

- a) Notwithstanding Section 217.388(a) of this Subpart, an owner or operator may comply by averaging the emissions of affected units that commenced operation on or before January 1, 2002, unless the unit is a replacement unit, in which case such a unit may be included if it commenced operation after January 1, 2002.
- b) Compliance shall be determined on both an ozone season (May 1 through September 30) and on a calendar year (January 1 to December 31) basis. For the affected units included in the averaging plan, the total mass of actual NO_x emissions, based on monitoring data or test results, whichever is most the recent, must be less than or equal to the total mass of allowable NO_x emissions for both the ozone season and the calendar year, based on the concentration levels specified in Section 217.388(a) of this Subpart.
- c) An owner or operator must submit an emissions averaging plan to the Agency by the applicable compliance date. All engines or turbines included in the emissions averaging plan must be owned and operated by the same owner or operator. An affected unit may be included in only one averaging plan. The plan shall include, but is not limited to:
 - 1) The list of engines or turbines included in the plan by unit identification number and permit number;
 - 2) The methodology for determining that the actual mass of NO_x emissions is less than the allowable mass of NO_x emissions for both the ozone season and the calendar year; and
 - 3) A sample calculation demonstrating compliance using the methodology for both the ozone season and calendar year and .
- d) An averaging plan may be amended once per calendar year. Such an amended plan must be submitted to the Agency by May 1 of the applicable calendar year. If an amended plan is not received by the Agency by May 1 of the applicable calendar year, the previous year's plan will be the applicable emissions averaging plan. Notwithstanding subsection (e) of this Section, if an engine or turbine that is included in an averaging plan is sold or taken out of service, updated emissions

averaging plans must be submitted within 60 days to the Agency by both the seller and the buyer of the affected unit.

- e) An owner or operator must determine compliance using the methodology submitted in the most recent emissions averaging plan for the ozone season by October 30 following each ozone period, and by January 30 following each calendar year using the monitoring data or test results, whichever is most recent. If the owner or operator cannot demonstrate compliance for the ozone season, they must notify the Agency by October 30 of that calendar year. By January 30, the owner or operator must submit a compliance report to the Agency containing the information required by Section 217.398(d)(4) of this Subpart.

Section 217.392 Compliance

- a) Compliance dates:
 - 1) On and after May 1, 2007, an owner or operator of an affected engine listed in Appendix G of this Part shall not operate the emission unit unless he meets the requirements of this Subpart or submits a certification of exemption pursuant to subsection (b) of this Section or complies with subsection (c) of this Section.
 - 2) On and after January 1, 2009, an owner or operator of any affected engine or turbine not listed in Appendix G of this Part shall not operate the emission unit unless he meets the requirements of this Subpart or submits a certification of exemption pursuant to subsection (b) of this Section or complies with subsection (c) of this Section.
- b) Certification of exemption:
 - 1) Owners or operators of engines or turbines that commenced operation before May 1, 2007, and that are claiming an exemption pursuant to the provisions in Section 217.386(b)(2) of this Subpart are not required to comply with any other requirements of this Subpart except for submitting a certification of exemption by the applicable compliance date, that includes documentation for the exemption being claimed.
 - 2) Owners or operators of affected engines or turbines that commence operation on or after May 1, 2007, and that are claiming an exemption pursuant to the provisions of Section 217.386(b)(2) of this Subpart are not required to comply with any other requirements of this Subpart except for submitting a certification of exemption with their application for a construction permit that includes documentation for the exemption being claimed.
- c) Owners or operators of engines or turbines claiming an exemption pursuant to

Section 217.386(b)(1) of this Subpart are not required to comply with any other requirements of this Subpart except for complying with the recordkeeping requirements of Sections 217.396(b) and (c) of this Subpart.

Section 217.394 Testing and Monitoring

Any owner or operator of an engine or a turbine subject to the control limits of Section 217.388 or Section 217.390 of this Subpart shall comply with the following requirements:

- a) Compliance Testing: The owner or operator shall conduct compliance tests demonstrating that the emission unit complies with the applicable concentration specified in Section 217.388 or Section 217.390 of this Subpart, as specified by the requirements in subsection (a)(1) or (a)(2) of this Section. For engines listed in Appendix G of this Part, an initial compliance test must be performed by May 1, 2007. For all other affected units, an initial compliance test must be performed by the later of January 1, 2009, or within 180 days after initial startup. In addition, all affected units must be tested once every five years thereafter. The five-year test must be completed by May 1 of the applicable calendar year.
 - 1) For an engine: conduct a compliance performance test consistent with the requirements of 40 CFR part 60, Appendix A, Method 7 or 7E, as incorporated by reference in Section 217.104 of this Part, where a test shall consist of three separate runs, each lasting a minimum of 60 minutes. NO_x emissions shall be measured while the emission unit is operating at peak load. If the engine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel.
 - 2) For a turbine: conduct a compliance test consistent with the requirements of Section 217.396 of this Subpart.
- b) Monitoring: The owner or operator shall conduct monitoring to determine if NO_x emissions are compliant with the applicable concentration specified in Section 217.388 or Section 217.390 of this Subpart, as follows:
 - 1) Monitoring with portable monitors using ASTM D6522-00, as incorporated by reference in Section 217.104 of this Part, shall be performed annually between January 1 and May 1, except for those years in which a compliance test is conducted pursuant to subsection (a) of this Section. If the engine or turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel.
 - 2) NO_x concentrations shall be evaluated three times while the emission unit is operating at representative maximum emissions for a duration of at least 20 minutes. The emissions from the three runs shall be averaged to determine compliance.

- 3) If the monitor data shows that the unit or units is not in compliance with the applicable emission limit or averaging plan, the owner or operator must report the deviation to the Agency within 30 days and conduct a compliance test pursuant to subsection (a) of this Section within 90 days of the determination of noncompliance.
- c) Other Tests: When in the opinion of the Agency or USEPA it is necessary to conduct testing to demonstrate compliance with Section 217.388 or Section 217.390 of this Subpart, the owner or operator of an engine or turbine subject to the requirements of this Subpart shall, at his own expense, conduct such test in accordance with the applicable test methods and procedures specified in this Section.

Section 217.396 Specifications for Testing Turbines

- a) Performance Tests: Owners or operators of turbines must conduct performance tests, as required in 40 CFR Section 60.8, as incorporated by reference in Section 217.104 of this Part, as follows:
 - 1) For each test run, measure the NO_x and O₂ concentrations, using either Methods 7E and 3A, or Method 20 in 40 CFR 60, Appendix A, or ASTM Method D6522-00, as incorporated by reference in Section 217.104 of this Part.
 - 2) Select sampling traverse points for NO_x and O₂ gas by following Method 20 or Method 1 (non-particulate procedures) of 40 CFR 60 Appendix A, as incorporated by reference in Section 217.104 of this Part, and sample for equal time intervals. The sampling must be performed with a traversing single-hole probe, or, if feasible, with a stationary multi-hole probe that samples each of the points sequentially. Alternatively, a multi-hole probe designed and documented to sample equal volumes from each hole may be used to sample simultaneously at the required points.
 - 3) Notwithstanding the requirements in subsection (a)(2) of this Section, testing may be done at fewer points than are specified in Method 1 or Method 20 if the following conditions are met:
 - A) Performance of a stratification test for NO_x and O₂ pursuant to the procedures specified in section 6.5.6.1(a) through (e) of 40 CFR 75, Appendix A, as incorporated by reference in Section 217.104 of this Part.
 - B) Once the stratification sampling is completed, use one of the following alternative sample point selection criteria for the performance test:

- i) If each of the individual traverse point NO_x and O₂ concentrations is within +/-10 percent of the mean concentration for all traverse points, then three points (located either 16.7, 50.0 and 83.3 percent of the way across the stack or duct, or, for circular stacks or ducts greater than 2.4 meters (7.8 feet) in diameter, at 0.4, 1.2, and 2.0 meters from the wall) may be used. The three points must be located along the measurement line that exhibited the highest average NO_x concentration during the stratification test.
 - ii) If each of the individual traverse point NO_x and O₂ concentrations is within +/-5 percent of the mean concentration for all traverse points, then sampling at a single point, located at least 1 meter from the stack wall or at the stack centroid, may be done.
- b) The performance test must be done at peak load level. Testing at the highest achievable load point may be performed, if 90 to 100 percent of peak load cannot be achieved in practice. Three test runs are required. The minimum time per run is 20 minutes. In addition, as applicable, the test must include the following:
 - 1) If the stationary combustion turbine combusts both oil and gas as primary or backup fuels, separate performance testing is required for each fuel.
 - 2) For a combined cycle turbine system with supplemental heat (duct burner), the total NO_x emissions after the duct burner rather than directly after the turbine must be measured.
 - 3) If water or steam injection is used to control NO_x with no additional post-combustion NO_x control and either the steam or water to fuel ratio is monitored, then that monitoring system must be operated concurrently with each Method 20, ASTM D6522-00, or Method 7E and 3A run, as incorporated by reference in Section 217.104 of this Part, and must be used to determine the fuel consumption and the steam or water to fuel ratio necessary to comply with the concentration contained in Section 217.388(a)(2) or Section 217.390 of this Subpart.
 - 4) Compliance with the concentration contained in Section 217.388(a)(2) or Section 217.390 of this Subpart must be demonstrated at each tested load level. Compliance is achieved if the three-run arithmetic average NO_x emission at the tested level meets the applicable emission limit.

Section 217.398 Recordkeeping and Reporting

- a) Any owner or operator of an engine or turbine subject to the control limits of

Section 217.388 of this Subpart must maintain records that demonstrate compliance with the requirements of this Subpart which include, but are not limited to:

- 1) Identification, type (e.g., lean-burn, gas-fired), and location of each engine or turbine subject to the requirements of this Section;
 - 2) Calendar date of record;
 - 3) The number of hours the emission unit operated on a monthly basis, on a rolling 12-month basis, and during each ozone season;
 - 4) Type and quantity of fuel used;
 - 5) The results of all monitoring performed on an affected emission unit and reported deviations;
 - 6) The results of all tests performed on an affected emission unit;
 - 7) A plan for performing the manufacturer's recommended inspection and maintenance of the affected emission units and air pollution control equipment. If the original equipment manual is not available, the plan for inspection and maintenance shall be in accordance with what is customary for this type of air pollution control equipment and emission unit;
 - 8) A log of all inspections and maintenance performed on the affected emission unit and air pollution control device. Such records shall include, at a minimum, date, load levels and any manual adjustments along with the reason for the adjustment (e.g., air to fuel ratio, timing or other settings): and
 - 9) If complying through an emissions averaging plan, copies of the calculations used to demonstrate compliance with the ozone season and annual control period limits, noncompliance reports for the ozone season, and ozone and annual control period compliance reports submitted.
- b) Any owner or operator of an engine or turbine claiming an exemption pursuant to Section 217.386(b)(1) of this Subpart must maintain a log of its hours of operation monthly and on a rolling 12-month basis.
- c) Any owner or operator of an engine or turbine shall maintain the records required by subsections (a) and (b) of this Section for a period of 5 years at the source at which the affected engine or turbine is located. The records shall be made available to the Agency and USEPA upon request.
- d) Reporting requirements: Any owner or operator subject to the requirements of

this Subpart shall:

- 1) Pursuant to the requirements for testing in Section 217.394(a) of this Subpart:
 - A) Notify the Agency in writing 30 days and 5 days prior to testing. If after the 30-days notice for an initially scheduled test is sent, there is a delay (e.g., due to operational problems) in conducting the performance test as scheduled, the owner or operator of an affected unit shall notify the Agency as soon as possible of the delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a new test date with the Agency by mutual agreement;
 - B) Provide a testing protocol to the Agency 60 days prior to testing; and
 - C) Not later than 30 days after the completion of the performance test, submit the results of such test to the Agency.
- 2) Pursuant to the requirements for monitoring in Section 217.394(b) of this Subpart, any owner or operator of an affected engine or turbine shall report to the Agency any monitored exceedances of the applicable NO_x concentration within 30 days of the performing the monitoring.
- 3) Within 90 days of shutting down an affected engine or turbine, an owner or operator of such unit shall withdraw or amend the applicable permit to reflect that the unit is no longer in service.
- 4) If demonstrating compliance through an emissions averaging plan, by January 30 following the applicable calendar year, submit to the Agency a report that demonstrates the following:
 - A) For all engines and turbines that are part of the emissions averaging plan, the total mass of allowable NO_x emissions for the ozone season and for the annual control period;
 - B) The total mass of actual NO_x emissions for the ozone season and annual control period for each engine or turbine included in the averaging plan;
 - C) The calculations that demonstrate that the total mass of actual NO_x emissions are less than the total mass of allowable NO_x emissions using the methodology that was submitted as part of the applicable emissions averaging plan; and

- D) The information required to determine the total mass of actual NO_x emissions and the calculations performed in subsection (d)(4)(C) of this Section.

APPENDIX G: LARGE EXISTING RECIPROCATING INTERNAL COMBUSTION
ENGINES

Plant ID	Point ID	Segment
ANR Pipeline Co. – Sandwich		
093802AAF	E-108	1
Natural Gas Pipeline Co. of America 8310		
027807AAC	730103540041	1
Natural Gas Pipeline Co. of America Sta 110		
073816AAA	851000140011	1
073816AAA	851000140012	2
073816AAA	851000140013	3
073816AAA	851000140014	4
073816AAA	851000140041	1
073816AAA	851000140051	1
Northern Illinois Gas Co. - Stor Stat 359		
113817AAA	730105440021	1
113817AAA	730105440031	1
113821AAA	730105430021	1
113821AAA	730105430051	1
Panhandle Eastern Pipe Line Co.-Glenarm		
167801AAA	87090038002	1
167801AAA	87090038004	1
167801AAA	87090038005	1
Panhandle Eastern Pipeline - Tuscola St		
041804AAC	73010573009	9
041804AAC	73010573010	10
041804AAC	73010573011	11
041804AAC	73010573012	12
041804AAC	73010573013	13
Panhandle Eastern Pipeline Co.		
149820AAB	7301057199G	3
149820AAB	7301057199I	1
149820AAB	7301057199J	1

149820AAB	7301057199K	1
Panhandle Eastern Pipeline Co.-Glenarm		
167801AAA	87090038001	1
Phoenix Chemical Co.		
085809AAA	730700330101	1
085809AAA	730700330102	2
085809AAA	730700330103	3