Section 22a-174-22f. High daily NOx emitting units at non-major sources of NOx.

(a) Definitions.

"Affected unit" means a fossil fuel-fired:

(A) Stationary source that serves a generator with a nameplate capacity of 15 MW or more; or

(B) Boiler or indirect heat exchanger with a maximum heat input capacity of 250 MMBtu/hr or more.

"Boiler serving an electric generating unit" or "boiler serving an EGU" means a steam generating unit used for generating electricity.

"Combined cycle combustion turbine" means an internal combustion engine fueled by liquid or gaseous fuel, in which blades are driven by combustion gases to generate mechanical energy in the form of a rotating shaft that drives an electric generator, that recovers heat from the turbine exhaust gases to generate steam which drives a steam turbine that drives an additional electric generator.

"Combined heat and power" means a steam-generating unit that simultaneously produces both electric power and useful thermal energy from the same primary energy source.

"Electric generating unit" or "EGU" means a combustion or steam generating source used for generating electricity that delivers all or part of its power to the electric power distribution grid for commercial sale.

"Electricity supplier" means "electric supplier" as defined in section 16-1(a)(30) of the Connecticut General Statutes, and "municipal electric utility" as defined in section 7-233b(8) of the Connecticut General Statutes.

"Emergency" means "emergency" as defined in section 22a-174-22e of the Regulations of Connecticut State Agencies.

"Emergency engine" means "emergency engine" as defined in section 22a-174-22e of the Regulations of Connecticut State Agencies.

"Gas" or "gaseous fuel" means natural gas, propane, or any other fuel that is in the gaseous state under standard conditions, except for landfill gas or digester gas.

"Industrial/commercial/institutional boiler" or "ICI boiler" means an indirect heat exchanger that heats water to supply heat to an industrial, commercial, or institutional operation, including a combined heat and power unit, but not including a boiler serving an EGU, combined cycle combustion turbine, or reciprocating engine.

"Other oil" means a fuel that is liquid at standard conditions and is not residual oil.

“Ozone forecast” means the eight-hour ozone forecast issued as an air quality index one or more days in advance by the commissioner and posted on the Department’s website or otherwise provided by the Department for the regulated community.

“Reciprocating engine” means an internal combustion engine in which a rotating crankshaft is driven by reciprocating motion of piston or pistons, including a combined heat and power unit.

“RCSA” means Regulations of Connecticut State Agencies.

“Simple cycle combustion turbine” means an internal combustion engine fueled by liquid or gaseous fuel, in which blades are driven by combustion gases to generate mechanical energy in the form of a rotating shaft that drives an electric generator or other industrial equipment, that does not recover heat from its exhaust gases.

“Solid fuel” means coal, other solid fossil fuel, wood or other solid biomass.

“Tune-up” means adjustments made to an emission unit to improve efficiency with respect to combustion operations.

(b) Applicability.

(1) This section applies to the owner or operator of a boiler serving an EGU or an ICI boiler that meets any one of the following criteria:

(A) The boiler is gas-fired and has a maximum rated capacity:

(i) Greater than 76 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 38 MMBtu/hr and is located in a severe non-attainment area for ozone;

(B) The boiler is residual oil-fired and has a maximum rated capacity:

(i) Greater than 30 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 15 MMBtu/hr and is located in a severe non-attainment area for ozone;

(C) The boiler is other oil-fired and has a maximum rated capacity:

(i) Greater than 72 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 36 MMBtu/hr and is located in a severe non-attainment area for ozone; or

(D) The boiler is solid fuel-fired and has a maximum rated capacity:

(i) Greater than 6 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 3 MMBtu/hr and is located in a severe non-attainment area for ozone.

(2) This section applies to the owner or operator of a reciprocating engine that meets any one of the following criteria:

(A) The engine is gas-fired and has a maximum rated capacity:

(i) Greater than 4 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 2 MMBtu/hr and is located in a severe non-attainment area for ozone; or

(B) The engine is other oil-fired and has a maximum rated capacity:

(i) Greater than 2 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 1 MMBtu/hr and is located in a severe non-attainment area for ozone.

(3) This section applies to the owner or operator of a simple-cycle combustion turbine that meets any one of the following criteria:

(A) The turbine is gas-fired and has a maximum rated capacity:

(i) Greater than 32 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 16 MMBtu/hr and is located in a severe non-attainment area for ozone; or

(B) The turbine is other oil-fired and has a maximum rated capacity:

(i) Greater than 12 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 6 MMBtu/hr and is located in a severe non-attainment area for ozone.

(4) This section applies to the owner or operator of a combined cycle combustion turbine that meets any one of the following criteria:

(A) The turbine is gas-fired and has a maximum rated capacity:

(i) Greater than 32 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 16 MMBtu/hr and is located in a severe non-attainment area for ozone;

(B) The turbine is other oil-fired and has a maximum rated capacity:

(i) Greater than 12 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 6 MMBtu/hr and is located in a severe non-attainment area for ozone; and

(C) When determining the maximum rated capacity of a combined cycle combustion turbine, the owner or operator shall include the maximum capacity of all supplemental burners.

(5) This section applies to the owner or operator of a fuel-burning emission unit that combusts fuel for heating materials including air if any one of the following criteria are met:

(A) The emission unit is gas-fired and has a maximum rated capacity:

(i) Greater than 76 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 38 MMBtu/hr and is located in a severe non-attainment area for ozone; or

(B) The emission unit is other oil-fired and has a maximum rated capacity:

(i) Greater than 72 MMBtu/hr and is located in a serious non-attainment area for ozone, or

(ii) Greater than 36 MMBtu/hr and is located in a severe non-attainment area for ozone.

(6) This section applies to any affected unit located at a source that is not a major source of NOx.

(7) If a dual-fuel unit is subject to this section for one fuel based on subdivisions (1) through (5) of this subsection, the emission unit is subject to this section for all operations.

(c) Exemptions.

(1) The following emission units are exempt from this section:

(A) An emission unit that is located at a major source of NOx;

(B) An emission unit that is a type of incinerator for which an emissions guideline has been issued under Section 129 of the Act;

(C) An emission unit used to test and provide emergency power or alternative power for safety-related structures, systems, and components or other Nuclear Regulatory Commission mandated systems at an electric generating facility licensed under 10 CFR 50;

(D) An emission unit that is located at a hospital or health care facility and that is used to meet standards of The Joint Commission or the National Fire Protection Association for emergency electrical power systems; or

(E) A reciprocating engine operated by an EAS Participant, as defined in 47 CFR 11.2, to meet the equipment operational readiness requirements of 47 CFR 11.35.

(2) The exemptions provided in subparagraphs (C), (D) and (E) of subdivision (1) of this subsection are not available to the owner or operator of either:

(A) A reciprocating engine or simple cycle combustion turbine for which the owner or operator is party to an agreement to sell electrical power from such reciprocating engine or combustion turbine to an electricity supplier; or

(B) A reciprocating engine or simple-cycle combustion turbine for which the owner or operator receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.

(3) The owner or operator of an emission unit that is operating in accordance with RCSA section 22a-174-22e pursuant to subsection (e)(2) of this section shall no longer be subject to the requirements of subsections (f), (g) and (h) of this section.

(d) Emergency engines.

(1) The owner or operator of an emergency engine subject to this section shall maintain records as required by subsection (g) of this section and comply with subdivisions (2) and (3) of this subsection. No other provisions of this section apply to the owner or operator of an emergency engine.

(2) The owner or operator of an emergency engine shall not operate the emergency engine for routine, scheduled testing or maintenance on any day for which the commissioner has forecast that ozone levels will be “moderate to unhealthy for sensitive groups” or greater. If, subsequent to the initial forecast of “moderate to unhealthy for sensitive groups” or greater, the forecast is revised to “moderate” or lower, the owner or operator is no longer prohibited from operating the engine for routine, scheduled testing or maintenance for the remainder of that day. An owner or operator of an emergency engine may rely on an ozone forecast of “moderate” or lower obtained after 3 PM on the preceding day. Subsequent changes to the ozone forecast after 3PM that forecast ozone levels of “moderate to unhealthy for sensitive groups” or greater shall not obligate the owner or operator to refrain from operation of the emergency engine at the facility on the following day. The commissioner may exempt, by permit or order, the owner or

operator of an emergency engine from this subdivision if such emergency engine is unattended and the testing is automated and cannot be modified from a remote location.

(3) If an owner or operator is required to operate a model year 2013 or later emergency engine in compliance with the Tier 4 engine NOx emission standards of 40 CFR 1039, subpart B, such engine is exempt from the restriction of subdivision (2) of this subsection.

(e) Emission units that are not emergency engines.

(1) The owner or operator of an emission unit subject to this section that is not an emergency engine or an affected unit shall comply with the tune-up requirements of subsection (f) of this section, the record keeping requirements of subsection (g) of this section and the reporting requirements of subsection (h) of this section. If the owner or operator of an emission unit subject to this section that is not an emergency engine or is not an affected unit requests an enforceable emission limitation to a level below the daily NOx emission thresholds of subdivision (2) of this subsection and the commissioner grants such a request, the owner or operator is no longer required to operate the emission unit in compliance with subsections (f), (g) and (h) of this section. Such enforceable limitation on daily NOx emissions shall be issued in an order or modification to an existing permit.

(2) On and after May 1, 2018, if an emission unit subject to this section that is not an emergency engine or an affected unit emits NOx at levels equal to or greater than the applicable level identified in subparagraph (A) or (B) of this subdivision on any day from May 1 to September 30, inclusive, the owner or operator shall thereafter operate the emission unit in compliance with section 22a-174-22e of the Regulations of Connecticut State Agencies:

(A) One hundred thirty-seven (137) pounds of NOx, if such source is located in a severe nonattainment area for ozone; or

(B) Two hundred seventy-four (274) pounds of NOx, if such source is located in a serious nonattainment area for ozone.

(3) The owner or operator of an emission unit that is not an emergency engine or an affected unit that exceeds a NOx emission threshold in subsection (e)(2) of this section shall submit the notification required by subsection (h) of this section within 60 days of the day on which the threshold is first exceeded and shall operate the emission unit in compliance with RCSA section 22a-174-22e no later than 270 days after the day on which the threshold is first exceeded.

(4) The owner or operator of an affected unit shall operate the unit in compliance with RCSA section 22a-174-22e. An affected unit that commences initial operation prior to the effective date of this section shall operate in compliance with RCSA section 22a-174-22e as of the effective date of this section. An affected unit that commences initial operation after the effective date of this section shall operate in compliance with RCSA section 22a-174-22e as of the date of initial operation.

(f) Tune-up requirements.

(1) Except as provided in subdivision (2) of this subsection, the owner or operator of an emission unit that is not an emergency engine subject to this section shall conduct an inspection

and tune-up of the emission unit a minimum of once per calendar year beginning with year 2018. Each subsequent annual tune-up shall be performed no earlier than 180 days after the previous tune-up conducted under this section. The inspection and tune-up of the emission unit shall be conducted according to the manufacturer's recommended procedures, or, if the manufacturer's recommendations are not available, according to best available practices.

(2) The owner or operator of an emission unit that is subject to 40 CFR 60 or 40 CFR 63 and required to conduct a periodic tune-up by the applicable requirements of 40 CFR 60 or 40 CFR 63 may conduct tune-ups according to the schedule and procedures of the applicable requirements of 40 CFR 60 or 40 CFR 63. If the period between tune-ups in the applicable requirements of 40 CFR 60 or 40 CFR 63 is greater than 60 months, a tune-up shall be conducted at least once every 60 months.

(g) Record keeping.

(1) The owner or operator of an emission unit subject to this section shall retain all records and reports produced pursuant to this section for five years. Such records and reports shall be available for inspection at reasonable hours by the commissioner or the Administrator. Such records and reports shall be retained at the premises, unless the commissioner approves in writing the use of another location in Connecticut.

(2) The owner or operator of an emission unit shall make and keep the following records:

(A) During the period from May 1 to September 30, inclusive, records sufficient to determine the NOx emissions (lbs) per day;

(B) A calculation of NOx emissions on each day of operation, performed no later than the second day of each month for every day of operation in the preceding month;

(C) The method used to calculate daily NOx emissions and the information used to determine the NOx emissions rate, chosen from the following options:

(i) If data are available from continuous emissions monitoring equipment installed, operated, and certified in accordance with a permit or order, or regulation issued or administered by the commissioner or the Administrator, or a commissioner approved voluntarily installed Continuous Emissions Monitor (CEM), such data shall be used to determine the rate of emissions,

(ii) If the data in subparagraph (C)(i) of this subdivision are not available and stack testing data are available, such stack testing data shall be used to determine the rate of emissions, provided such testing was conducted in accordance with protocols approved in writing by the commissioner in advance of testing,

(iii) If the data in subparagraph (C)(i) or (C)(ii) of this subdivision are not available, the rate of emissions shall be calculated using data supplied by the manufacturer of the emission unit, which data were derived from EPA-

approved emissions testing of such unit performed by or for the manufacturer,

(iv) If the data in subparagraph (C)(i), (C)(ii) or (C)(iii) of this subdivision are not available, the rate of emissions shall be calculated using the data or emissions estimation techniques that result in the highest rate of emissions from the following EPA publications:

I. Compilation of Air Pollutant Emission Factors (AP-42),

II. AIRS Facility Subsystem Emission Factors, or

III. The Emission Inventory Improvement Program (EIIP), or

(v) If the data in subparagraph (C)(i), (C)(ii), (C)(iii) or (C)(iv) of this subdivision are not available, the emission rate shall be calculated using another source of emissions data that is approved by the commissioner;

(D) For an emergency engine not subject to 40 CFR 63 Subpart ZZZZ, daily records of the operating hours of such engine, identifying the operating hours of emergency and non-emergency use and the reason for each period of emergency or non-emergency operation. For an emergency engine subject to 40 CFR 63 Subpart ZZZZ, records required by 40 CFR 63.6655;

(E) The date and work performed for repairs, replacement of parts and other maintenance;

(F) For each emission unit for each tune-up conducted pursuant to subsection (f) of this section, the date on which the emission unit is tuned-up; the name, title and affiliation of the person performing the tune-up, and a description of work performed, and

(G) Copies of all documents submitted to the commissioner pursuant to this section.

(h) Reporting.

If an emission unit exceeds a daily NOx emissions threshold pursuant to subsection (e), the owner or operator shall submit a notification to the Compliance Analysis and Coordination Unit, Bureau of Air Management. Such a notification shall be submitted no later than 60 days after the date on which the daily NOx emissions thresholds were exceeded and shall include the following information:

(1) Legal name(s), address(es) and telephone number(s) of the emission unit owner and operator. If the owner or operator is a corporation or a limited partnership transacting business in Connecticut, provide the exact name as registered with the Secretary of State;

(2) Location address of the premises where the emission unit is located;

(3) Make and model of the emission unit;

(4) Each fuel type combusted in the emission unit;

(5) NOx emissions data for the subject emission unit, including emission rates or emissions factors, if available, or the manufacturer's estimates of emissions;

(6) If the emission unit is operated pursuant to a new source review permit or a registration, the type of license and license number;

(7) The longitude and latitude of the emission unit, in decimal degrees format;

(8) The location address in Connecticut where records required to demonstrate compliance with this section are maintained;

(9) The day on which NOx emissions exceeded the threshold;

(10) A statement that the emission unit will be operated pursuant to the applicable requirements of section 22a-174-22e of the Regulations of Connecticut State Agencies; and

(11) A certification as follows signed by a person authorized by the owner or operator to execute and deliver such a submission on behalf of the owner or operator:

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information may be punishable as a criminal offense under section 22a-175 of the Connecticut General Statutes, under section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Statement of purpose:

(1) The purpose of the regulation, including the problems, issues or circumstances that the regulation proposes to address:

Section 22a-174-22f of the Regulations of Connecticut State Agencies (RCSA) is proposed as a companion regulation to proposed RCSA section 22a-174-22e. In combination, the two regulations will replace RCSA section 22a-174-22, which currently limits nitrogen oxides (NOx) emissions from fuel-burning equipment (boilers, turbines and engines). RCSA section 22a-174-22e focuses on satisfying the U.S. Environmental Protection Agency's (EPA's) reasonably available control technology (RACT) requirements, while RCSA section 22a-174-22f focuses on NOx emissions on peak electric demand days, an important air quality and public health concern. Together, RCSA sections 22a-174-22e and 22a-174-22f will eliminate confusion caused by the current applicability of RCSA section 22a-174-22 and address EPA's anti-backsliding requirement under Section 110(l) of the Clean Air Act.

Although EPA only requires that RACT-based emission limits apply to major sources of NOx, which DEEP is achieving by proposing RCSA section 22a-174-22e, DEEP has determined that NOx emitting equipment at non-major sources of NOx must also be limited if the equipment emits NOx at a high rate. Such equipment often operates on peak electricity demand days, which are typically the hottest days of summer. The hot days of summer are the days on which Connecticut experiences the highest monitored ozone levels of the year, often exceeding the national ambient air quality standards (NAAQS) for ozone. Since NOx is a precursor of ozone, emissions of NOx on these hot days of summer contribute to Connecticut's continued inability to comply with the NAAQS for ozone. High ozone levels are a public health concern, particularly for children, the elderly and people with pre-existing respiratory conditions. RCSA section 22a-174-22f will require owners of NOx emitting equipment at non-major sources of NOx to track daily emissions during the ozone season, and, if the unit exceeds a certain amount of NOx emissions, to limit NOx emissions as required in RCSA section 22a-174-22e. Owners of emission units that maintain low daily NOx emission levels will continue to operate under RCSA section 22a-174-22f and have fewer compliance responsibilities than owners of equipment at major sources of NOx.

In conjunction with RCSA section 22a-174-22e, RCSA section 22a-174-22f creates clarity in the applicability of the rule requirements. By combining the short-term high emitting equipment and the equipment at major sources into a single regulation (RCSA section 22a-174-22), the resulting applicability statement is very confusing. Two separate regulations with separate applicability statements makes it much easier for regulated industries to understand what equipment is regulated and what requirements apply. The two separate sections also allow DEEP to apply streamlined requirements to the owners of equipment at non-major sources of NOx if the daily NOx emissions are low.

(2) A summary of the main provisions of the regulation:
The section requires the owner of equipment at non-major sources of NOx to maintain the equipment in proper operating condition and track daily emissions during the summer months, when NOx emissions are particularly harmful. If the equipment exceeds a certain daily level of NOx emissions, the owner must reduce the rate of emissions as required by RCSA section 22a-174-22e.

(3) The legal effects of the regulation, including all the ways the regulation would change existing regulations or other law:
The owners and operators of regulated equipment will continue to track daily NOx emission in the summer months as required by current section 22a-174-22, which will be repealed in conjunction with the adoption of this section.

For Connecticut, the regulation will be a necessary component of the state's attainment plan for the 2008 ozone NAAQS.

In addition, the adoption of RCSA section 22a-174-22f allows DEEP to satisfy EPA's anti-backsliding requirements under section 110(*l*) of the Clean Air Act.