

Section 1. Subsections (a) to (f), inclusive, of section 22a-174-19 of the Regulations of Connecticut State Agencies are amended to read as follows:

(a) Fuel combustion.

[(a)](1) **Definitions.** [As used in subsections (a) through (f) inclusive] For the purposes of this section, the following definitions shall apply:

“Aviation fuel” means a refined petroleum distillate defined in ASTM D1655, Standard Specification for Aviation Turbine Fuels, or the current active version thereof. “Aviation fuel” includes Jet A and Jet A-1 but does not include Jet B.

“Combustible” means the heat-producing constituents of a fuel.

“Combustion” means the rapid chemical combination of oxygen with the combustible element of a fuel resulting in the production of heat.

“Fuel” means a substance containing combustibles used for producing heat, light, power or energy.

“Fuel merchant” means any person who offers for sale or sells, transfers, or provides in retail or wholesale trade, fuel, including agents, brokers, wholesalers, distributors, or producers who sell commercial or non-commercial fuel.

“Fuel user” means any person who stores or utilizes commercial or non-commercial fuel for the purpose of creating by combustion heat, light, power, or energy.

“Gross heat input” means the total energy requirement for a [premise] premises for twelve (12) consecutive months.

[“Heat input” means the actual firing rate of the fuel burning equipment.

“Premise” means the grouping of all air pollutant emitting activities or sources at any one location and owned or under the control of the same person or persons.

“Stack” or “chimney” means a flue, conduit or opening permitting particulate or gaseous emission into the open air, or constructed or arranged for such purpose.

“Sulfur dioxide (SO₂)” means a colorless gas at standard conditions which has the molecular formula SO₂.

“Sulfur oxides (SO_x)” means any compound made up only of sulfur and oxygen which for the purpose of this regulation will be calculated as sulfur dioxide (SO₂).]

“Historical exhibit” means a demonstration or exhibit in which coal is burned to fuel an activity or equipment in a historical context, such as a blacksmith’s forge, a steam locomotive or a steamboat.

“Kerosene” means a refined petroleum distillate defined in ASTM D3699-08, Standard Specification for Kerosine, or the current active version thereof.

“Sulfur dioxide” or “SO₂” means a gas that at standard conditions has the molecular form SO₂.

[(a)(2) Fuel users

(a)(2)(i) No person, except as provided in subparagraphs (a)(2)(ii), (a)(3)(i) and (a)(3)(ii), shall use or burn fuel which contains sulfur in excess of a maximum of one percent (1.0%) by weight (dry basis). Additionally, no fuel user shall cause or permit the installation or operation of any fuel burning equipment with a heat input of 250,000 BTU per hour or more which uses fuel containing any solid fuel without first obtaining the Commissioner’s approval by the issuance of a stationary source operating permit for this purpose, unless the fuel user demonstrates to the Commissioner’s satisfaction that the emissions of sulfur compounds (expressed as sulfur dioxide) from such equipment are 1.1 pounds per million BTU of heat input or less.

(ii) Under conditions of fuel shortage emergency, as determined by the Commissioner, higher percentages of sulfur may be permitted by express approval of the Commissioner for temporary periods.

(a)(3) Use of fuel containing other than one percent (1%) sulfur.

(a)(3)(ii) Air pollution control/energy trade program. Notwithstanding the provisions of subsection (a)(2), the Commissioner may approve: (i) combustion of a mixture of fuels, or (ii) combustion of a single fuel, which contain(s) more than one percent (1.0 percent) sulfur by weight (dry basis) provided that:

- (A) The emissions of sulfur compounds (expressed as sulfur dioxide) from a given premise do not exceed 0.55 pounds per million BTU of gross heat input;
- (B) The owner or operator of the premise applies for and obtains, prior to the burning of such fuel, a stationary source operating permit for this purpose; and
- (C) The emissions do not prevent or interfere with either the attainment or maintenance of any applicable air quality standard.

(a)(3)(ii) Emission limitation. Notwithstanding the provisions of subdivision (a)(2) the Commissioner may approve the combustion of a single fuel or a mixture of fuels which contain(s) more than one percent (1%) sulfur by weight (dry basis) for any fuel burning equipment provided that the emissions of sulfur compounds (expressed as sulfur dioxide) from such equipment do not exceed 1.1 pounds per million BTU of heat input.

(a)(3)(iii) Ambient impact. Notwithstanding the provisions of subdivision (a)(2) or subparagraphs (a)(3)(i) and (ii) the Commissioner shall, by permit or order, limit the emission of sulfur compounds (expressed as sulfur dioxide) from any fuel burning equipment on a given premise to less than 1.1 pounds per million BTU of heat input for any source which interferes with the attainment or maintenance of any applicable air quality standard.

(a)(4) Fuel merchants

(a)(4)(i) No fuel merchant, except as provided in subparagraphs (a)(4)(ii) and (iii) shall store, offer for sale, sell, make available, deliver for use or exchange in trade for use in Connecticut fuel which contains in excess of one percent (1.0%) sulfur by weight (dry basis).

(a)(4)(ii) In other than conditions of fuel shortage emergency described under subsection (a)(2)(ii), fuel merchants seeking to store, offer for sale, sell, deliver for use or exchange in trade, for use in Connecticut, and fuel users seeking to create by combustion heat, light, power, or energy from fuels containing sulfur in excess of the maximums set by subsection (a)(2) under the conditions specified in subsection (a)(3) shall obtain the prior approval of the Commissioner.

(a)(4)(iii) The Commissioner may allow a fuel merchant to store, sell, or deliver fuel, which contains more than one percent (1%) sulfur by weight (dry basis) to any fuel user who has been authorized to use such fuel by:

(A) A variance pursuant to 22a-174-13; or

(B) A permit pursuant to 22a-174-3; or

(C) Approval pursuant to 22a-174-19(a)(2)(ii); or

(D) Approval pursuant to 22a-174-19(a)(3); or

(E) Authorization as a result of any other action taken by the Commissioner.

The Commissioner may take such action under this subparagraph without requiring any notice or hearing.

(a)(5) The Commissioner may require submission of fuel analyses, results of stack sampling, or both, prepared at the expense of the merchant or user, to ensure compliance with the provisions of subsections (a)(1) through (a)(7) inclusive, and no person shall fail to submit such data when requested to do so by the Commissioner.

(a)(6) Persons selling fuels in Connecticut shall maintain records of sales of all fuel containing sulfur and shall make these records available for inspection by the Commissioner or his representative during normal business hours. This section shall not apply to any of the following fuels which have sulfur contents below two-tenths of one percent (0.2%) by weight (dry basis): distillate oil, motor vehicle fuel, aircraft fuel, or gaseous fuel.

(a)(7) The provisions of subsection (a)(1) through (a)(6) inclusive shall not apply to fuels used by oceangoing vessels.

(a)(8) No person shall cause or permit the flaring or combustion of any refinery process gas stream or any other process gas stream that contains sulfur compounds measured as hydrogen sulfide in concentrations greater than 10 grains per 100 standard cubic feet (23 gm/100 scm) of gas.

(a)(9)(i) The provisions of subsections (a)(2)(i) above shall not apply to any coal burning equipment used primarily for educational or historical demonstrations or exhibits provided that the emissions from such fuel burning equipment do not interfere with either the attainment or maintenance of any applicable air quality standard. These sources shall include, but are not limited to, blacksmith's forges, steam locomotives, and steamboats, provided, however, that such sources do not use or burn fuel which contains sulfur in excess of one and one-half percent (1.5%) by weight (dry basis).

(ii) As a prerequisite for exemption under the provisions of subsections (a)(9)(i), owners shall notify the Commissioner prior to commencement of said operation.

(iii) The Commissioner may revoke or modify an exemption under subsection (a)(9) if he determines that operation of the source will (1) prevent or interfere with the attainment or maintenance of any applicable air quality air standards, or (2) create a substantial health problem.

(iv) All fuel merchants are authorized to sell fuel to any owner or operator granted an exemption pursuant to subsection (a)(9) above. In addition to the requirements of subsection (a)(7) above, all records shall include the sulfur content of the fuel.]

(2) Fuel oil sulfur content limitations.

(A) Except as provided in subdivision (4) of this subsection, on and after January 1, 2018, no person shall purchase, acquire, receive or combust in the State of Connecticut distillate fuel oil or distillate fuel oil blended with biodiesel fuel that contains sulfur in excess of 15 ppm (0.0015% by weight, dry basis);

(B) Except as provided in subdivision (4) of this subsection, on and after January 1, 2018, no person shall store, offer for sale, sell, make available, deliver for combustion or exchange in trade distillate fuel oil or distillate fuel oil blended with biodiesel fuel for combustion in the State of Connecticut unless such fuel contains sulfur in an amount no greater than 15 ppm (0.0015% by weight, dry basis);

(C) Except as provided in subdivision (4) of this subsection, on and after January 1, 2018, no person shall purchase, acquire, receive or combust in the State of Connecticut residual oil or residual oil blended with biodiesel fuel that contains sulfur in excess of 3000 ppm (0.3% by weight, dry basis);

(D) Except as provided in subdivision (4) of this subsection, on and after January 1, 2018, no person shall store, offer for sale, sell, make available, deliver for combustion or exchange in trade residual oil or residual oil blended with biodiesel fuel for combustion in the State of Connecticut unless such fuel contains sulfur in an amount no greater than 3000 ppm (0.3% by weight, dry basis);

(E) Except as provided in subdivision (4) of this subsection, during the period from July 1, 2014 through December 31, 2017, the owner or operator of any fuel-burning equipment in the State of Connecticut using distillate fuel oil or distillate

fuel oil bended with biodiesel fuel shall combust in such equipment only fuel that does not exceed a sulfur content of 500 ppm (0.05% by weight, dry basis);

- (F) Except as provided in subdivision (4) of this subsection, on and after January 1, 2018, no person shall purchase, acquire, receive or combust in the State of Connecticut kerosene that contains sulfur in excess of 400 ppm (0.04% by weight, dry basis);
- (G) Except as provided in subdivision (4) of this subsection, on and after January 1, 2018, no person shall store, offer for sale, sell, make available, deliver for combustion or exchange in trade kerosene for combustion in the State of Connecticut unless such kerosene contains sulfur in an amount no greater than 400 ppm (0.04% by weight, dry basis);
- (H) Except as provided in subdivision (4) of this subsection, on and after January 1, 2018, no person shall combust in a stationary source in the State of Connecticut aviation fuel that contains sulfur in excess of 3000 ppm (0.3% by weight, dry basis); and
- (I) Notwithstanding compliance with subparagraphs (A) through (H) of this subdivision, the commissioner may, by permit or order, impose additional restrictions on any owner or operator to limit the emission of sulfur compounds, expressed as sulfur dioxide, from any fuel-burning equipment if the commissioner determines that operation of such equipment interferes with the attainment or maintenance of any applicable air quality standard.

(3) Coal sulfur content limitations.

- (A) Except as provided in subdivision (4) of this subsection, on and after July 1, 2014, no person shall purchase, acquire, receive or combust coal that contains sulfur in excess of 3000 ppm (0.3% by weight, dry basis);
- (B) Except as provided in subdivision (4) of this subsection, on and after July 1, 2014, no person shall store, offer for sale, sell, make available, deliver for combustion or exchange in trade coal for combustion in Connecticut unless such fuel contains sulfur in an amount no greater than 3000 ppm (0.3% by weight, dry basis); and
- (C) Notwithstanding compliance with subparagraphs (A) and (B) of this subdivision, the commissioner may, by permit or order, impose additional restrictions on any owner or operator to limit the emission of sulfur compounds, expressed as sulfur dioxide, from any coal burning equipment if the commissioner determines that operation of such equipment interferes with the attainment or maintenance of any applicable air quality standard.

(4) Excepted activities.

- (A) The requirements of this subsection shall not apply to the purchase, acquisition, combustion, storage, sale or delivery of fuel for use in a mobile source.

- (B) Under conditions of fuel shortage emergency, as determined by the commissioner, the commissioner may, for temporary periods, approve in writing the sale, purchase, storage, delivery and combustion of fuel oil with a sulfur content that exceeds the limitations in subsection (a)(2)(A) through (I) of this section or coal with a sulfur content that exceeds the limitations in subsection (a)(3)(A) or (B) of this section. Any person seeking an approval under this subparagraph shall submit a request in writing to the Bureau of Air Management Director of Engineering and Enforcement stating the reasons in support of such a request. In approving any request under this subparagraph, the commissioner shall specify in writing the period of time such suspension shall be in effect.
- (C) This section shall not apply to fuel combusted in fuel-burning equipment undergoing testing as part of a research and development program.
- (D) The owner or operator of a historical exhibit may burn coal in excess of the limitation in subdivision (3)(A) of this subsection if:

 - (i) The historical exhibit does not burn coal with a sulfur content greater than 15,000 ppm (1.5% by weight, dry basis), and
 - (ii) The owner or operator notifies the commissioner in writing prior to the commencement of such fuel use.
- (E) The commissioner may revoke an exception provided in subparagraph (A), (B), (C) or (D) of this subdivision if the commissioner determines that the excepted activity will:

 - (i) Prevent or interfere with the attainment or maintenance of any applicable air quality standard, or
 - (ii) Create a public health concern or impact.
- (F) A fuel merchant may store fuel that contains sulfur in excess of the limitations in subsection (a)(2)(B), (a)(2)(D), (a)(2)(F) or (a)(3)(B) of this section and may sell or deliver such fuel under any one of the following conditions:

 - (i) For sale or delivery to a fuel user who has been issued a variance pursuant to section 22a-174-13 of the Regulations of Connecticut State Agencies that specifies the use of such fuel,
 - (ii) For sale or delivery to a person authorized by exemption in subparagraphs (A) through (D) of this subdivision, or
 - (iii) As otherwise authorized by the commissioner.
- (5) Record keeping and reporting for fuel users and merchants.**

 - (A) Persons selling and using fuels in Connecticut subject to the requirements of this subsection shall maintain records of information necessary for the commissioner

to determine compliance with the requirements of this subsection. Information sufficient to make such determinations may include fuel analyses, results of stack sampling, records of the fuel type and quantity sold or used or the sulfur content of fuel sold or used.

(B) All records made to demonstrate compliance with the requirements of this subsection shall be:

- (i) Made available to the commissioner to inspect and copy upon request; and
- (ii) Maintained for five (5) years from the date such record is created.

(b) Sulfuric acid plants.

No person shall cause or permit sulfur [oxides] compound, expressed as sulfur dioxide, emissions which exceed 6.5 pounds per ton (3.25 kg/ metric ton) of one hundred percent (100%) acid produced.

(c) Sulfur recovery plants.

No person shall cause or permit the emission of sulfur [oxides] compounds, expressed as sulfur dioxide, from a sulfur recovery plant to exceed 0.01 pounds (kg) per pound (kg) of sulfur processed.

(d) Nonferrous smelters.

No person shall cause or permit the emission of sulfur [oxides] compounds, expressed as sulfur dioxide, from primary non-ferrous smelters to exceed that set forth according to the following equations.

Copper smelters: $Y = 0.2 X$

Zinc smelters: $Y = 0.564 X^{0.85}$

Lead smelters: $Y = 0.98 X^{0.77}$

Where X is the total sulfur fed to the smelter in lb/hr and Y is the allowable sulfur dioxide emissions in lb/hr.

(e) Sulfite pulp mills.

No person shall cause or permit the total sulfite pulp mill emissions of sulfur [oxides] compounds, expressed as sulfur dioxide, from blow pits, washer vents, storage tanks, digester relief, recovery system, etc., to exceed 9.0 pounds per air-dried ton (4.5 kg/metric ton) of pulp produced.

(f) Other process sources.

Notwithstanding the provisions of section 22a-174-18(f) of the Regulations of Connecticut State Agencies, process sources not covered in subsections (b) through (e) of this section shall not emit sulfur [oxides] compounds [(], expressed as sulfur dioxide[)], in the stack

effluent in concentrations [which] that exceed 500 parts per million at standard temperature and pressure.

Sec. 2. Section 22a-174-19 of the Regulations of Connecticut State Agencies is amended by adding subsection (g) as follows:

(g) Refinery process gas stream emission standard.

No owner or operator of a petroleum refinery, by-product coke plant, grey iron cupola, blast furnace, basic oxygen steel furnace or coal conversion plant that emits a process gas stream shall cause, allow or permit the emission of hydrogen sulfide in such a process gas stream to exceed ten (10) grains per 100 dscf (165 ppm by volume) at zero percent oxygen. 40 CFR 60, Appendix A, EPA Reference Method 11 shall be used to demonstrate compliance with this standard. For the purposes of this subsection, “process gas stream” does not include any gas generated as a result of start-up, shutdown or malfunction.

Sec. 3. Section 22a-174-19a(c) of the Regulations of Connecticut State Agencies is amended to read as follows:

(c) Sulfur dioxide emission standards and fuel sulfur limits [effective on and after January 1, 2002]. [On and after January 1, 2002 and except as provided in subsection (f) of this section, the] The owner or operator of an affected unit or units shall:

- (1) Combust liquid fuel, gaseous fuel or a combination of each provided that each fuel possess a fuel sulfur limit of equal to or less than [0.5 %] 3000 ppm sulfur[,] (0.3% by weight, [(dry basis);
- (2) Meet an average emission rate of equal to or less than [0.55] 0.33 pounds SO₂ per MMBtu for each calendar quarter for an affected unit at the premises; or
- (3) Meet an average emission rate of equal to or less than [0.5] 0.3 pounds SO₂ per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at the premises.

Sec. 4. Subsection (e) of section 22a-174-19a of the Regulations of Connecticut State Agencies is amended to read as follows:

(e) [Sulfur dioxide emissions standards and fuel sulfur limits effective on and after January 1, 2003. Notwithstanding the provisions of subsection (b) of this section, this subsection shall apply, on and after January 1, 2003, to the owner or operator of a Title IV source that is also an affected unit or units. On and after January 1, 2003, such owner or operator shall:

- (1) Combust liquid fuel, gaseous fuel or a combination of each provided that each fuel possess a fuel sulfur limit of equal to or less than 0.3 % sulfur, by weight (dry basis);
- (2) Meet an average emission rate of equal to or less than 0.33 pounds SO₂ per MMBtu for each calendar quarter for an affected unit at a premises; or

(3) Meet an average emission rate of equal to or less than 0.3 pounds SO₂ per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at a premises.] **Reserved.**

Sec. 5. Subsection (g)(1) of section 22a-174-19a of the Regulations of Connecticut State Agencies is amended to read as follows:

(g) Fuel emergencies.

(1) The commissioner may suspend the requirements of subsection (c) [or (e)] of this section for the owner or operator of any affected unit using a low-sulfur fuel. For the purposes of this subsection, a low-sulfur fuel is any solid, liquid or gaseous fuel with a sulfur content equal to or less than [0.5% by weight, dry basis] 3000 ppm (0.3% by weight, dry basis). Such suspension shall be made only when the commissioner finds that the availability of fuel that complies with such requirements is inadequate to meet the needs of residential, commercial and industrial users in this state and that such inadequate supply constitutes an emergency.

Sec. 6. Subsection (i)(1) and (2) of section 22a-174-19a of the Regulations of Connecticut State Agencies is amended to read as follows:

(i) Record keeping.

(1) The owner or operator of an affected unit who demonstrates compliance with this section by meeting the applicable fuel sulfur limits of subsections (c)(1) [or (e)(1)] of this section shall make and keep records in accordance with the following:

- (A) If fuel with sulfur content not exceeding an applicable fuel sulfur limit is the only fuel purchased and combusted by an affected unit, then the owner or operator shall make and keep records that demonstrate the fuel sulfur content of each shipment of fuel received; or
- (B) If fuel with sulfur content above any applicable limit is blended at the premises for combustion in an affected unit or units, the owner or operator shall make and keep daily records demonstrating that all fuel combusted at the affected unit or units meets the applicable fuel sulfur limits of subsection (c)(1) [or (e)(1)] of this section. Fuel sulfur analysis shall be conducted in accordance with the American Society for Testing and Material (ASTM) test method D4294 and automatic sampling equipment shall conform to ASTM test method D4177-82. (Copies of ASTM test methods D4294 and D4177-82 may be obtained from the Department of Environmental Protection, Bureau of Air Management, 79 Elm Street, 5th floor, Hartford, CT 06106-5127; (860) 424-3027).

(2) The owner or operator of an affected unit who demonstrates compliance with this section by meeting the average SO₂ emission rate limits of subsections (c)(2)[,] or (c)(3)[, (e)(2) or (e)(3)] of this section shall make and keep records in accordance with the following:

- (A) For affected units that are also Title IV sources, hourly SO₂ emission rate values determined from data measured by a CEMS in accordance with the applicable provisions of 40 CFR 75;

- (B) For affected units that are not Title IV sources:
 - (i) hourly SO₂ emission rate values determined from data measured by a CEMS in accordance with the applicable provisions of either 40 CFR 60 or 75, or
 - (ii) if any affected unit does not have a CEMS in accordance with either 40 CFR 60 or 75, then hourly SO₂ emission rate values determined from data measured by a CEMS or other monitoring system; and
- (C) For all affected units, quarterly facility SO₂ emission rate averages, determined by dividing total quarterly SO₂ emissions by total quarterly heat input values for all affected units at the facility.

Statement of purpose: The primary purpose of this proposal is to reduce the sulfur content of fuel oils burned in stationary sources to reduce emissions of sulfur dioxide (SO₂), an air pollutant and a contributor to the formation of fine particulate matter (PM_{2.5}). The reduction in SO₂ emissions is important to reduce visibility-impairing emissions that contribute to regional haze and protect the public health from the adverse health impacts of SO₂ and PM_{2.5} pollution.

Connecticut is a member of a regional planning organization, the Mid-Atlantic/Northeast Visibility Union (MANEVU), which coordinates regional haze planning efforts to comply with section 169A of the federal Clean Air Act. In 2007, recognizing that SO₂ is the main contributor to visibility impairment, the MANEVU states agreed to pursue fuel sulfur content limitations for distillate and residual fuel oils.

The main provisions of this proposal are the fuel sulfur content restrictions in sections 22a-174-19 and 22a-174-19a of the Regulations of Connecticut State Agencies (RCSA). RCSA section 22a-174-19 is a regulation of general applicability that currently includes fuel sulfur content restrictions much higher than those of this proposal. RCSA section 22a-174-19a includes more restrictive provisions to limit SO₂ emissions from large electric generating units and industrial boilers. In addition to reducing the acceptable sulfur content for fuels, the proposal also deletes obsolete requirements and makes minor clarifications to RCSA sections 22a-174-19 and 22a-174-19a.

The proposal regulates distillate, residual, kerosene and aviation fuels used in all non-mobile equipment such as boilers, turbines and engines. The fuel sulfur content restrictions for large electric generating units and industrial boilers are not changed by this amendment, since the sulfur content of such large sources was limited in the year 2000 in response to Governor Rowland's Executive Order No. 19. The more stringent fuel sulfur content limitations will mainly impact fuel suppliers, who will need to obtain compliant fuels.

As drafted, this proposal will limit the sulfur content of home heating oil. DEEP recognizes that Connecticut General Statutes (CGS) section 16a-21a currently regulates the sulfur content of home heating oil and off-road diesel fuel, but the provisions of that statute do not take effect until the states of New York, Massachusetts and Rhode Island have each adopted substantially similar requirements. New York and Massachusetts have adopted substantially similar requirements. Rhode Island is working to adopt such requirements. DEEP anticipates that Rhode Island will complete its rule adoption prior to the adoption of this proposal. If Rhode Island does act prior to the adoption of this proposal so that the limits of CGS section 16a-21a take effect, then the fuel sulfur content restrictions of this proposal will not conflict with those of CGS section 16a-21a, as such limits apply to home heating oil. If the requirements of CGS section 16a-21a do not go into effect prior to the effective date of this proposal, DEEP will adjust this proposal to eliminate home heating oil.