

**HEARING REPORT**

**Prepared Pursuant to Section 4-168(d) of the  
Connecticut General Statutes and  
Section 22a-3a-3(d)(5) of the Department of Energy and Environmental Protection  
Rules of Practice**

**Regarding  
Amendment of Air Quality Regulations Concerning  
Control of Sulfur Compound Emissions and Control of  
Sulfur Dioxide Emissions from Power Plants and Other  
Large Stationary Sources of Air Pollution**

**Adoption of Air Quality Regulations Concerning Fuel  
Sulfur Content Limitations for Stationary Sources**

**Hearing Officer:  
Wendy Jacobs**

**Date of Hearing: October 9, 2013**

On August 21, 2013, the Commissioner of the Department of Energy and Environmental Protection (DEEP) published a notice of intent to control sulfur compound emission by amending sections 22a-174-19 and 22a-174-19a of the Regulations of Connecticut State Agencies (RCSA) and adopting RCSA section 22a-174-19b. Pursuant to such notice, a public hearing was held on October 9, 2013, with the public comment period closing on October 10, 2013.

**I. Hearing Report Content**

As required by section 4-168(d) of the Connecticut General Statutes (CGS), this report describes the proposal, identifies principal reasons in support of and in opposition to the proposal, and summarizes and responds to all comments on the proposal.

The proposal is included as Attachment 2 to this report. A final revised version of the proposal based on the recommendations in this report is included as Attachment 3. A statement in satisfaction of CGS section 22a-6(h) is included as Attachment 1.

**II. Summary of Proposal**

The primary purpose of the proposal is to limit the sulfur content of fuel oils burned in stationary sources to reduce emissions of sulfur dioxide (SO<sub>2</sub>), an air pollutant and a contributor to the formation of the pollutant fine particulate matter (PM<sub>2.5</sub>). The reduction in SO<sub>2</sub> emissions is important to reduce visibility-impairing emissions that contribute to regional haze and protect the public health from the adverse health impacts of SO<sub>2</sub> and PM<sub>2.5</sub> pollution. This proposal does not regulate the sulfur content of heating oil to which CGS section 16a-21a applies. DEEP is

proposing to:

- Adopt, in new section 22a-174-19b of the Regulations of Connecticut State Agencies (RCSA), fuel sulfur content restrictions for distillate, residual, kerosene and aviation fuels used in all non-mobile equipment for purposes other than heating;
- Eliminate the less stringent fuel sulfur content restrictions of RCSA section 22a-174-19; and
- Remove outdated provisions in RCSA section 22a-174-19a, without changing the current requirements regulating SO<sub>2</sub> emissions from large electric generating units and industrial boilers.
- Clarify language in RCSA section 22a-174-5(a) and add a test method to RCSA section 22a-174-5(b)(1).

### **III. Opposition to the Proposal**

No submitted comments oppose adoption of this proposal.

### **IV. Summary of Comments**

No oral comments were given at the hearing.

Written comments were received from the following persons:

1. Michael J. Smeriglio  
Executive Director of Facilities Management  
Stamford Health Systems, Inc.  
Stamford Hospital  
30 Shelburne Road  
Stamford, CT 06904
2. Donald C. DiCristofaro, CCM  
President  
Blue Sky Environmental LLC  
P.O. Box 603  
Hingham, MA 02043
3. Eric J. Brown  
Director, Energy & Environmental Policy  
CBIA  
350 Church Street  
Hartford, CT 06103
4. Pamela F. Faggert  
Vice President and Chief Environmental Officer  
Dominion Resource Services, Inc.  
5000 Dominion Boulevard  
Glen Allen, VA 23060

5. Anne Arnold, Manager  
Air Quality Planning Unit  
United States Environmental Protection Agency  
Region I  
5 Post Office Square Suite 100  
Boston, Massachusetts 02109-3912

All comments submitted are summarized below with DEEP's responses. Commenters are associated with the individual comments below by the number assigned above. When changes to the proposed text are indicated in response to comment, new text is in bold font and deleted text is in strikethrough font.

**Comment 1:** The commenter supports Section 22a-174-19b, particularly the proposed new maximum sulfur content limits for distillate fuel listed in Table 19b-1 of subsection (d). The commenter also supports the exemption language in subsection (c)(3) that allows the use of any fuel that will not meet the sulfur content limits effective July 1, 2014 to be continued to be stored, offered for sale, delivered or combusted so long as it meets any applicable sulfur content limitations at the time it is stored, sold or delivered. The commenter also supports subsection (e) regarding a fuel shortage emergency.

**Commenter submitting this comment: 1**

**Response:** DEEP acknowledges the commenter's support for the proposal.

**Comment 2:** The commenter endorses the proposed changes, particularly the new regulations proposed as Section 22a-174-19b. The proposed lower sulfur standards will reduce emissions of sulfur dioxide, an air pollutant and contributor to the formation of fine particulate matter. By lowering the maximum fuel sulfur content as per Table 19b-1, the regulatory permitting burden for many small boilers will be greatly eased by eliminating the need for a new source review permit since the potential to emit for all criteria pollutants will be less than 15 tons per year. The commenter also supports the exemption language in subsection (c)(3) that allows the use of any fuel that will not meet the sulfur content limits effective July 1, 2014 to be continued to be stored, offered for sale, delivered or combusted so long as it meets any applicable sulfur content limitations at the time it is stored, sold or delivered. Finally, the commenter supports subsection (e) regarding a fuel shortage emergency.

**Commenter submitting this comment: 2**

**Response:** DEEP acknowledges the commenter's support for the proposal and agrees with the assessment of the impact on permitting for some small boilers.

**Comment 3:** From discussions among the commenter and fuel suppliers, the commenter's understanding is that 15 ppm maximum fuel sulfur content aviation fuel is not available in the marketplace currently and there are no plans in the fuel production industry to develop such a fuel in the foreseeable future, including by mid-2018. Also, any new aviation fuel would first need to be reviewed and approved by the Federal Aviation Administration (FAA), typically a very lengthy process. As a result, the proposed 15 ppm limit for aviation fuel in Table 19b-1 would effectively require a special fuel unique to Connecticut. Given the very small Connecticut

market for aviation fuel combusted in stationary sources, it is extremely unlikely that such a fuel would be developed and available to Connecticut facilities subject to RCSA section 22a-174-19b.

In other recent instances regarding fuel specifications (e.g., for gasoline and home heating oil), DEEP and the General Assembly have deliberately chosen to avoid creating significant market disruption and unique burdens on Connecticut businesses from state-specific fuel standards that are not in sync with market offerings. This same approach is warranted here. The commenter therefore requests that the proposed 15 ppm limit for aviation fuel combusted in a stationary source be removed from any final RCSA section 22a-174-19b regulation that may be adopted.

**Commenter submitting this comment: 3**

**Response:** DEEP did not intend for a separate Connecticut aviation fuel market to be created by the imposition of a 15 ppm fuel sulfur content limit. DEEP recognizes the limitations imposed by FAA requirements. The 3000 ppm fuel sulfur content limit is consistent with FAA requirements. For the reasons stated in the comment, DEEP should revise Table 19b-1 in proposed RCSA section 22a-174-19b by removing the 15 ppm limit for aviation fuel and maintaining the 3000 ppm limit without change, as follows:

<b>Table 19b-1</b>		
<b>Fuel Type</b>	<b>Maximum Fuel Sulfur Content</b>	
	<b>Effective July 1, 2014 through June 30, 2018</b>	<b>Effective on and after July 1, 2018</b>
Distillate fuel oil or distillate fuel oil blended with biodiesel fuel	500 ppm (0.05%) by weight	15 ppm (0.0015%) by weight
Residual oil or residual oil blended with biodiesel fuel	10,000 ppm (1.0 %) by weight	3000 ppm (0.3%) by weight
Aviation fuel combusted in a stationary source	3000 ppm (0.3%) by weight	<del>15-3000</del> ppm ( <del>0.0015-0.3</del> %) by weight
Kerosene	400 ppm (0.04%) by weight	15 ppm (0.0015%) by weight

**Comment 4:** In RCSA 22a-174-1, DEEP defines “stationary source” as:

*(11) “Stationary source” means “stationary source” as defined in 40 CFR 51.165(a)(1)(i) and (ii), provided that any portable emissions unit which is moved from site to site but remains stationary during operation is a stationary source (emphasis added).*

Given this definition of stationary source, the commenter is concerned that, to the extent non-road engines, such as trailer-mounted compressors and generators, are considered stationary sources and become subject to the sulfur-in-fuel requirements, out-of-state contractor and rental

equipment brought into the state could contain any grade fuel. Even in-state rental units that have been previously rented out-of-state may likewise contain fuel of unknown grade. New England is a region of small states and doing business over borders is common.

For these reasons, the commenter recommends that DEEP provide either an exemption for all non-road engines or include a provision that would provide a temporary waiver of the requirements until the engine's existing fuel supply is used up. The commenter suggests the following language for consideration to be added to the exemption provisions of new Section 22a-174-19b(c):

*“Temporary leased or rented equipment that may have previously been fuelled out-of-state will be compliant with this section if fuel consistent with the requirements of Table 19b-1 is exclusively used to replenish the fuel supply.”*

**Commenter submitting this comment: 4**

**Response:** The DEEP should allow for the use of existing fuel that may not meet the requirements of RCSA section 22a-174-19b in temporary leased or rented equipment, provided that all fuel used to refuel such temporary leased or rented equipment while the equipment is used in Connecticut meets the requirements of RCSA section 22a-174-19b. DEEP should add new subdivision (7) to RCSA section 22a-174-19b(c) to address the use of non-road engines that are leased or rented:

**(c)(7) Any fuel in equipment that is leased or rented outside of the state of Connecticut for use in Connecticut may be combusted in the state of Connecticut regardless of the sulfur content, provided that all refueling of such leased or rented equipment performed while in Connecticut complies with the fuel sulfur content limits of Table 19b-1 of this section.**

**Comment 5:** In a letter dated February 6, 2013, the commenter provided comments on draft revisions to Section 22a-174-19. DEEP has adequately addressed the commenter's previous comments in the current proposal.

The commenter supports the adoption of the proposed sulfur in fuel oil limitations. The commenter notes that similar limits have already been adopted by neighboring states, specifically New York, Massachusetts, Maine, and Vermont, in order to meet Regional Haze obligations.

The commenter encourages DEEP to submit the new and amended regulations, once adopted, to the Environmental Protection Agency (EPA) as a State Implementation Plan revision.

**Commenter submitting this comment: 5**

**Response:** DEEP notes the commenter's support for the proposal and agrees that, as stated in the notice for this proposal, DEEP should submit the adopted new and amended regulations to EPA as a State Implementation Plan revision.

**V. Comments of Hearing Officer**

The hearing officer suggests the following additional revisions to the proposal. The suggested revisions are minor, noncontroversial and will make for a clearer final proposal.

(1) The word “Parts” is unnecessary and should be removed from RCSA section 22a-174-19a(d)(1) as follows:

(1) No later than the following March 1, for each calendar year, [commencing January 1, 2002,] the owner or operator of each affected unit that is also a Title IV source shall retire one SO<sub>2</sub> allowance, rounded up to the next whole ton, for each ton of SO<sub>2</sub> emitted in the state of Connecticut. This requirement is in addition to any other requirements imposed on the owner or operator of a Title IV source by the Administrator under 40 CFR ~~Parts~~ 72 and 73.

(2) The phrase “of this section” should be added to proposed new RCSA section 22a-174-19b(d)(1) after the reference to Table 19b-1 as follows:

(1) No person shall store, offer for sale, sell, deliver or exchanged in trade, for combustion in a stationary source in the state of Connecticut, fuel that contains sulfur in excess of the applicable limitation set forth in Table 19b-1 **of this section**, except as provided in subsection (c) or (e) of this section.

(3) DEEP already includes severability provisions in RCSA section 22a-174-15. Therefore, proposed new RCSA section 22a-174-19b(h) is unnecessary and should be deleted as follows:

~~(h) — Severability.~~

~~Each provision of this section shall be deemed severable, and in the event that any provision in this section is held to be invalid, the remainder of this section shall continue in full force and effect.~~

## VI. Conclusion

Based upon the comments addressed in this Hearing Report, I recommend the proposal be revised as recommended herein and that the recommended final proposal, included as Attachment 3 to this report, be submitted by the Commissioner for approval by the Attorney General and the Legislative Regulations Review Committee and upon adoption, be submitted to the EPA as a SIP revision.

/s/ Wendy Jacobs  
Wendy Jacobs, Hearing Officer

December 17, 2013  
Date

**ATTACHMENT 1**  
**STATEMENT PURSUANT TO SECTION 22a-6(h) OF THE GENERAL STATUTES:**  
**PROPOSED REVISIONS TO THE**  
**SULFUR CONTENT OF FUEL COMBUSTED IN STATIONARY SOURCES**

Pursuant to section 22a-6(h) of the Connecticut General Statutes (CGS), the Commissioner of the Department of Energy and Environmental Protection (the Department) is authorized to adopt regulations pertaining to activities for which the federal government has adopted standards or procedures. At the time of public notice, the Commissioner must distinguish clearly all provisions of a regulatory proposal that differ from federal standards or procedures. In addition, the Commissioner must provide an explanation for all such provisions in the regulation-making record required under CGS Title 4, Chapter 54 and make such explanation publicly available at the time of the publication of the notice of intent required under CGS section 4-168.

In accordance with the requirements of CGS section 22a-6(h), the following statement is entered into the administrative record in the matter of the proposed revisions to sections 22a-174-19 and 19a of the Regulations of Connecticut State Agencies (RCSA) and the adoption of RCSA section 22a-174-19b.

The proposal reduces the sulfur content of fuel oils burned in stationary sources to reduce emissions of sulfur dioxide (SO<sub>2</sub>), an air pollutant and a contributor to the formation of the pollutant fine particulate matter (PM<sub>2.5</sub>). The more stringent fuel sulfur content limits will mainly impact fuel suppliers. DEEP is proposing to:

- Adopt fuel sulfur content restrictions for distillate, residual, kerosene and aviation fuels used in all non-mobile equipment such as boilers, turbines and engines in new section 22a-174-19b of the Regulations of Connecticut State Agencies (RCSA);
- Eliminate the less stringent fuel sulfur content restrictions of RCSA section 22a-174-19; and
- Remove outdated provisions in RCSA section 22a-174-19a regulating SO<sub>2</sub> emissions from large electric generating units and industrial boilers.

No Federal law establishes standards or requirements regarding the sulfur content of the fuel oil regulated by the proposed revisions to RCSA sections 22a-174-19 and 19a or the adoption of RCSA section 22a-174-19b. The Federal government does set standards for the sulfur content of fuel oil used in motor vehicles 40 Code of Federal Regulations (CFR) 80.520 but does not have parallel requirements for fuel oil sold to be burned in stationary sources across sources types. The New Source Performance Standards of 40 CFR 60 and the National Emission Standards for Hazardous Air Pollutants of 40 CFR 63 require the use of fuel oil with a sulfur content equivalent to this proposal (distillate fuel with a sulfur content of 15 ppm or less) for many individual fuel-burning source categories.

In summary, the requirements of the proposal are an activity that is not regulated by the Federal government, although the resulting fuel sulfur content of fuel used in certain source categories is the same as that required in certain specific Federal requirements pertaining to air quality.

12 August 2013  
Date

/s/Merrily A. Gere  
Merrily A. Gere  
Bureau of Air Management

## Attachment 2

### Proposal

**Section 1. Section 22a-174-19 of the Regulations of Connecticut State Agencies is amended to read as follows:**

**(a) [Fuel combustion.** (a)(1) Definitions. As used in subsections (a) through (f) inclusive:

“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 noncommercial 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 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 (SO<sub>2</sub>)” means a colorless gas at standard conditions which has the molecular formula SO<sub>2</sub>.

“Sulfur oxides (SO<sub>x</sub>)” means any compound made up only of sulfur and oxygen which for the purpose of this regulation will be calculated as sulfur dioxide (SO<sub>2</sub>).

(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.] **Reserved.**

(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:  $Y = 0.564 X^{[0.85]}_{0.85}$

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

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-174-19a(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 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 % sulfur, by weight (dry basis);
- (2) Meet an average emission rate of equal to or less than 0.55 pounds SO<sub>2</sub> 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 pounds SO<sub>2</sub> per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at the premises.] **Reserved.**

**Sec. 3. Section 22a-174-19a(d)(1) of the Regulations of Connecticut State Agencies is amended to read as follows:**

(1) No later than the following March 1, for each calendar year, [commencing January 1, 2002,] the owner or operator of each affected unit that is also a Title IV source shall retire one SO<sub>2</sub> allowance, rounded up to the next whole ton, for each ton of SO<sub>2</sub> emitted in the state of Connecticut. This requirement is in addition to any other requirements imposed on the owner or operator of a Title IV source by the Administrator under 40 CFR Parts 72 and 73.

**Sec. 4. Section 22a-174-19a(e) 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] The owner or operator of an affected unit 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 3000 ppm (0.3 % sulfur, by weight) [(dry basis)];
- (2) Meet an average emission rate of equal to or less than 0.33 pounds SO<sub>2</sub> 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 SO<sub>2</sub> per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at a premises.

**Sec. 5. Section (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). 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. Section 22a-174-19a(i) 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] subsection (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, or a more recent version of the same method. (Copies of ASTM test methods [D4294 and D4177-82] referenced in this section may be obtained from the Department of Environmental Protection, Bureau of Air Management, 79 Elm Street, 5<sup>th</sup> 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 SO<sub>2</sub> emission rate limits of subsections [(c)(2), (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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> emission rate values determined from data measured by a CEMS or other monitoring system; and
- (C) For all affected units, quarterly facility SO<sub>2</sub> emission rate averages, determined by dividing total quarterly SO<sub>2</sub> emissions by total quarterly heat input values for all affected units at the facility.

(3) The owner or operator of an affected unit shall keep the records specified in subdivision (1) or (2) of this subsection at the premises for a period of five years. [Such records need not be maintained for distillate oil, motor vehicle fuel, aircraft fuel, or gaseous fuel, provided such fuels have a sulfur content below (0.3% by weight) (dry basis) and are the only fuels combusted at the affected unit. This exemption shall not apply when such fuels are combusted in combination with other fuels having sulfur contents above (0.3% by weight) (dry basis).]

**Sec. 7. The Regulations of Connecticut State Agencies are amended by adding section 22a-174-19b as follows:**

**(NEW)**

**Section 22a-174-19b. Fuel Sulfur Content Limitations for Stationary Sources.**

**(a) Definitions.** For the purposes of this section, the definitions provided in this subsection shall apply. Terms used in this section that are not defined in this subsection are as defined in section 22a-174-1 of the Regulations of Connecticut State Agencies.

(1) “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.

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

(3) “Fuel” means distillate fuel oil, residual oil, blends of distillate fuel oil and biodiesel fuel, blends of residual oil and biodiesel fuel, aviation fuel or kerosene.

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

(5) “Sulfur dioxide” or “SO<sub>2</sub>” means a gas that at standard conditions has the molecular form SO<sub>2</sub>.

**(b) Applicability.** Except as provided in subsection (c) or (e) of this section, this section applies to any person who, on or after July 1, 2014, sells, supplies, offers for sale, stores, delivers

or exchanges in trade in the state of Connecticut any fuel for combustion in a stationary source in the state of Connecticut and to any person who, on or after July 1, 2014, combusts any fuel in a stationary source within the state of Connecticut.

**(c) Exemptions.** The persons and fuels identified in this subsection are exempt from regulation pursuant to this section.

(1) The requirements of this section shall not apply to the fuel combusted in a mobile source.

(2) This section shall not apply to any person storing fuel in the state of Connecticut for shipment, sale and use outside of the state of Connecticut.

(3) Fuel stored in the state of Connecticut that meets any applicable sulfur content limitation at the time it is stored in the state of Connecticut may be stored, offered for sale, sold, delivered or exchanged in trade for combustion in the state of Connecticut and combusted in the state of Connecticut even if the sulfur content limitation applicable at the time of storage has been changed subsequent to the date of storage.

(4) This section shall not apply to a person combusting fuel in fuel-burning equipment undergoing testing as part of a research and development program.

(5) The requirements of this section shall not apply to:

(A) A person combusting fuel in a stationary source for which the fuel is subject to limitation under section 22a-174-19a of the Regulations of Connecticut State Agencies; or

(B) A person selling or storing fuel for sale to a person identified in subparagraph (A) of this subdivision.

(6) The requirements of this section shall not apply to a person who sells, supplies, offers for sale, stores for sale or combusts number two heating oil subject to the sulfur content limitations of section 16a-21a of the Connecticut General Statutes.

**(d) Fuel oil sulfur content limitations.**

(1) No person shall store, offer for sale, sell, deliver or exchange in trade, for combustion in a stationary source in the state of Connecticut, fuel that contains sulfur in excess of the applicable limitation set forth in Table 19b-1, except as provided in subsection (c) or (e) of this section.

(2) No person shall combust fuel in a stationary source that contains sulfur in excess of the applicable limitation set forth in Table 19b-1 of this section, except as provided in subsection (c) or (e) of this section.

(3) Notwithstanding compliance with subdivision (1) or (2) of this subsection, 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 stationary

source combusting fuel if the commissioner determines that operation of such equipment interferes with the attainment or maintenance of any applicable ambient air quality standard.

<b>Table 19b-1</b>		
<b>Fuel Type</b>	<b>Maximum Fuel Sulfur Content</b>	
	<b>Effective July 1, 2014 through June 30, 2018</b>	<b>Effective on and after July 1, 2018</b>
Distillate fuel oil or distillate fuel oil blended with biodiesel fuel	500 ppm (0.05%) by weight	15 ppm (0.0015%) by weight
Residual oil or residual oil blended with biodiesel fuel	10,000 ppm (1.0 %) by weight	3000 ppm (0.3%) by weight
Aviation fuel combusted in a stationary source	3000 ppm (0.3%) by weight	15 ppm (0.0015%) by weight
Kerosene	400 ppm (0.04%) by weight	15 ppm (0.0015%) by weight

**(e) Fuel shortage emergency.**

(1) Under conditions of fuel shortage emergency, as determined by the commissioner, the commissioner may approve in writing the sale or combustion of fuel with a sulfur content that exceeds the applicable limitation in Table 19b-1 of this section. Any person seeking an approval under this subsection shall submit a request in writing to the Bureau of Air Management, Director of Engineering and Enforcement, where such request shall include:

- (A) A detailed statement describing the reason for the fuel shortage and the acute nature of the shortage. A fuel shortage may be of a type for firing in a particular emission source or generally throughout the state;
- (B) A statement that the acute nature of the shortage is the only reason for the request; and
- (C) A signature of a responsible official as described in section 22a-174-2a(a) of the Regulations of Connecticut State Agencies.

(2) The commissioner may approve a request under this subsection provided:

- (A) The requester has provided sufficient information concerning the fuel shortage;
- (B) The request states that the acute nature of the shortage is the sole reason for the request;



- (C) The request is signed by a responsible official; and
  - (D) Approval of the request will not create a condition that will cause imminent danger to the environment or public health.
- (3) The commissioner shall notify the Administrator within five days of granting a request to sell or combust fuel that exceeds the limitations in Table 19b-1 of this section.
- (4) In approving any request under this subparagraph, the commissioner shall specify in writing the period of time such suspension shall be in effect, where such time shall not exceed 90 days.
- (5) The provisions of this subsection shall be pre-empted when the Governor declares that an energy or fuel supply emergency exists.

**(f) Compliance determinations.**

- (1) Any person selling fuel subject to a sulfur content limitation set forth in Table 19b-1 shall determine the sulfur content and quantity of each type of fuel sold.
- (2) Any person selling fuel subject to a sulfur content limitation set forth in Table 19b-1 shall provide certification of the sulfur content of the fuel to each purchaser of fuel.
- (3) Sulfur content shall be analyzed in accordance with American Society for Testing and Material (ASTM) test method D4294-10, *Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy Dispersive X-ray Fluorescence Spectrometry*, or D7039-07, *Standard Test Method for Sulfur in Gasoline and Diesel Fuel by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry*, or the current active version thereof, and automatic sampling equipment shall conform to ASTM test method D4177-95(2010), *Standard Practice for Automatic Sampling of Petroleum and Petroleum Products*, or the current active version thereof.
- (4) A person may request the use of a method to analyze the sulfur content of fuel other than the method identified in subdivision (3) of this subsection, if the method is approved by a voluntary standards body such as ASTM or the International Standards Organization. Such a request shall name and describe the alternative method for which approval is sought, the approving organization, and shall be submitted to the commissioner and Administrator for review and approval. Such alternative method may not be the sole method used to determine the sulfur content of fuel until approved by the commissioner and the Administrator.

**(g) Record keeping and reporting for fuel users and merchants.**

- (1) Persons selling and combusting fuels in Connecticut subject to the requirements of this section shall maintain records of information necessary for the commissioner to determine compliance with the requirements of this subsection.

(2) Any person who sells fuel shall maintain records of the sulfur content of fuels sold, the heating value and the quantities of fuels sold.

(3) Any person combusting fuel shall maintain records of the sulfur content of the fuel combusted and the quantity purchased for combustion. A written certification or a written contract with a fuel supplier is sufficient to satisfy the requirements of this subdivision if the certification or contract identifies:

- (A) The name of the fuel seller;
- (B) The type of fuel purchased;
- (C) The sulfur content of the fuel purchased; and
- (D) The method used to determine the sulfur content of the fuel purchased.

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

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

**(h) Severability.**

Each provision of this section shall be deemed severable, and in the event that any provision in this section is held to be invalid, the remainder of this section shall continue in full force and effect.

**Sec. 8. Section 22a-174-5(a) and (b)(1) of the Regulations of Connecticut State Agencies is amended to read as follows:**

(a) All sampling, emission testing, and reporting shall be done in accordance with procedures prescribed by or acceptable to the Commissioner under [subsection] section 22a-174-5(d) of the Regulations of Connecticut State Agencies or specified in another section of the Regulations of Connecticut State Agencies adopted under chapter 446c of the Connecticut General Statutes.

(b) Sampling and emission testing methods.

(1) Analysis for the sulfur content of liquid fuels shall be done according to the American Society for Testing and Materials method D 4294, D 7039 or the most current methods approved by the American Society for Testing and Materials for the analysis of sulfur content of liquid fuels.

**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 (SO<sub>2</sub>), an air pollutant and a contributor to the formation of the pollutant fine particulate matter (PM<sub>2.5</sub>). The reduction in SO<sub>2</sub> emissions is important to reduce visibility-impairing emissions that contribute to regional haze and protect the public health from the adverse health impacts of SO<sub>2</sub> and PM<sub>2.5</sub> 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 SO<sub>2</sub> is the main contributor to visibility impairment, the MANEVU states agreed to pursue fuel sulfur content limitations for distillate and residual fuel oils.

The significant new elements of this proposal are those of new section 22a-174-19b of the Regulations of Connecticut State Agencies (RCSA), which include fuel sulfur content restrictions for distillate, residual, kerosene and aviation fuels used in all non-mobile equipment such as boilers, turbines and engines. These new fuel sulfur content restrictions are much more stringent than those of current RCSA section 22a-174-19. RCSA section 22a-174-19 is a regulation of general applicability that currently includes fuel sulfur content restrictions higher than those proposed in RCSA section 22a-174-19b. The less stringent fuel sulfur content restrictions of RCSA section 22a-174-19 are eliminated in this proposal. RCSA section 22a-174-19a includes provisions to limit SO<sub>2</sub> emissions from large electric generating units and industrial boilers, and those requirements are not changed by this proposal.

The more stringent fuel sulfur content limitations will mainly impact fuel suppliers, who will need to obtain compliant fuels, maintain records of the sulfur content of fuel sold and provide a certification to purchasers concerning the sulfur content of fuel.

The proposal recognizes that Connecticut General Statutes (CGS) section 22a-198 regulates the sulfur content of fuel used in large electric generating units and industrial boilers, and the regulation does not revise the sulfur content limitations for those sources. The proposal also recognizes the authority of CGS section 16a-21a, as amended by the Connecticut General Assembly in the 2013 legislative session, to limit the sulfur content of home heating oil and offroad diesel fuel. The fuels regulated by CGS section 16a-21a are exempt from regulation under the proposal. However, under CGS section 16a-21a, the sulfur content of home heating oil is subject to the same sulfur content limitations as distillate fuel oil in new RCSA section 22a-174-19b, and the standards apply on the same schedule.

### Attachment 3

## Final Text of the Proposal, Based on Recommendations in the Hearing Officer's Report

**Section 1. Section 22a-174-19 of the Regulations of Connecticut State Agencies is amended to read as follows:**

**(a) [Fuel combustion.** (a)(1) Definitions. As used in subsections (a) through (f) inclusive:

“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 noncommercial 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 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 (SO<sub>2</sub>)” means a colorless gas at standard conditions which has the molecular formula SO<sub>2</sub>.

“Sulfur oxides (SO<sub>x</sub>)” means any compound made up only of sulfur and oxygen which for the purpose of this regulation will be calculated as sulfur dioxide (SO<sub>2</sub>).

(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.] **Reserved.**

(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:  $Y = 0.564 X^{0.85}$  0.85

Lead smelters:  $Y = 0.98 X^{0.77}$  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 [(<sub>2</sub> expressed as sulfur dioxide)]<sub>2</sub> in the stack effluent in concentrations [which] that exceed 500 parts per million at standard temperature and pressure.

**Sec. 2. 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 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 % sulfur, by weight (dry basis);
- (2) Meet an average emission rate of equal to or less than 0.55 pounds SO<sub>2</sub> 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 pounds SO<sub>2</sub> per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at the premises.] **Reserved.**

**Sec. 3. Section 22a-174-19a(d)(1) of the Regulations of Connecticut State Agencies is amended to read as follows:**

(1) No later than the following March 1, for each calendar year, [commencing January 1, 2002,] the owner or operator of each affected unit that is also a Title IV source shall retire one SO<sub>2</sub> allowance, rounded up to the next whole ton, for each ton of SO<sub>2</sub> emitted in the state of Connecticut. This requirement is in addition to any other requirements imposed on the owner or operator of a Title IV source by the Administrator under 40 CFR [Parts]72 and 73.

**Sec. 4. Section 22a-174-19a(e) 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] **The** owner or operator of an affected unit 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 3000 ppm (0.3 % sulfur, by weight) [(dry basis)];
- (2) Meet an average emission rate of equal to or less than 0.33 pounds SO<sub>2</sub> 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 SO<sub>2</sub> per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at a premises.



**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). 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. Section 22a-174-19a(i) 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] subsection (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, or a more recent version of the same method. (Copies of ASTM test methods [D4294 and D4177-82] referenced in this section may be obtained from the Department of Environmental Protection, Bureau of Air Management, 79 Elm Street, 5<sup>th</sup> 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 SO<sub>2</sub> emission rate limits of subsections [(c)(2), (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 SO<sub>2</sub> 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 SO<sub>2</sub> 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 SO<sub>2</sub> emission rate values determined from data measured by a CEMS or other monitoring system; and
- (C) For all affected units, quarterly facility SO<sub>2</sub> emission rate averages, determined by dividing total quarterly SO<sub>2</sub> emissions by total quarterly heat input values for all affected units at the facility.

(3) The owner or operator of an affected unit shall keep the records specified in subdivision (1) or (2) of this subsection at the premises for a period of five years. [Such records need not be maintained for distillate oil, motor vehicle fuel, aircraft fuel, or gaseous fuel, provided such fuels have a sulfur content below (0.3% by weight) (dry basis) and are the only fuels combusted at the affected unit. This exemption shall not apply when such fuels are combusted in combination with other fuels having sulfur contents above (0.3% by weight) (dry basis).]

**Sec. 7. The Regulations of Connecticut State Agencies are amended by adding section 22a-174-19b as follows:**

**(NEW)**

**Section 22a-174-19b. Fuel Sulfur Content Limitations for Stationary Sources.**

**(a) Definitions.** For the purposes of this section, the definitions provided in this subsection shall apply. Terms used in this section that are not defined in this subsection are as defined in section 22a-174-1 of the Regulations of Connecticut State Agencies.

(1) “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.

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

(3) “Fuel” means distillate fuel oil, residual oil, blends of distillate fuel oil and biodiesel fuel, blends of residual oil and biodiesel fuel, aviation fuel or kerosene.

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

(5) “Sulfur dioxide” or “SO<sub>2</sub>” means a gas that at standard conditions has the molecular form SO<sub>2</sub>.

**(b) Applicability.** Except as provided in subsection (c) or (e) of this section, this section

applies to any person who, on or after July 1, 2014, sells, supplies, offers for sale, stores, delivers or exchanges in trade in the state of Connecticut any fuel for combustion in a stationary source in the state of Connecticut and to any person who, on or after July 1, 2014, combusts any fuel in a stationary source within the state of Connecticut.

**(c) Exemptions.** The persons and fuels identified in this subsection are exempt from regulation pursuant to this section.

(1) The requirements of this section shall not apply to the fuel combusted in a mobile source.

(2) This section shall not apply to any person storing fuel in the state of Connecticut for shipment, sale and use outside of the state of Connecticut.

(3) Fuel stored in the state of Connecticut that meets any applicable sulfur content limitation at the time it is stored in the state of Connecticut may be stored, offered for sale, sold, delivered or exchanged in trade for combustion in the state of Connecticut and combusted in the state of Connecticut even if the sulfur content limitation applicable at the time of storage has been changed subsequent to the date of storage.

(4) This section shall not apply to a person combusting fuel in fuel-burning equipment undergoing testing as part of a research and development program.

(5) The requirements of this section shall not apply to:

(A) A person combusting fuel in a stationary source for which the fuel is subject to limitation under section 22a-174-19a of the Regulations of Connecticut State Agencies; or

(B) A person selling or storing fuel for sale to a person identified in subparagraph (A) of this subdivision.

(6) The requirements of this section shall not apply to a person who sells, supplies, offers for sale, stores for sale or combusts number two heating oil subject to the sulfur content limitations of section 16a-21a of the Connecticut General Statutes.

(7) Any fuel in equipment that is leased or rented outside of the state of Connecticut for use in Connecticut may be combusted in the state of Connecticut regardless of the sulfur content, provided that all refueling of such leased or rented equipment performed while in Connecticut complies with the fuel sulfur content limits of Table 19b-1 of this section.

**(d) Fuel oil sulfur content limitations.**

(1) No person shall store, offer for sale, sell, deliver or exchange in trade, for combustion in a stationary source in the state of Connecticut, fuel that contains sulfur in excess of the applicable limitation set forth in Table 19b-1 of this section, except as provided in subsection (c) or (e) of this section.

(2) No person shall combust fuel in a stationary source that contains sulfur in excess of the applicable limitation set forth in Table 19b-1 of this section, except as provided in subsection (c) or (e) of this section.

(3) Notwithstanding compliance with subdivision (1) or (2) of this subsection, 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 stationary source combusting fuel if the commissioner determines that operation of such equipment interferes with the attainment or maintenance of any applicable ambient air quality standard.

<b>Table 19b-1</b>		
<b>Fuel Type</b>	<b>Maximum Fuel Sulfur Content</b>	
	<b>Effective July 1, 2014 through June 30, 2018</b>	<b>Effective on and after July 1, 2018</b>
Distillate fuel oil or distillate fuel oil blended with biodiesel fuel	500 ppm (0.05%) by weight	15 ppm (0.0015%) by weight
Residual oil or residual oil blended with biodiesel fuel	10,000 ppm (1.0 %) by weight	3000 ppm (0.3%) by weight
Aviation fuel combusted in a stationary source	3000 ppm (0.3%) by weight	3000 ppm (0.3%) by weight
Kerosene	400 ppm (0.04%) by weight	15 ppm (0.0015%) by weight

**(e) Fuel shortage emergency.**

(1) Under conditions of fuel shortage emergency, as determined by the commissioner, the commissioner may approve in writing the sale or combustion of fuel with a sulfur content that exceeds the applicable limitation in Table 19b-1 of this section. Any person seeking an approval under this subsection shall submit a request in writing to the Bureau of Air Management, Director of Engineering and Enforcement, where such request shall include:

- (A) A detailed statement describing the reason for the fuel shortage and the acute nature of the shortage. A fuel shortage may be of a type for firing in a particular emission source or generally throughout the state;
- (B) A statement that the acute nature of the shortage is the only reason for the request; and
- (C) A signature of a responsible official as described in section 22a-174-2a(a) of the Regulations of Connecticut State Agencies.

- (2) The commissioner may approve a request under this subsection provided:
  - (A) The requester has provided sufficient information concerning the fuel shortage;
  - (B) The request states that the acute nature of the shortage is the sole reason for the request;
  - (C) The request is signed by a responsible official; and
  - (D) Approval of the request will not create a condition that will cause imminent danger to the environment or public health.
- (3) The commissioner shall notify the Administrator within five days of granting a request to sell or combust fuel that exceeds the limitations in Table 19b-1 of this section.
- (4) In approving any request under this subparagraph, the commissioner shall specify in writing the period of time such suspension shall be in effect, where such time shall not exceed 90 days.
- (5) The provisions of this subsection shall be pre-empted when the Governor declares that an energy or fuel supply emergency exists.

**(f) Compliance determinations.**

- (1) Any person selling fuel subject to a sulfur content limitation set forth in Table 19b-1 shall determine the sulfur content and quantity of each type of fuel sold.
- (2) Any person selling fuel subject to a sulfur content limitation set forth in Table 19b-1 shall provide certification of the sulfur content of the fuel to each purchaser of fuel.
- (3) Sulfur content shall be analyzed in accordance with American Society for Testing and Material (ASTM) test method D4294-10, *Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy Dispersive X-ray Fluorescence Spectrometry*, or D7039-07, *Standard Test Method for Sulfur in Gasoline and Diesel Fuel by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry*, or the current active version thereof, and automatic sampling equipment shall conform to ASTM test method D4177-95(2010), *Standard Practice for Automatic Sampling of Petroleum and Petroleum Products*, or the current active version thereof.
- (4) A person may request the use of a method to analyze the sulfur content of fuel other than the method identified in subdivision (3) of this subsection, if the method is approved by a voluntary standards body such as ASTM or the International Standards Organization. Such a request shall name and describe the alternative method for which approval is sought, the approving organization, and shall be submitted to the commissioner and Administrator for review and approval. Such alternative method may not be the sole method used to determine the sulfur content of fuel until approved by the commissioner and the Administrator.

**(g) Record keeping and reporting for fuel users and merchants.**

- (1) Persons selling and combusting fuels in Connecticut subject to the requirements of this section shall maintain records of information necessary for the commissioner to determine compliance with the requirements of this subsection.
- (2) Any person who sells fuel shall maintain records of the sulfur content of fuels sold, the heating value and the quantities of fuels sold.
- (3) Any person combusting fuel shall maintain records of the sulfur content of the fuel combusted and the quantity purchased for combustion. A written certification or a written contract with a fuel supplier is sufficient to satisfy the requirements of this subdivision if the certification or contract identifies:
  - (A) The name of the fuel seller;
  - (B) The type of fuel purchased;
  - (C) The sulfur content of the fuel purchased; and
  - (D) The method used to determine the sulfur content of the fuel purchased.
- (4) All records made to demonstrate compliance with the requirements of this subsection shall be:
  - (A) Made available to the commissioner to inspect and copy upon request; and
  - (B) Maintained for five (5) years from the date such record is created.

**Sec. 8. Section 22a-174-5(a) and (b)(1) of the Regulations of Connecticut State Agencies is amended to read as follows:**

- (a) All sampling, emission testing, and reporting shall be done in accordance with procedures prescribed by or acceptable to the Commissioner under [subsection] section 22a-174-5(d) of the Regulations of Connecticut State Agencies or specified in another section of the Regulations of Connecticut State Agencies adopted under chapter 446c of the Connecticut General Statutes.
- (b) Sampling and emission testing methods.
  - (1) Analysis for the sulfur content of liquid fuels shall be done according to the American Society for Testing and Materials method D 4294, D 7039 or the most current methods approved by the American Society for Testing and Materials for the analysis of sulfur content of liquid fuels.

**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 (SO<sub>2</sub>), an air pollutant and a contributor to the formation of the pollutant fine particulate matter (PM<sub>2.5</sub>). The reduction in SO<sub>2</sub> emissions is important to reduce visibility-impairing emissions that contribute to regional haze and protect the public health from the adverse health impacts of SO<sub>2</sub> and PM<sub>2.5</sub> 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 SO<sub>2</sub> is the main contributor to visibility impairment, the MANEVU states agreed to pursue fuel sulfur content limitations for distillate and residual fuel oils.

The significant new elements of this proposal are those of new section 22a-174-19b of the Regulations of Connecticut State Agencies (RCSA), which include fuel sulfur content restrictions for distillate, residual, kerosene and aviation fuels used in all non-mobile equipment such as boilers, turbines and engines. These new fuel sulfur content restrictions are much more stringent than those of current RCSA section 22a-174-19. RCSA section 22a-174-19 is a regulation of general applicability that currently includes fuel sulfur content restrictions higher than those proposed in RCSA section 22a-174-19b. The less stringent fuel sulfur content restrictions of RCSA section 22a-174-19 are eliminated in this proposal. RCSA section 22a-174-19a includes provisions to limit SO<sub>2</sub> emissions from large electric generating units and industrial boilers, and those requirements are not changed by this proposal. RCSA section 22a-174-5(a) includes clarifying language and RCSA section 22a-174-5(b)(1) adds an allowable test method.

The more stringent fuel sulfur content limitations will mainly impact fuel suppliers, who will need to obtain compliant fuels, maintain records of the sulfur content of fuel sold and provide a certification to purchasers concerning the sulfur content of fuel.

The proposal recognizes that Connecticut General Statutes (CGS) section 22a-198 regulates the sulfur content of fuel used in large electric generating units and industrial boilers, and the regulation does not revise the sulfur content limitations for those sources. The proposal also recognizes the authority of CGS section 16a-21a, as amended by the Connecticut General Assembly in the 2013 legislative session, to limit the sulfur content of home heating oil and off-road diesel fuel. The fuels regulated by CGS section 16a-21a are exempt from regulation under the proposal. However, under CGS section 16a-21a, the sulfur content of home heating oil is subject to the same sulfur content limitations as distillate fuel oil in new RCSA section 22a-174-19b, and the standards apply on the same schedule.