STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

November 6, 2000

Regulation Review Committee
Room 1800
Legislative Office Building
Hartford, Connecticut 06106

Re: Abatement of Air Pollution - Regulations to reduce sulfur dioxide and nitrogen oxides from power plants and other large sources.

Ladies and Gentlemen:

Pursuant to section 4-170 of the Connecticut General Statutes, I submit for your consideration and approval the enclosed amendments to the Regulations of Connecticut State Agencies ("R.C.S.A."). These amendments concern the adoption of R.C.S.A. section 22a-174-19a, Abatement of Air Pollution, Control of Sulfur Dioxide Emissions from Power Plants and Other Large Stationary Sources of Air Pollution, and the amendment of R.C.S.A. section 22a-174-22, Abatement of Air Pollution, Control of nitrogen oxides emissions ("proposed regulations").

As drafted by the Department of Environmental Protection in close consultation with the Department of Public Utility Control, the proposed regulations represent the maximum air quality benefits achievable without jeopardizing electricity supplies in the state. Accordingly, I strongly urge the committee to approve the proposed regulations.

The proposed regulations will significantly reduce emissions of sulfur dioxide (SO_2) and nitrogen oxides (NO_x) in Connecticut while ensuring the availability of a reliable supply of electricity. The highlights of the proposed regulations include:

- The most stringent year-round SO_2 and NO_x standards in the Nation;
- An estimated 43% reduction of in-state SO_2 emissions from 1999 levels beginning in 2002 representing a decrease of approximately 18,893 tons per year. An estimated additional 23% reduction of in-state SO_2 emissions from 1999 levels beginning in 2003 representing a decrease of approximately 8,900 tons per year;
- An estimated 26% reduction of NO_x emissions from 1999 levels representing a decrease of approximately 3,483 tons per year beginning in 2003;
- A choice of control strategies available to affected sources, including the combustion of cleaner fuels, installation and operation of air pollution control equipment, and use of emissions trading; and

- For SO_2 requirements, appropriate compliance flexibility provisions to address fuel supply emergencies, and appropriate compliance extension provisions to address reliability concerns.

Given the high degree of complexity associated with the proposed regulations, I have included several fact sheets to assist your review. If there are any questions regarding this proposal, please contact Tom Tyler, the Department's Legislative Liaison, at 424-3001. Thank you for your assistance with this matter.

Sincerely,

Arthur J. Rocque, Jr.
Commissioner

AJR/PEF/pef

cc: Tom Tyler, CTDEP

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OVERVIEW OF FINAL PROPOSED REGULATIONS

- **Broad based equitable coverage.** The final proposed regulations apply to 61 large emission units, including all fossil-fuel-fired power plants and large industrial and commercial boilers;

- **Stringent sulfur dioxide (SO_2) and nitrogen oxides (NO_x) emission standards.**

  - **To provide immediate local reductions,** effective January 1, 2002, all affected sources must combust low-sulfur fuel (0.5% sulfur by weight, dry basis), meet a unit-by-unit emission rate of 0.55 pounds of SO_2 per million British Thermal Units ("MMBtu"), or meet a facility-wide monthly average emission rate of 0.50 pounds of SO_2 per MMBtu,

  - **To provide greater regional reductions with the possibility of additional local reductions,** effective January 1, 2003, all fossil-fuel-fired power plants must combust low-sulfur fuel (0.3% sulfur by weight, dry basis), meet a unit-by-unit emission rate of 0.33 pounds of SO_2 per MMBtu, meet a facility-wide monthly average emission rate of 0.30 pounds of SO_2 per MMBtu, or use emission reduction trading provisions to meet a unit-by-unit emission rate of 0.3 pounds of SO_2 per MMBtu, and

  - Effective October 1, 2003 all affected sources must meet NO_x emission rate of 0.15 pounds per MMBtu through the installation and operation of air pollution control equipment, fuel switching or use of emission reduction trading provisions.

- **Sufficient, though limited, use of market based incentives for flexibility in meeting emission standards.** The proposed final regulations:

  - Authorize and provide credit for **early** emission reductions,

  - After local emission reductions are achieved, authorize the use of emission reduction credits and federal Acid Rain Program allowances to comply with the more stringent SO_2 emission standard, and

  - Require the owners and operators of power plants that are also subject to the federal Acid Rain Program to retire one federal Acid Rain Program allowance for every ton of SO_2 emitted in Connecticut.

- **Electric reliability safeguards.** The final proposed regulations contain adequate compliance flexibility provisions to ensure the reliability of the electricity generation and distribution system within Connecticut. These provisions are: quarterly emissions averaging for SO_2; seven-month averaging for NO_x; emissions trading provisions; fuel emergency contingencies; and compliance extension provisions for SO_2 requirements until June 1, 2003.

- **Significant environmental results.** The proposed regulations represent significant annual emission reductions of NO_x and SO_2. The DEP anticipates that the proposed regulations will reduce 1999 baseline SO_2 emissions of 43,529 tons by 18,893 tons per year with the possibility of additional local reductions of 8,900 tons after 2003. The DEP anticipates that the proposed regulations will reduce 1999 baseline NO_x emissions by 3,483 tons per year.

WHAT EMISSION RATES AND WHY?

The DEP selected an emission rate of 0.15 pounds of NO_x per MMBtu based on measures adopted to meet the federal health-based ozone air quality standard.

- Ground-level ozone is the only pollutant for which Connecticut fails to meet federal health-based air quality standards. Controlling NO_x is crucial to meeting the ozone standard because NO_x, during the warmer months, is photochemically transformed into ozone. Current state regulations control NO_x during a five-month period from May through September and will impose an emission rate of 0.15 pounds per MMBtu as of May 1, 2003.

- During the remainder of the calendar year, sources are subject to NO_x emission rates in the range of 0.2 – 0.43 pounds per MMBtu.

- Extending the summertime NO_x emission rate from a five-month control period to a twelve-month control period is the most efficient means to reduce NO_x emissions and achieve overall public health and environmental benefits. The proposed emission standard represents a 26% percent reduction of annual NO_x emissions from 1999 levels.

For the first phase of the sulfur control program, the DEP selected an emission rate of 0.55 pounds of SO_2 per MMBtu.

- The DEP examined previously proposed legislation, current fuel sulfur limits, and available low-sulfur fuels to develop an emissions rate that would achieve the required annual reductions of SO_2 emissions of 30 to 50% beyond 1999 levels. The DEP also recognized that the overall program needed to ensure a local air quality benefit and provide market-based incentives to foster early, meaningful and cost-effective emission reductions.

- The most effective way to reduce SO_2 emissions is to restrict the sulfur content of fuel. The DEP explored readily and commercially available low-sulfur fuels and blends of low-sulfur fuels. Current state regulations limit fuel sulfur content to 1.0% (equivalent to an emission rate of 1.1 pounds per MMBtu). In developing the proposed regulations, the DEP considered 0.7, 0.5 and 0.3% low-sulfur fuel and chose to set a fuel sulfur standard of 0.5% by weight. This standard is equivalent to an emission rate of 0.55 pounds of SO_2 per MMBtu.

- The DEP anticipated that this standard, implemented on a fuel-neutral basis, would reduce 1999 baseline emissions of 43,529 tons by 18,893 tons per year. The proposed emission standard represents a 43% percent reduction of annual SO_2 emissions from 1999 levels.

- In an effort to maximize public health and maximize environmental benefits, the proposed standard is to be implemented on a unit-by-unit basis. Compliance flexibility provisions, however, allow the averaging of facility emissions to 0.5 pounds of SO_2 per MMBtu or the installation of control equipment to meet an emission rate of 0.55 pounds of SO_2 per MMBtu.

Continued on page 2

For the second phase of the sulfur control program, the DEP selected an emission rate of 0.33 pounds of SO_2 per MMBtu.

- Again, the DEP examined previously proposed legislation, current fuel sulfur limits, available low-sulfur fuels and the flexibility provided by the use of market-based incentives to produce further emission reductions.

- Having achieved significant emission reductions with phase one of the proposed regulations, the DEP believed that a program of market-based incentives could be developed to leverage additional local reductions from the largest SO_2 sources in Connecticut (electric generators) without compromising the public health and environmental benefits secured by the phase one emission reductions.

- The DEP consulted with fuel sources and concluded that setting a fuel sulfur standard of 0.3% by weight would be a viable control strategy. This standard is equivalent to an emission rate of 0.33 pounds of SO_2 per MMBtu.

- The DEP anticipated that this standard, implemented on a fuel-neutral basis, could reduce 1999 baseline emissions of 41,250 tons by an additional 8,900 tons per year. For electric generators, the phase two proposed emission standard represents a 67% percent reduction of annual SO_2 emissions from 1999 levels.

- Compliance flexibility provisions allow:

  - The averaging of emissions at a facility to 0.3 pounds of SO_2 per MMBtu,

  - The installation of control equipment to meet an emission rate of 0.33 pounds of SO_2 per MMBtu,

  - The use of emission reduction credits where a source in Connecticut reduces emissions below any applicable limit and then transfers the "credit" to a source that is unable to otherwise comply,

  - The use of federal Acid Rain Program allowances by a source in Connecticut, New York, Northern New Jersey, Rhode Island or Massachusetts that reduced emissions below applicable federal limits. If this is used as a compliance option, a source must retire allowances at a ratio of 4:1.

Additional Important Provisions

The DEP recognizes that there are uncertainties within energy markets that may affect the ability of Connecticut sources to obtain the necessary supplies of compliant fuel. The DEP also recognizes that a safe, reliable supply of electricity is necessary to sustain the welfare of the people of Connecticut. As such, the proposed regulations contain two important provisions:

- **Compliance extension for sulfur dioxide emission standards and fuel sulfur limits.** This provision allows the commissioner of environmental protection to authorize an extension, to expire no later than June 1, 2003, for a source to comply with the emission reduction requirements upon finding, in consultation with the commissioner of DPUC, that the proposed emission standards would substantially impact the reliable generation or delivery of electricity to residential, commercial and industrial users in Connecticut.

- **Fuel emergencies.** This provision allows the commissioner to suspend the low-sulfur fuel requirements when the commissioner finds that the supply of such fuel is inadequate to meet the needs of residential, commercial and industrial users in Connecticut and that such inadequate supply constitutes an emergency. This provision is modeled after section 16a-21a of the general statutes.

WHY QUARTERLY SULFUR DIOXIDE[1] EMISSIONS AVERAGING?

Air pollution control regulations must contain an averaging period over which compliance is measured. DEP considered daily, monthly, quarterly and annual averaging periods before choosing a quarterly averaging period.

- ***Daily averaging is too impractical and costly.*** Daily averaging would require each source to take daily measurements to determine compliance with the applicable standards. Environmentalists and some public health experts advocated this approach because it is the most protective of public health and the environment.

- ***Monthly averaging limits the ability of a source to combust various fuels while maintaining compliance.*** The DEP initially proposed a monthly averaging period to be consistent with current DEP and EPA practices. Upon closer examination, it became clear that monthly averaging would not offer affected sources sufficient flexibility to switch fuels during periods of peak demand.

- ***Annual averaging does not ensure local air quality improvements during the summer and winter months.*** Annual averaging would require each source to demonstrate compliance with the applicable standard over a twelve-month period. Affected sources advocated this approach because it maximized flexibility by allowing longer periods to combust higher sulfur fuels. Upon closer examination, the DEP discarded this approach because:

  - An annual averaging period could not ensure that local air pollution reductions with the concurrent public health benefits would occur during the summer and winter months when air pollution levels are highest, and

  - An annual averaging period means that compliance problems would not be discovered until well after the fact thereby minimizing the source's ability to mitigate any public health and/or environmental harm.

- ***Quarterly (3-month) averaging achieves the public health and environmental benefits while providing operational flexibility.*** In the final proposed regulation, the DEP decided to use a quarterly average because:

  - A 3-month average ensures that there will be reductions in local air pollution,

  - A 3-month average ensures local public health and environmental benefit, and

  - The calendar quarters do not fall squarely within the periods of peak demand. This allows affected sources the flexibility to combust various fuels throughout the peak energy demand seasons (summer and winter),

  - A 3-month average allows the DEP to monitor compliance and ensure that any lapses are limited to the shortest practical time period.

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[1] The DEP has proposed a "seasonal" averaging period for the nitrogen oxide (NOx) standard. The term "seasonal" refers to the 7-month control period (October through April). Connecticut sources have made significant reductions in NOx emissions since 1994, therefore, the DEP is confidant that sources will maintain the presently low rate of emissions during a longer averaging period. By way of comparison, the current average annual NOx emission rate is 0.2 pounds per MMBtu and the proposed annual NOx emission rate is 0.15 pounds per MMBtu.

WHY EMISSIONS TRADING?

Emissions trading provides sources an economic incentive to reduce emissions. Under an emissions trading program, a source that reduces emissions below a pollution standard may sell the emission reductions to another source that cannot either technologically or cost effectively reduce emissions.

Emissions trading is not a pay-to-pollute scheme. Emissions trading recognizes that reducing air pollution is more important than how it is reduced. Emissions trading makes reducing air pollution a collective responsibility of the sources of air pollution, rather than insisting on source-by-source reductions.

Emissions trading does not sacrifice local air quality for distant air quality improvement. It is an option available after each source has reduced emissions through by order, permit or regulation.

Emissions trading is proven to yield the following benefits:

- ***Earlier reductions.*** Emissions trading provides an incentive for sources to reduce emissions before the compliance deadline for the applicable standard.

  Example: Under the DEP's summer nitrogen oxides (NO_x) emission reduction program, sources who reduced emissions in 1997 and 1998 received credit for those reductions, which could be used after the May 1, 1999 compliance date. As a result, sources reduced 446 tons of NO_x during 1997 and 1998. These emission reductions likely would not have been made but for the incentive provided by emissions trading.

- ***Deeper reductions.*** Emissions trading provides an incentive for sources to reduce emissions beyond the applicable standard.

  Example: Since the implementation of the DEP's year-round NO_x reduction program in 1995, sources have reduced NO_x emissions by approximately 17,000 tons beyond that otherwise required. These emission reductions likely would not have been made but for the incentive provided by emissions trading.

- ***More cost-effective reductions.*** Emissions trading provides an incentive for sources to reduce emissions cost effectively. Sources that can cost effectively overcontrol emissions are allowed to sell their credited emission reductions to sources that cannot cost effectively reduce emissions. As a result, air pollution is reduced at a lower cost.

  Example: The cost of implementing a 65% reduction in NO_x emissions through the DEP's summer NO_x emission reduction program is estimated to be $80 million less expensive than the cost of implementing the same reductions by traditional source-by-source, command-and-control regulation.

- ***Additional flexibility in implementing reductions.*** Emissions trading provides the ability to set more stringent emission standards or earlier compliance dates than could otherwise be implemented through command-and-control regulation. In addition, the flexibility afforded by emissions trading allows the continued compliant operation of sources and avoids the possible interruption of a reliable supply of electricity.

  Example: Under the DEP's summer NO_x emission reduction program, the DEP is able to implement deep reductions of 65% and 75% in quick succession in 1999 and 2003. Emissions trading allows sources to comply with these reductions without reducing operations or shutting down.

WHY INCLUDE PEAKING UNITS IN THE PROPOSED REGULATIONS?

Peaking units are units that generate electricity during periods of peak demand. During the summer, a peaking unit operates on the hottest days, when air quality is poorest, to provide electricity for air-conditioning. During the winter, a peaking unit operates on the coldest days to provide electricity for heating. Peaking units, because they generate electricity when demand is highest, are generally paid a premium for the electricity they generate. Nothing precludes the operation of peaking units as base-load plants.

Peaking units affect air quality. Across a year, peaking units do not emit high amounts of air pollution because they do not operate much. However, peaking units emit air pollution at higher than normal **rates.**

- On days when they operate (when air quality is bad), they emit high amounts of air pollution and make air quality worse.
- Peaking units have the **potential** to emit high amounts of air pollution because no environmental limit prevents these units from operating at higher utilization rates. If peaking units operate more, they will become an even more significant source of air pollution.

Peaking units are included in the proposed regulations based on their potential emissions and potential impact on air quality, as are other units. When developing the proposed regulations, the DEP considered the types of units that should be included. Based on the following concerns, the DEP decided to include peaking units:

- Peaking units have high potential emissions and a significant impact on air quality.
- Other units are included based on their potential emissions and potential impact on air quality.

Consequences of exempting peaking units. Exempting peaking units from the proposed regulations:

- Will cause higher levels of air pollution on the worst air quality days.
- May lead to increased use of the dirtiest units because the lack of enforceable permit terms for so-called peaking units will make them more economically competitive in a restructured market.
- Is contrary to the theme of equity in Executive Order No.19 that all sources of air pollution must contribute to the solution.

The DEP has incorporated compliance flexibility into the regulations. Recognizing that these units are unique and important to maintaining electric system reliability, compliance flexibility includes:

- Ability to burn cleaner fuels or install pollution controls.
- Ability to use cost-effective emissions trading.
- Ability to seek a compliance extension for the sulfur dioxide limits until June 1, 2003 while developing a compliance strategy with the DEP (e.g., accept permit limits).
- Ability to demonstrate compliance by using quarterly averaging (allows a longer period over which to average emissions to demonstrate compliance and splits peak summer and winter seasons into several periods).

"PORTFOLIO" EMISSIONS AVERAGING – WHY NOT?

Portfolio emissions averaging[1] occurs when the emissions from many sources under common ownership, located throughout an expanded area that is either national, regional or state-wide in scope, are averaged together to comply with applicable emission rate. The DEP considered developing a portfolio-based emission standard for sulfur dioxide, but determined that such an approach would sacrifice local environmental and public health benefits. Given that local emission reductions and further protection of public health are important considerations, the DEP decided to propose a regulatory approach that would provide flexible compliance options but still require local emission reductions.

There are several problems with portfolio-based emissions averaging. The DEP chose not to pursue a portfolio-based approach in the proposed regulations because:

- Portfolio averaging does not ensure that emission reductions will occur in each community where an affected source is located.
- Even though the total number of tons reduced in Connecticut could be equivalent to that proposed by DEP, local emissions at some facilities could, in fact, increase under a portfolio-based approach.
- A portfolio-based approach would add significant complexity to the regulations. This complexity would result in the DEP imposing more onerous record keeping and reporting requirements to eliminate "gaming" within the system.

DEP included several flexible compliance options in the final rule in lieu of portfolio-based emissions averaging.

- **There are a number of options available to meet the proposed standards.** The regulations allow the use of lower sulfur fuels, installation and operation of air pollution control equipment, emissions averaging and the limited use of emission reduction credit trading (including the use of federal Acid Rain Program allowances).
- **Compliance extension for sulfur dioxide emission standards and fuel sulfur limits.** This provision allows the commissioner of environmental protection to authorize an extension, to expire no later than June 1, 2003, for a source to comply with the emission reduction requirements upon finding, in consultation with the commissioner of DPUC, that the proposed emission standards would substantially impact the reliable generation or delivery of electricity to residential, commercial and industrial users in Connecticut.
- **Fuel emergencies.** This provision allows the commissioner to suspend the low-sulfur fuel requirements when the commissioner finds that the supply of such fuel is inadequate to meet the needs of residential, commercial and industrial users in Connecticut and that such inadequate supply constitutes an emergency. This provision is modeled after section 16a-21a of the general statutes.

[1] The DEP is currently developing portfolio emission standards applicable to sources located in North America that will sell electricity into Connecticut in the newly competitive electric power market. The intent of this regulation is to ensure that the import of power into Connecticut in a restructured electric power market does not contribute to our existing air pollution problems. The DEP is statutorily precluded from implementing a portfolio-based regulation until several nearby states (essentially New York and Massachusetts) have adopted similar standards.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
AGENCY FISCAL ESTIMATE OF PROPOSED REGULATION

AGENCY SUBMITTING REGULATION: Department of Environmental Protection **DATE:** August 7, 2000

SUBJECT MATTER OF REGULATION: Abatement of Air Pollution Control of Sulfur Dioxide Emissions in accordance with Executive Order No. 19,

REGULATION SECTION NO.:22a-174-19a **STATUTORY AUTHORITY:** 22a-6 and 22a-174
OTHER AGENCIES AFFECTED: None **EFFECTIVE DATE FOR COST ESTIMATE:** Jan. 1, 2002
ESTIMATE PREPARED BY: Paul E. Farrell **TELEPHONE:** 424-3389

SUMMARY OF STATE COST AND REVENUE IMPACT OF PROPOSED REGULATION

Agency: Department of Environmental Protection **Fund Affected:** None

	First Year FY 01-02	Second Year FY 02-03	Third Year FY 03-04
Number of Positions	*	*	*
Personal Services	*	*	*
Other Expenses	*	*	*
Equipment	*	*	*
Grants	*	*	*
Total State Cost (Savings)	**	**	**
Estimated Revenue Gain (Loss)	**	**	**
Total Net State Cost (Savings)	**	**	**

EXPLANATION OF STATE IMPACT OF REGULATION:

* The adoption and administration of this proposed regulation will be undertaken within the DEP's existing budgetary constraints.

** The proposed regulation will require the largest power plants and industrial sources in the state to reduce sulfur dioxide air emissions. To the extent that the proposed regulations may increase the cost of electricity, such costs may be passed on to the State. However in the recently deregulated electric industry market, market forces may serve to minimize the extent to which such increased costs are passed on to the State (or any other consumer of electric services).

EXPLANATION OF MUNICIPAL IMPACT OF REGULATION:

The proposed regulation will require the largest power plants and industrial sources in the state to reduce sulfur dioxide air emissions. To the extent that the proposed regulations may increase the cost of electricity, such costs may be passed on to Municipalities. However in the recently deregulated electric industry market, market forces may serve to minimize the extent to which such increased costs are passed on to any Municipalities (or any other consumer of electric services).

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

AGENCY FISCAL ESTIMATE OF PROPOSED REGULATION

AGENCY SUBMITTING REGULATION Env. Protection DATE August 8, 2000

SUBJECT MATTER OF REGULATION Control of Nitrogen Oxides Emissions

REGULATION SECTION NO. 22a-174-22 STATUTORY AUTHORITY 22a-174

OTHER AGENCIES AFFECTED None

EFFECTIVE DATE USED IN COST ESTIMATE October 1, 2003

ESTIMATE PREPARED BY Scott N. Koschwitz TELEPHONE 424-3427

SUMMARY OF STATE COST AND REVENUE IMPACT OF PROPOSED REGULATION

Agency DEP Fund Affected General Fund (potential remote impact — see explanation below)*

	1st Year 20 03	2nd Year 20 04	3rd Year 20 05
Number of Positions	*	*	*
Personal Services	0	0	0
Other Expenses	0	0	0
Equipment	0	0	0
Grants	0	0	0
Total State Cost (Savings)	--	--	--
Estimated Revenue Gain (Loss)	--	--	--
Total Net Cost (Savings)	--	--	--

* Positions are included in staffing levels set for the implementation of the 1990 Clean Air Act Amendments and funded through existing Title V fees.

EXPLANATION OF STATE IMPACT OF REGULATION:

The proposed regulation will limit the emissions of nitrogen oxides (NO_x) from large stationary sources, primarily electricity generating units, from October through April annually beginning October 1, 2003. The proposed regulation will limit the rate at which NO_x is emitted to 0.15 pounds per million British Thermal Units (lbs/MMBTU) of heat input.

The proposed regulation complements Regulations of Connecticut State Agencies section 22a-174-22b, The Post-2002 Nitrogen Oxides Budget Program, which will apply to the same units as the proposed regulation. Section 22b will limit emissions of NO_x equivalent to an emission rate of 0.15 lbs/MMBTU from May 1 through September 30 each year beginning in 2003. Section 22b will implement the Connecticut portion of a regional, cap-and-trade program established under the U.S. Environmental Protection Agency's *Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone* (the NO_x SIP Call). This regional, cap-and-trade program may be implemented in as many as twenty-one other states.

The proposed regulation provides for the use of emission reduction credits and NO_x allowances for compliance. This emissions trading is projected to significantly reduce the cost of the emission reductions when compared with the cost of the same emission reductions implemented through command-and-control regulation.

A slight upward pressure on the cost of electricity is expected as electricity generating units either control emissions or engage in emissions trading to comply with the 0.15 lbs/MMBTU emission limit. This pressure may subject Connecticut to a slight increase in electricity rates to the same degree as the other twenty-one states subject to the NO_x SIP Call. However, the effects of electric industry restructuring may offset such an increase.

EXPLANATION OF MUNICIPAL IMPACT OF REGULATION:

Municipalities may be subject to the same slight increase in electricity rates as the state, as discussed above.

ADMINISTRATIVE REGULATIONS

Regulations and notices published herein, pursuant to General Statutes Sections 4-168 and 4-173, are printed exactly as submitted by the forwarding agencies. These, being official documents submitted by the responsible agencies, are consequently not subject to editing by the Commission on Official Legal Publications.

A cumulative list of effective amendments to the Regulations of Connecticut State Agencies may be found in the Connecticut Law Journal dated August 1, 2000.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Notice of Intent to Adopt and Amend Regulations

The Commissioner of Environmental Protection hereby gives notice of a public hearing as part of a rulemaking proceeding. The purpose of this proceeding is to amend the Regulations of Connecticut State Agencies (R.C.S.A.) concerning the abatement of air pollution in accordance with Executive Order No. 19 issued by Governor John G. Rowland on May 17, 2000. By Executive Order No. 19, the Governor has directed the Department take steps to significantly reduce air pollution in the state of Connecticut.

Executive Order No. 19 directed the Commissioner of Environmental Protection to propose the adoption of regulations, in accordance with the provisions of chapter 54 of the general statutes. The proposed regulations are to limit air pollution from sixty-one emission units in the state of Connecticut. These units include power plants and other large stationary sources of air pollution. The proposed regulations are intended to reduce annual sulfur dioxide emissions by an amount at least 30 to 50% greater than current commitments through the establishment of appropriate reduction targets and the implementation of control strategies designed to protect natural resources, reduce acid deposition and further protect public health. The proposed regulations are also intended to reduce annual nitrogen oxide emissions by an amount at least 20 to 30% greater than current commitments through the establishment of appropriate reduction targets and the implementation of control strategies designed to protect natural resources, reduce acid deposition, reduce nitrogen deposition, reduce eutrophication and further protect public health.

Executive Order No. 19 further directed that any proposed regulations include the use of market-based incentives and a system of creditable emission allowances or credits to foster early, meaningful and cost-effective emission reductions. Emission reduction trading is intended to maximize the generation and use of locally created allowances or credits, to the extent practicable, and to create a net air quality benefit for the people of Connecticut.

The public hearing concerns two proposed regulations. The first is the proposed adoption of a new section, R.C.S.A section 22a-174-19a concerning Control of Sulfur Dioxide Emissions from Power Plants and Other Large Stationary Sources of Air Pollution. The second is the proposed amendment of an existing regulation, R.C.S.A. section 22a-174-22 concerning Control of Nitrogen Oxide Emissions. The proposed amendments are more fully described below.

All interested persons are invited to comment on the proposed regulations. Comments should be directed to the attention of Ellen Walton of the Department of Environmental Protection, Bureau of Air Management, Planning and Standards Division, 79 Elm Street, Hartford, Connecticut 06106-5127. In addition to submitting comments at the public hearing described below, comments may be submitted by facsimile to (860) 424-4063 or by electronic mail to ellen.walton@po.state.ct.us. All comments must be received by 5:00 PM, September 22, 2000.

R.C.S.A. section 22a-174-19a – Control of Sulfur Dioxide Emissions from Power Plants and Other Large Stationary Sources of Air Pollution. This regulation is being proposed for adoption to meet the requirements of Executive Order No. 19 as described above. The proposal contains two phases. In phase one, effective December 31, 2001, the owners and operators of fossil fuel fired power plants and large industrial sources of air pollution will be required to significantly reduce sulfur emissions by either combusting low sulfur fuel (0.50 % sulfur by weight, dry basis) or meet a facility-wide monthly average emission rate of 0.50 pounds of sulfur dioxide per million British Thermal Units of heat input. In phase two, effective December 31, 2002, the owners and operators of fossil fuel fired power plants will be required to significantly reduce sulfur emissions by either combusting low sulfur fuel (0.30 % sulfur by weight, dry basis) or meet a facility-wide monthly average emission rate of 0.30 pounds of sulfur dioxide per million British Thermal Units of heat input. Phase two provides additional flexibility in that the owners or operators of affected emission units would be authorized to use discrete emission reduction credits and/or federal acid rain allowances to comply with the more stringent standard. **The Department is also requesting comment on whether there is a demonstrated need for the proposed regulation to contain emission reduction trading provisions. Public comment on this issue will assist the Department in making a determination as to whether the final proposed rule will contain such provisions.**

The Department is also proposing to require additional emission reductions from the owners and operators of power plants that would be subject to both this proposed rule and the federal acid rain program. This provision would require the owners and operators of these sources to surrender one federal acid rain allowance for each ton of sulfur dioxide emitted in Connecticut. This proposal is consistent with the terms of the Executive Order in that it provides a market-based incentive for local air pollution reductions. As a source reduced its sulfur dioxide emissions, it would be required to surrender fewer acid rain allowances. Since acid rain allowances have a market value, there is an economic incentive to preserve these allowances by minimizing sulfur dioxide emissions.

R.C.S.A. section 22a-174-22 – Control of Nitrogen Oxide Emissions. This amendment is being proposed to meet the requirements of Executive Order No. 19 described above. This proposed amendment implements an emission rate of 0.15 pounds of NOx per million British Thermal Units of heat input for the period of October through April. This emission rate limitation will be implemented beginning October 1, 2003 on the sixty-one emission units specified in the executive order. In accordance with the executive order, these proposed amendments authorize the creation and use of NOx discrete emission reduction credits and the use of NOx allowances for compliance.

In addition to the provisions necessary to implement the executive order, this proposed amendment clarifies the emissions trading provisions and provides an alternate means of demonstrating compliance for the owner or operators of emissions units unable to meet emissions testing requirements because of inherent limitations.

In addition to accepting written comments, the Department of Environmental Protection will also hold a public hearing as described below. Due to the anticipated length of this public hearing, periodic recesses may be called at the discretion of the Hearing Officer. Persons appearing at this public hearing are requested to submit a written copy of their statement. However, oral comments will also be made a part of the hearing record and are welcome.

PUBLIC HEARING
Thursday September 21, 2000
10:00 AM – 8:00 PM, Room 2E
Legislative Office Building
300 Capitol Avenue Hartford, CT 06106

Copies of the amendments described above are available for public inspection during normal business hours and may be obtained from Ellen Walton at the Bureau of Air Management, Planning and Standards Division, 5th Floor, 79 Elm Street, Hartford, CT. Additional copies are also available for review at the Law Reference Desk of the Connecticut State Library, the Russell Public Library in Middletown, the Raymond Public Library in Montville, the Torrington Public Library, the New London Public Library, the New Haven Public Library, the Norwalk Public Library and the Bridgeport Public Library. For further information, contact Ellen Walton of the Bureau of Air Management at (860) 424-3027.

The Department of Environmental Protection supports the goals of the Americans with Disabilities Act of 1990. Any individual who needs auxiliary aids for effective communication during this public hearing or in submitting public comments should contact Betty Lirot, ADA Coordinator at (860) 424-3035 or TDD (860) 424-3333 at least one week before the public hearing.

The authority to adopt this amendment is granted by sections 22a-6 and 22a-174 of the Connecticut General Statutes (C.G.S.). This notice is required pursuant to C.G.S. sections 22a-6 and 4-168.

Arthur J. Rocque, Jr.
Commissioner

OFFICE OF HEALTH CARE ACCESS

Notice of Intent to Adopt Regulations And Notice of Public Hearing

In accordance with the provisions of subsection (a) of section 4-168 of the Connecticut General Statutes, notice is hereby given that the Office of Health Care Access, under sections 19a-643, 19a-630 and 19a-613 of the Connecticut General Statutes, proposes to adopt the following regulation entitled "Outpatient Surgical Facility" to amend sections 19a-643-10 and 19a-643-11 and to add a new section 19a-643-13, to read as follows.

Outpatient Surgical Facility

Section 1. Section 19a-643-10 of the Regulations of Connecticut State Agencies is amended by adding new subdivisions (19) through (30) to read as follows:

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I. Introduction

On August 22, 2000, the Commissioner of the Department of Environmental Protection (Department) published a notice of intent to adopt a new section into the Regulations of Connecticut State Agencies (R.C.S.A.) § 22a-174-19a (Section 19a) concerning control of sulfur dioxide (SO_2) emissions from power plants and other large stationary sources, and to amend R.C.S.A. § 22a-174-22 (Section 22) concerning control of nitrogen oxide (NO_x) emissions. Pursuant to such notice, a public hearing was held on September 21, 2000 in room 2E of the Legislative Office Building from 10 a.m. until approximately 8 p.m.

The public comment period for these proposed regulations closed on September 22, 2000 at 5 p.m. This report addresses only comments received by the close of the public comment period. The Department received a number of comments after the close of the public comment period; this report does not individually address them. However, this report addresses such comments to the extent such comments are similar to comments received before the close of the public comment period.

II. Administrative Requirements

A. Hearing Report Content

As required by Connecticut General Statutes (C.G.S.) § 4-168(d), this report describes the amendments to the R.C.S.A. as proposed for hearing; the final wording of the proposed amendments to the R.C.S.A.; a statement of the principal reasons in support of the Department's proposed action; a statement of the principal reasons in opposition of the Department's proposed action and the reasons for rejecting such comments; and a summary of all comments and responses thereto on the proposed action. Those who provided comments are identified in Attachment 1.

B. Adoption of Regulations Pertaining to Activities for which the Federal Government has Adopted Standards or Procedures

In accordance with C.G.S. § 22a-6(h), the Commissioner must clearly distinguish, at the time of the public hearing, all provisions of a proposed regulation that differ from adopted federal standards and procedures, provided: (1) such proposed regulation pertains to activities addressed by adopted federal standards and procedures; and (2) such adopted federal standards and procedures apply to persons subject to the provisions of such proposed regulation. In addition, the Commissioner must provide an explanation for all such provisions in the regulation-making record required under Title 4, Chapter 54 of the C.G.S.

In accordance with the requirements of C.G.S. § 22a-6(h), the Hearing Officers made a statement at the public hearing, which is incorporated into the administrative record for the proposed amendments to Sections 19a and 22. Such statement indicated that the requirements of Sections 19a and 22 are more stringent than any currently effective federal standard or procedure

applicable to any source of air pollution potentially subject to the proposed regulations. The Hearing Officers entered into the record a document of the Department stating:

- The proposed adoption of Section 19a involves emissions standards differing from applicable federal standards. The SO_2 emission standards set forth in Section 19a (including the emissions trading provisions) are more stringent than the following federal requirements:

    - SO_2 emission limits imposed under Title IV of the federal Clean Air Act as implemented by 40 CFR 72;
    - SO_2 emission limits imposed by federal new source performance standards for electric generating boilers and large industrial boilers set forth in 40 CFR 60 subparts D, Da, Db and Dc; and
    - On a case-by-case basis, the proposed SO_2 emission limits may be more stringent than previous permit determinations made by the DEP under the federal new source review/prevention of significant deterioration program pursuant to 40 CFR 51 and section 22a-174-3 of the R.C.S.A.

- The proposed amendment of Section 22 involves emission standards differing from applicable federal standards. The NO_x emission limits set forth in the proposed amendment to Section 22 (including the emissions trading provisions) are more stringent than the following federal requirements:

    - NO_x emission limits developed pursuant to the reasonably available control technology requirement set forth in the Clean Air Act (42 USC § 7511a(b)(1)(A)(ii)(II) and implemented in a federally enforceable Connecticut regulation;
    - NO_x emission limits imposed by federal new source performance standards for electric generating boilers and large industrial boilers set forth in 40 CFR 60 subparts D, Da, Db and Dc; and
    - On a case-by-case basis, the proposed NO_x emission limits may be more stringent than previous permit determinations made by the DEP under the federal new source review/prevention of significant deterioration program pursuant to 40 CFR 51 and section 22a-174-3 of the R.C.S.A.

The more stringent proposed provisions are necessary to implement the measures of the Governor's Executive Order No. 19 concerning emissions of the regulated pollutants to the air.

C. Summary of Executive Order No. 19

On May 17, 2000 Governor John G. Rowland issued Executive Order No. 19. The Executive Order directs the Department to adopt regulations that will limit air pollution from sixty-one large emission units in Connecticut. The Executive Order requires that, no later than May 1, 2003:

- Annual SO_2 emissions be reduced by an amount 30% to 50% greater than current commitments through the establishment of appropriate reduction targets and the

implementation of control strategies designed to protect natural resources, reduce acid deposition, and further protect public health; and

- Annual NO_x emissions from all appropriate sectors be reduced by an amount 20% to 30% greater than current commitments through the establishment of appropriate reduction targets and the implementation of control strategies designed to protect natural resources, reduce acid deposition, reduce nitrogen deposition, reduce eutrophication, and further protect public health.

In addition, the Executive Order requires that any proposed regulations:

- Include the use of market-based incentives and a system of creditable emission allowances or credits to foster early, meaningful and cost-effective emission reductions while maximizing the generation and use of locally created allowances or credits, to the extent practicable, to ensure a net air quality benefit for the people of Connecticut;

- May provide for the phase-in of fuel sulfur standards, to the extent such fuel sulfur limits are adopted as a control strategy; and

- Authorize the Department to temporarily suspend fuel sulfur requirements upon a finding that the availability of fuel which complies with such requirements is inadequate to meet the needs of commercial or industrial fuel users in this state and that such inadequate supply constitutes an emergency, provided that the Department specifies the period of time that such suspension shall be in effect.

The Executive Order also states that it is not to be construed in any way as limiting the authority of the Department to impose emission reduction requirements more stringent than those set forth within order. Nor is the order intended to limit the authority of the Department to enter into regional agreements to effectuate emission reduction requirements on a broader, regional basis.

III. Background, Summary and Text of the Proposed Regulations

A. Background

The Department is vested with the statutory authority necessary to formulate, adopt and amend regulations to control and prohibit air pollution within Connecticut. (See Conn. Gen. Stat. §§ 22a-6 and 22a-174). In addition to the existing statutory authority, the Department is also proceeding in accordance with the terms of Executive Order No. 19, described above.

Local communities throughout Connecticut and several environmental groups have called for further reductions in air pollution from large sources, such as power plants. In response the 1999 General Assembly sought the passage of legislation that would require the reduction of power plant emission emissions for NO_x and SO_2. Legislation was not enacted. Subsequently, the Governor issued Executive Order No. 19 directing the Department to issue administrative regulations to substantially reduce the amount of industrial air pollution emitted within

Connecticut. Administrative regulations are suited to address the issue because they have the force and effect of legislation, and are issued by administrative agencies, such as the Department. It is important to note that the Legislative Regulations Review Committee of the Connecticut General Assembly must approve an agency's administrative regulations before they may be implemented.

B. Development of the Proposed Regulations

Shortly after the effective date of Executive Order No. 19, the Department took steps to involve stakeholders in the development of the proposed regulations. The Department established a subcommittee of the State Implementation Plan Revision Advisory Committee (SIPRAC) to focus on the development of regulations to implement Executive Order No. 19. The subcommittee was open to all interested persons. Information from the meetings was widely distributed and all meetings were broadcast on the Connecticut Network (cable television network that covers state government).

On July 13, 2000 the subcommittee first met. At that meeting, the Executive Order and the Department's proposed regulatory approach, including the timeframe for adoption of regulations, were presented. Also at that meeting, Department staff distributed a first draft of Section 19a, and conducted a question-and-answer session on the Department's proposed approach.

The next subcommittee meeting was held on July 20, 2000. Before this meeting, on July 19, Department staff e-mailed the draft of Section 22 and a revised draft of Section 19a to each subcommittee member. At the meeting the next day, staff discussed the revisions to Section 22, subsection by subsection; conducted a question-and-answer session on the draft of Section 22; and provided a period for comment on draft Section 19a.

The final subcommittee meeting was held on August 10, 2000. On August 9, Department staff e-mailed a revised draft of Section 22 and a further revised draft of Section 19a to each subcommittee member; these drafts were very similar to the regulations ultimately proposed. At the final meeting, staff formally presented the details of revisions to Section 19a; discussed the revisions to Section 22, subsection by subsection; conducted a final question-and-answer session; and provided another period for comment on both draft regulations.

On August 17, 2000 Department staff e-mailed the public notice and the proposed regulations to each subcommittee member, five days before the public notice was published on August 22.

The Department made extraordinary efforts to involve stakeholders in the development of the proposed regulations, to keep them apprised of progress, and to make staff available for comments and questions. The Department also held a public informational meeting on the proposed regulations on September 18, 2000 at the Agriculture Experiment Station in New Haven. The meeting was held after normal business hours and provided interested persons an opportunity to question Department staff on the proposed regulations. On September 19, 2000 Department staff also attended a community meeting in Middletown to answer questions on the proposed regulations. The Department held a public hearing on September 21, 2000. The public hearing, held at the Legislative Office Building in Hartford, ran for almost ten hours so that all

interested persons could comment in full without the imposition of a time constraint. Everyone who wished to speak at the public hearing was able to do so.

C. Role of Recent Health Studies in the Development of the Proposed Regulations

As the Department developed the proposed regulations, many environmental groups notified the Department of a recent study (hereafter, the Levy Study) on the public health impacts of two large coal-fired power plants located in the commonwealth of Massachusetts. The author of the Levy Study also provided the Department with a copy. In various presentations prepared by the Department, assertions were made that the Levy Study "informed" the Department's position on the development of the proposed regulations. The Department staff did read the Levy Study and found that general assertions in the Levy Study agreed with existing positions of the Department. For example, power plant air emissions are both a regional and local problem and air emissions in general will have local health impacts. However, the Department did not, at any time, attempt to quantify the health impacts of PM_{10}, SO_2, or NO_x air emissions from Connecticut power plants in accordance with the findings of the Levy Study. The Department recognizes the existence of various reviews of the Levy Study that reach differing conclusions and call into question the methodologies and findings of the Levy Study. The Department, by issuing the proposed regulations, is not validating the merits of any particular study or viewpoint, but is stating that reducing air pollution will benefit public health. The public health related testimony is summarized later in this report.

D. Summary of the Regulations as Proposed for Public Hearing

1. Proposed Section 19a (SO_2 requirements)

- Phase 1, as of January 1, 2002, of the proposed regulation:
  - Applies to 61 units;
  - Reduces SO_2 emissions locally at each affected source;
  - Requires the use of low-sulfur fuel (i.e., fuel with a sulfur content of 0.5%) or an average emission rate of 0.5 lb/MMBtu;
  - Does not allow emissions trading as a compliance option (intra-facility averaging is allowed);
  - Adopts a market incentive requiring one SO_2 allowance[1] be retired for each ton of SO_2 emitted, in addition to Acid Rain Program requirements (which also require the retirement of one SO_2 allowance for each ton of SO_2 emitted); and
  - Reduces SO_2 emissions by approximately 18,893 tons per year (based on 1999 emissions of 41,250 tons).

- Phase 2, as of January 1, 2003, while preserving the local Phase 1 reductions, of the proposed regulations:
  - Applies to 28 units (i.e., all units subject to the federal Acid Rain Program);

[1] One federal SO_2 allowance is equivalent to one ton of emissions under the federal Acid Rain Program.

- Requires either: fuel with sulfur content of 0.3%, an average emission rate of 0.3 lb/MMBtu or the use of emissions trading to meet the 0.3 lb/MMBtu emission rate;
- Adopts a market incentive allowing intra-facility averaging and inter-facility trading whereby sources may use SO_2 DERCs[2] (one SO_2 DERC for each ton emitted) and SO_2 allowances (four SO_2 allowances for each ton emitted) for compliance;
- As a market incentive, requires each unit to retire one SO_2 allowance for each ton of SO_2 emitted, in addition to Acid Rain Program requirements (which also require the retirement of one SO_2 allowance for each ton of SO_2 emitted); and
- Creates the potential for further reductions at the local level of SO_2 emissions by approximately 8,900 tons per year (based on 1999 emissions of 41,250).

2. Proposed Section 22 (NO_x requirements)

- As of October 1, 2003, the proposed regulation:

  - Applies to 61 units
  - Requires an emission rate of 0.15 lb/MMBtu (from Oct. 1 through April 30)
  - Allows sources to use NO_x DERCs and NO_x allowances[3] for compliance; and
  - Reduces annual NO_x emissions by 3,483 tons per year (based on 1999 emissions).

E. Text of Proposed RCSA Section 22a-174-19a

The Regulations of Connecticut State Agencies are amended by adding a new section 22a-174-19a as follows:

(NEW)

Sec. 22a-174-19a. Control of Sulfur Dioxide Emissions from Power Plants and Other Large Stationary Sources of Air Pollution.

(a) Definitions. For purposes of this section:

(1) "Affected state" has the same meaning as the term "affected states" in Regulations of Connecticut State Agencies section 22a-174-33(a)(3).

(2) "Affected unit" means any emissions unit subject to the provisions of Regulations of Connecticut State Agencies section 22a-174-22b, the Post-2002 Nitrogen Oxides Budget Program.

(3) "Connecticut State SO_2 Retirement Account" means a general allowance tracking system account established by the commissioner under 40 CFR 73.31 for the purpose of permanently holding SO_2 allowances retired by the owners or operators of affected units in accordance with the provisions of subsection (d) of this section.

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[2] A DERC is a discrete emission reduction credit which represents a credit received by a source for overcontrolling emissions beyond all applicable requirements. The Department retires 10% of all created DERCs to ensure a net environmental benefit from the creation and use of DERCs.

[3] A NO_x allowance is limited authorization to emit one ton of NO_x.

(4) "Continuous emissions monitoring system" or "CEMS" means any equipment used to sample, analyze and measure SO_2 emissions to provide a permanent record of such emissions expressed in pounds per MMBtu.

(5) "Emissions unit" has the same meaning as in Regulations of Connecticut State Agencies section 22a-174-33(a)(7).

(6) "Early reduction credit" means a reduction of SO_2 emissions below the most stringent SO_2 emission rate applicable to an affected unit achieved during calendar years 1999, 2000, 2001 or 2002.

(7) "Generation period" means the period of time during which reductions in emissions of an air pollutant are implemented.

(8) "Retire" or "retirement" when referring to SO_2 allowances, means the permanent withdrawal of SO_2 allowances by the Administrator from any allowance tracking system account to the Connecticut SO_2 Allowance Retirement Account in an amount equal to the number of tons of SO_2 emitted by each affected unit.

(9) "Sulfur dioxide" or "SO_2" means a gas that at standard conditions has the molecular form SO_2.

(10) "Sulfur dioxide Discrete Emission Reduction Credit" or "SO_2 DERC" means the reduction of one ton of sulfur dioxide at a stationary source during the generation period, which the commissioner has certified in writing as real, quantifiable, surplus, permanent, and enforceable pursuant to applicable federal requirements.

(11) "Title IV SO_2 allowance" or "SO_2 allowance" means an authorization allocated to a Title IV source by the Administrator, pursuant to Title IV of the federal Clean Air Act (42 USC section 7651d, et seq.) and 40 CFR Parts 72 and 73, to emit up to one ton of SO_2 during or after a specified calendar year.

(12) "Title IV source" means an affected unit that is also subject to Phase II of the acid rain control requirements set forth in Title IV of the federal Clean Air Act (42 USC section 7651d, et seq.).

(b) Applicability. This section shall apply to the owner or operator of any affected unit.

(c) Sulfur dioxide emission standards and fuel sulfur limits effective after December 31, 2001. After December 31, 2001, the owner or operator of an affected unit shall:

(1) Combust fuel with a fuel sulfur limit of equal to or less than 0.5% sulfur, by weight (dry basis); or

(2) Meet an average emissions rate of equal to or less than 0.5 pounds SO_2 per MMBtu calculated over an individual calendar month for one or more affected units at a premises.

(d) Additional Emission Reduction Requirements.

(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_2 allowance, rounded up to the next whole ton, for each ton of SO_2 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 owner or operator of an affected unit shall retire the necessary amount of SO_2 allowances by transferring such allowances to the Connecticut State SO_2 Retirement Account established by the commissioner pursuant to 40 CFR 73.31 and administered by EPA under the provisions of 40 CFR Parts 72 and 73. The transfer of SO_2 allowances in accordance with the provisions of this subdivision shall occur by March 1 of each calendar year.

(3) Any SO_2 allowance retired in accordance with the provisions of this subsection shall be an allowance originally issued by the Administrator to a Title IV source located in the state of Connecticut. If a sufficient number of such allowances are not available, allowances from any affected state may be used to comply with the provisions of this subsection.

(e) Sulfur dioxide emission standards and fuel sulfur limits effective after December 31, 2002. Notwithstanding the provisions of subsection (b) of this section and except as provided in subsection (f) of this section, this subsection shall apply, after December 31, 2002, to the owner or operator of a Title IV source that is also an affected unit. After December 31, 2002, such owner or operator shall:

(1) Combust fuel with a fuel sulfur limit of equal to or less than 0.3% sulfur, by weight (dry basis);

(2) Meet an average emissions rate or equal to or less than 0.3 pounds SO_2 per MMBtu calculated over an individual calendar month for one or more affected units at a premises; or

(3) Meet an average emissions rate equal to or less than 0.3 pounds SO_2 per MMBtu calculated over an individual calendar month in accordance with the provisions of subsection (h) of this section, provided that the actual monthly average emissions rate for the affected unit or units at a premises does not exceed 0.5 pounds SO_2 per MMBtu.

(f) Compliance extension for post-2002 sulfur dioxide emission standards and fuel sulfur limits.

(1) The commissioner may authorize up to a one year extension to comply with the requirements of subsection (e) of this section upon the request of an owner or operator of an affected unit that is also a Title IV source provided such request is filed with the commissioner no later than six months after the effective date of this section.

(2) The commissioner shall hold a public hearing prior to granting or denying such request for an extension. The commissioner shall only grant a request for an extension under this subsection upon a finding by the Department of Public Utility Control that the provisions of this section will preclude the reliable delivery of electricity to residential, commercial and industrial users in the state.

(3) The commissioner may impose conditions and limitations when granting a request for an extension under this subsection. If the owner or operator of an affected unit proves, to the satisfaction of the commissioner, that compliance with subsection (e) of this section is not technologically or economically feasible at such source, the commissioner may allow the owner or operator of an affected unit, through a permit or order, to comply with the requirements of subsection (e) of this section by reconstructing the existing affected unit, or replacing the existing affected unit with a new source. Such reconstruction or replacement shall be completed no later than June 1, 2003.

(4) Prior to the completion of any reconstruction or replacement of an affected unit under subdivision (3) of this subsection, the SO_2 emission rate from the existing affected unit not exceed the more restrictive of:

(A) The emission limitation applicable to the source on January 1, 2002; or

(B) The emission limitation of any current permit or order issued by the commissioner for such source.

(g) Fuel Emergencies.

(1) The commissioner may suspend the requirements of subsection (c)(1) or (e)(1) of this section for the owner or operator of any affected unit using a low sulfur fuel to comply with the requirements of this section. Such suspension shall only be made when the commissioner finds that the availability of fuel that complies with such requirements is inadequate to meet the needs of commercial and industrial users in this state and that such inadequate supply constitutes an emergency.

(2) The commissioner shall specify in writing the period of time for which the suspension described in subdivision (1) of this subsection shall be in effect.

(3) Upon termination of any suspension of fuel sulfur limits made pursuant to this subsection, the owner or operator of an affected unit shall calculate the amount of excess SO_2 emissions attributable to such suspension. The owner or operator of such affected unit shall report the amount of excess SO_2 emissions to the commissioner no later than thirty days after termination of the suspension. If excess SO_2 emissions from any affected unit exceed fifty tons, the commissioner may require that the owner or operator of such unit offsett such excess emissions through the use of emission reduction trading in accordance with the provisions of subsection (h) of this section.

(h) Emissions reduction trading.

(1) The owner or operator of an affected unit may use SO_2 DERCs or SO_2 allowances to comply with the applicable emission limitations set forth in subsection (e) of this section pursuant to a permit or order issued by the commissioner, provided that the monthly average emission rate for the affected unit or units at a premises does not exceed 0.5 pounds SO_2 per MMBtu;

(2) Such owner or operator shall retire one (1) SO_2 DERC for each ton or part thereof of SO_2 emitted in excess of the applicable emission limitation in subsection (e) of this section. In the alternative, an owner or operator may retire four (4) SO_2 allowances for each ton or part thereof of SO_2 emitted in excess of the applicable emission limitation in subsection (e).

(3) Any creation or use of SO_2 DERCs for the purpose of this subsection shall be consistent with the provisions of 40 CFR 51, Subpart U and the U.S. Environmental Protection Agency's "Emission Trading Policy Statement," published December 4, 1986 (Federal Register, Volume 51, page 43814).

(4) The owner or operator of any affected facility using SO_2 allowances as a means of compliance with the provisions of this subsection and subsection (e) of this section shall ensure that such allowances were originally issued by the Administrator to a Title IV source located in the state of Connecticut. If a sufficient number of such allowances are not available, allowances from any affected state may be used to comply with the provisions of this subsection.

(5) The owner or operator of any affected unit that reduces SO_2 in calendar years 1999, 2000, 2001 or 2002 may request that the commissioner approve such early reductions in writing by permit or order provided that such reductions are:

(A) Real, quantifiable, surplus and enforceable; and

(B) Based on an emissions rate that is the most stringent of:

(i) 0.3 pounds SO_2 per MMBtu,

(ii) permitted allowable emissions of the affected unit,

(iii) actual emissions of the affected unit during calendar year 1999, or

(iv) average actual emissions of the affected unit during any two (2) consecutive and representative calendar years.

(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 purchased or combusted by an affected unit, the owner or operator shall make and keep daily records of fuel sulfur content and any associated analysis, fuel flow totals, and monthly records of average fuel sulfur content. 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.

(2) The owner or operator of an affected unit who demonstrates compliance with this section by meeting the average facility SO_2 emission rate limits of subsections (c)(2) or (e)(2) 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_2 emission rate values determined from data measured by a CEMS in accordance with the applicable provisions of 40 CFR Part 75;

(B) For affected units that are not Title IV sources:

(i) hourly SO_2 emission rate values determined from data measured by a CEMS in accordance with the applicable provisions of either 40 CFR Part 75 or 40 CFR Part 60, or

(ii) if any affected unit does not have a CEMS in accordance with either 40 CFR Parts 60 or 75, then hourly SO_2 emission rate values determined from data measured by a CEMS or other monitoring system approved by the commissioner; and

(C) For all affected units, monthly facility SO_2 emission rate averages, determined by dividing total monthly SO_2 emissions by total monthly heat input values for all affected units at the facility.

(3) The owner or operator of an affected unit shall keep the records specified above 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).

(j) Reporting requirements.

(1) The owner or operator of an affected unit for which the commissioner has issued a final Title V permit shall, as part of any compliance certification pursuant to section 22a-174-33(q)(2) of the Regulations of Connecticut State Agencies, certify in writing to the commissioner compliance with the applicable provisions of this section. Such certification shall include actual monthly SO_2 emissions in tons and either average monthly fuel sulfur content or average monthly emission rate, whichever is applicable, for each affected unit.

(2) The owner or operator of an affected unit for which the commissioner has not issued a final Title V permit shall certify in writing to the commissioner compliance with the applicable provisions of this section on or before March 1 of each year for the previous calendar year. Such certification shall include actual monthly SO_2 emissions in tons and either average monthly fuel sulfur content or average monthly emission rate, whichever is applicable, for each affected unit.

(k) Duty to comply with the most stringent standards applicable to the affected units.

(1) Notwithstanding any provision of this section to the contrary, if the owner or operator of an affected unit is subject to a more stringent emission standard or limitation imposed by order, permit or other applicable law, such owner or operator shall comply with the most stringent emission limitation or standard.

(2) Notwithstanding any provision of this section to the contrary, if the owner or operator of an affected unit is subject to a more stringent monitoring or reporting requirement imposed by order, permit or other applicable law, such owner or operator shall comply with the most stringent monitoring or reporting requirement.

Statement of Purpose: To control emissions of sulfur dioxide from power plants and other large stationary sources of air pollution in accordance with the requirements of Executive Order 19.

F. Text of Proposed RCSA Section 22a-174-22

The Regulations of Connecticut State Agencies are amended to read as follows:

Sec. 22a-174-22. Control of nitrogen oxides emissions

(a) Definitions

For purposes of this section, the following definitions shall apply:

(1) "Contract" means: (A) an agreement between a utility and a customer (or other person) to provide electricity; or (B) a change in any agreement between a utility and a customer (or other person) to provide electricity.

(2) "ELECTRICITY SUPPLIER" MEANS "ELECTRIC SUPPLIER" AS DEFINED IN SECTION 16-1(a)(30) OF THE CONNECTICUT GENERAL STATUTES, AND "MUNICIPAL ELECTRIC UTILITY" AS DEFINED IN SECTION 7-233b(8) OF THE CONNECTICUT GENERAL STATUTES.

[(2)] (3) "Emergency engine" means a stationary reciprocating engine or a turbine engine which is used as a means of providing mechanical or electrical power only during periods of testing and scheduled maintenance or during either an emergency or in accordance with a contract intended to ensure an adequate supply of electricity for use within the state of Connecticut during the loss of electrical power derived from nuclear facilities. The term does not include an engine for which the owner or operator of such engine is party to any other agreement to sell electrical power from such engine to [a utility] AN ELECTRICITY SUPPLIER, or otherwise receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.

[(3)] (4) "Emergency" means an unforeseeable condition that is beyond the control of the owner or operator of an emergency engine and that:

(A) Results in an interruption of electrical power from the [utility] ELECTRICITY SUPPLIER to the [premise] PREMISES;

(B) Results in a deviation of voltage from the [utility] ELECTRICITY SUPPLIER to the [premise] PREMISES of three percent (3%) above or five percent (5%) below standard voltage in accordance with subsection (a) of section 16-11-115 of the Regulations of Connecticut State Agencies [(RCSA)];

(C) Requires an interruption of electrical power from the [utility] ELECTRICITY SUPPLIER to the [premise] PREMISES enabling the owner or operator to perform emergency repairs; or

(D) Requires operation of the emergency engine to minimize damage from fire, flood, or any other catastrophic event, natural or man-made.

[(4)] (5) "Gas" or "gaseous fuel" means natural gas, propane, or any other fuel that is in the gaseous state under standard conditions.

[(5)] (6) "gm/bk hp-hr" means grams per brake horsepower-hour.

[(6)] (7) "lb" means pound.

[(7)] (8) "MMBTU" means million BTU of heat input.

[(8)] (9) "MMBTU/hr" means million BTU of heat input per hour.

[(9)] (10) "MRC" means maximum rated capacity.

[(10)] (11) "Major stationary source of NOx" means [a premise] PREMISES with potential emissions of NOx equal to or greater than fifty (50) tons per year in a serious nonattainment area for ozone, or twenty-five (25) tons per year in a severe nonattainment area for ozone.

(12) "NOx BUDGET PROGRAM SOURCE" MEANS:

(A) A FOSSIL-FUEL-FIRED STATIONARY SOURCE THAT SERVES A GENERATOR WITH A NAMEPLATE CAPACITY OF FIFTEEN MEGAWATTS (15 MW) OR MORE; OR

(B) A FOSSIL-FUEL-FIRED BOILER OR INDIRECT HEAT EXCHANGER WITH A MAXIMUM HEAT INPUT CAPACITY OF 250 MMBTU OR MORE.

(13) "NOX DISCRETE EMISSION REDUCTION CREDIT" OR "NOX DERC" MEANS THE REDUCTION OF ONE TON OF NOX AT A SOURCE DURING A DISCRETE PERIOD OF TIME, WHICH THE COMMISSIONER HAS CERTIFIED AS REAL, QUANTIFIABLE, SURPLUS, PERMANENT, AND ENFORCEABLE.

[(11)] (14) "Other boiler" means a boiler that is not a cyclone furnace, fast-response double-furnace naval boiler, or fluidized-bed combustor.

[(12)] (15) "Other oil" means a fuel that is liquid at standard conditions and is not residual oil.

[(13)] (16) "ppmvd" means parts per million by volume on a dry basis.

[(14)] (17) ["Premise"] "PREMISES" has the same meaning as "PREMISE" IN section 22a-174-1 of the [RCSA] REGULATIONS OF CONNECTICUT STATE AGENCIES.

[(15)] (18) "Reciprocating engine" means a stationary internal combustion engine having a crankshaft turned by linearly reciprocating pistons.

[(16)] (19) "Selective noncatalytic reduction" means emission control technology [which] THAT involves the injection of a chemical reagent at high flue gas temperatures to selectively reduce NOx emissions to nitrogen and water.

[(17)] (20) "Turbine engine" means a stationary internal combustion engine [which] THAT continuously converts an air-fuel mixture into rotational mechanical energy through the use of moving vanes attached to a rotor.

[(18)"Utility" means any electric public service company as defined in section 16-1 of the General Statutes and any municipal electric utility company as defined in section 7-233b of the General Statutes.]

[(19)] (21) "Waste combustor" means an incinerator as defined in subsection 22a-174-18(c) of the REGULATIONS OF CONNECTICUT STATE AGENCIES [RCSA], a resources recovery facility as defined in section 22a-207 of the CONNECTICUT General Statutes, or a sewage

sludge incinerator. The term does not include a flare or an industrial fume incinerator.

(b) Applicability

(1) This section [shall apply] APPLIES to the owner or operator of:

(A) Any of the following sources, PROVIDED SUCH SOURCES ARE LOCATED AT A MAJOR STATIONARY SOURCE OF NOx:

[(A)] (i) [Any] A reciprocating engine [which has] WITH a maximum rated capacity of three (3) MMBTU/hr or more [and which is located at a premise that is a major stationary source of NOx];

[(B)] (ii) [Any fuel-burning] FUEL-BURNING equipment, other than a reciprocating engine, [which has] WITH a maximum rated capacity of five (5) MMBTU/hr or more [and which is located at a premise that is a major stationary source of NOx];

[(C)] (iii) [Any equipment which burns] EQUIPMENT THAT COMBUSTS fuel for heating materials and [which] THAT has a maximum rated capacity of five (5) MMBTU/hr or more [and which is located at a premise that is a major stationary source of NOx];

[(D)] (iv) [Any] A waste combustor [which has] WITH a design capacity of two thousand (2000) pounds or more of waste per hour [and which is located at a premise that is a major stationary source of NOx]; or

[(E)] (B) [Any] fuel-burning equipment, A waste combustor, or A process source [which] THAT has potential emissions of NOx in excess of the following:

(i) One hundred thirty-seven (137) pounds during any day from May 1 through September 30 of any year, [for a] IF SUCH source IS located in a severe nonattainment area for ozone; or

(ii) Two hundred seventy-four (274) pounds during any day from May 1 through September 30 of any year, [for a] IF SUCH source IS located in a serious nonattainment area for ozone.

(2) [Subdivisions (d)(2) to (d)(5)] SUBSECTIONS (d)(1) TO (d)(4), inclusive, and subsections (e) to (k) of this section shall not apply to the owner or operator of a [premise] SOURCE if the actual emissions of NOx since January 1, 1990 from [such premise] THE PREMISES AT WHICH SUCH SOURCE IS LOCATED have not exceeded twenty-five (25) tons in any calendar year [for a premise] IF SUCH PREMISES ARE LOCATED in a severe nonattainment area for ozone, or fifty (50) tons in any calendar year [for a premise] IF

SUCH PREMISES ARE LOCATED in a serious nonattainment area for ozone. Notwithstanding this provision, [subdivision (d)(2)] SUBSECTION (d)(1) through subsection (k), inclusive, of this section shall apply TO SUCH OWNER OR OPERATOR if after May 31, 1995, [such owner or operator exceeds emissions of NOx as follows] ACTUAL EMISSIONS OF NOx FROM SUCH PREMISES EXCEED THE FOLLOWING:

(A) In any calendar year: twenty-five (25) tons for [a premise] PREMISES located in a severe nonattainment area for ozone, or fifty (50) tons for [a premise] PREMISES located in a serious nonattainment area for ozone; or

(B) On any day from May 1 through September 30 of any year: one hundred thirty-seven (137) pounds for [a premise] PREMISES located in a severe nonattainment area for ozone or two hundred seventy-four (274) pounds for [a premise] PREMISES located in a serious nonattainment area for ozone.

(3) Subsections (d) through (k) of this section shall not apply to THE OWNER OR OPERATOR OF an emergency engine. In addition, the actual emissions from emergency engines operating during an emergency shall not be included in the determination of the applicability of [subparagraph] SUBSECTION (b)(2)(B) of this section.

(4) The owner or operator of an emergency engine shall not include the actual emissions from any such engine for purposes of determining applicability in accordance with [subparagraph (B) of subdivision (2)] SUBDIVISION (2)(B) of this subsection, provided such emissions result from operation in accordance with a contract with a utility operating pursuant to a permit or order which:

(A) Requires the permittee to maintain a list which identifies all sources with whom the permittee has a contract;

(B) Requires either the permittee or the owner or operator of the emergency engine to record and submit to the Commissioner data on fuel consumption and hours of operation of any emergency engine operating under such contract; and

(C) Requires the permittee to obtain NOx emission reductions to offset the NOx emissions that result from the generation of customer-contracted electricity.

(5) Notwithstanding subdivision (3) of this subsection, subsections (d) through (k) of this section shall apply to the owner or operator of an emergency engine if, after May 1, 1997, such engine operates for routine, scheduled testing or maintenance on any day for which the Commissioner has forecast that ozone levels will be "moderate to unhealthful," "unhealthful," or "very unhealthful." The Commissioner may exempt, by permit or order, the owner or operator of an emergency engine from this subdivision, if such emergency engine is unattended, the testing is automated and cannot be modified from a remote location.

(c) Exemption.

This section shall not apply to THE OWNER OR OPERATOR OF A mobile [sources] SOURCE.

(d) General requirements.

[(1) Prior to May 31, 1995, the owner or operator of any source subject to this section shall not cause or allow emissions of NOx from such source in excess of the emission limitation specified in Table 22-1 of this section. The owner or operator of any source which is not subject to an emission limitation in Table 22-1 of this section shall not cause or allow emissions of NOx from such source in excess of seven hundred (700) ppmvd.

TABLE 22-1

NOX EMISSION LIMITATIONS PRIOR TO MAY 31, 1995
(IN POUNDS PER MMBTU OF HEAT INPUT)

	GAS-FIRED	OIL-FIRED	COAL-FIRED
Turbine engine	0.9	0.9	NA
Cyclone furnace	0.9	0.9	0.9
Fast-response double-furnace Naval boiler	0.5	0.5	0.9
Other boiler, with MRC of 250 MMBTU/hr or more	0.9	0.3	0.9
Other boiler, with MRC less than 250 MMBTU/hr]	0.2	0.3	0.9

[(2)] (1) On and after May 31, 1995, the owner or operator of [any] A STATIONARY source subject to this section shall:

(A) comply with all applicable emission limitations for such source in subsection (e) of this section;

(B) comply with the provisions for multi-fuel sources in subsection (f) of this section;

(C) reduce the NOx emission rate from such source by forty percent (40%), pursuant to subsection (g) of this section, in accordance with a permit issued by the Commissioner;

(D) reconstruct [the] SUCH source, pursuant to subsection (h) of this section, in accordance with a permit issued by the Commissioner; or

(E) modify the schedule of operations at [the] SUCH source, pursuant to subsection (i) of this section, in accordance with a permit issued by the Commissioner.

(2) ON OCTOBER 1, 2003, AND DURING THE PERIOD FROM OCTOBER 1 THROUGH APRIL 30 EACH YEAR THEREAFTER, THE OWNER OR OPERATOR OF A

STATIONARY SOURCE SUBJECT TO THIS SECTION THAT IS ALSO A NOx BUDGET PROGRAM SOURCE SHALL:

(A) COMPLY WITH THE EMISSION LIMITATION IN SUBSECTION (e)(3) OF THIS SECTION;

(B) RECONSTRUCT SUCH SOURCE PURSUANT TO SUBSECTION (h) OF THIS SECTION, IN ACCORDANCE WITH A PERMIT ISSUED BY THE COMMISSIONER; OR

(C) USE NOX DERCs, OR NOX ALLOWANCES, OR BOTH, PURSUANT TO SUBSECTION (j) OF THIS SECTION, TO ACHIEVE ALL OR A PORTION OF THE NOX EMISSION REDUCTIONS REQUIRED BY THE EMISSION LIMITATION IN SUBSECTION (e)(3) OF THIS SECTION.

[(3) The owner or operator of a source subject to this section may apply in writing to the Commissioner for an extension to comply with subdivision (2) of this subsection. The Commissioner may grant such extension for a period not to exceed one (1) year, through a permit. Such permit shall meet the Administrator's requirements for "Phase-in of Controls Beyond May 1995" (Federal Register, Vol. 57, No. 228, Page 55623). The Commissioner shall submit such permit or order to the Administrator for approval in accordance with the provision of 42 U.S.C. 7401-7671q.]

[(4)] (3) The owner or operator OF A STATIONARY SOURCE SUBJECT TO THIS SECTION, in accordance with an order or permit issued by the Commissioner, may use [emission reduction trading] NOx DERCs AND NOx ALLOWANCES, pursuant to subsection (j) of this section, to achieve all or a portion of the reductions required by this section. The Commissioner shall submit such permit or order to the Administrator for approval in accordance with the provision of 42 U.S.C. 7401-7671q.

[(5)] (4) Nothing herein shall preclude the Commissioner from issuing an order to an owner or operator OF A STATIONARY SOURCE SUBJECT TO THIS SECTION to comply with the requirements of this subsection.

(e) Emission limitations.

(1) The owner or operator of a stationary source subject to this section may, in accordance with [subparagraph (A) of subdivision (d)(2)] SUBSECTION (d)(1)(A) of this section, comply with the requirements of this section by meeting applicable emission limitations specified in Table [22-2] 22-1 of this section. Emission limitations in Table [22-2] 22-1 for turbine engines that are quantified in units of ppmvd shall be corrected to fifteen percent (15%) oxygen.

(2) For any STATIONARY source for which there is no applicable emission limitation in Table [22-2] 22-1, the owner or operator of such source shall not cause or allow emissions of NOx therefrom in excess of the following:

(A) For fuel-burning equipment fired by a fuel other than those fuels cited in Table [22-2] 22-1: 0.3 pounds per MMBTU;

(B) For any waste combustor subject to the requirements of subdivision [(2)] (4) of this subsection: 0.38 pounds per MMBTU;

(C) For any waste combustor not subject to the requirements of [subparagraph (1)(B)] SUBDIVISION (2)(B) of this subsection which has a waterwall furnace: 0.38 pounds per MMBTU;

(D) For any other waste combustor: 0.33 pounds per MMBTU;

(E) For a glass melting furnace: 5.5 pounds of NOx per ton of glass produced;

(F) For a STATIONARY source, other than a glass melting furnace, [which burns] THAT COMBUSTS fuel for heating materials: 180 ppmvd, corrected to twelve percent (12%) carbon dioxide; or

(G) For any STATIONARY source not having an emission limitation in subparagraphs (A) through (F) of this subdivision: seven hundred (700) ppmvd.

(3) FOR A SOURCE SUBJECT TO THIS SECTION THAT IS ALSO A NOx BUDGET PROGRAM SOURCE: 0.15 POUNDS PER MMBTU DURING THE PERIOD FROM OCTOBER 1 THROUGH APRIL 30.

[(2)] (4) In addition to complying with the emission limitation in [subparagraph (1)(B)] SUBDIVISION (2)(B) of this subsection, by May 31, 1995 the owner or operator of any waste combustor [which] THAT combusts refuse derived fuel shall install and operate selective noncatalytic reduction or other NOx emissions control technology capable of reducing the NOx emission rate by at least thirty percent (30%) from the average emission rate in calendar year 1990 on one boiler unit at such facility. If the Commissioner determines that operations during 1990 were not representative of normal operations of the facility, the Commissioner may use another calendar period [which] THAT is more representative. In addition, actual annual average NOx emissions from other boiler units at such facility shall each not exceed 420 tons per year. The Commissioner may consider, in the same manner as for other sources, any emission reduction below 0.38 pounds per MMBTU to be eligible as surplus emissions reductions for purposes of emission reduction credits pursuant to subsection (j) of this section until May 31, 1999.

TABLE [22-2] 22-1
[NOX EMISSION LIMITATION ON AND AFTER MAY 31, 1995]

	Gas-fired	Residual-oil-fired	Other-oil-fired	Coal-fired
Turbine engine with MRC ≥ 100 MMBTU/hr	55 ppmvd	not applicable	75 ppmvd	not applicable
Turbine engine with MRC < 100 MMBTU/hr	0.90 lb/MMBTU	not applicable	0.90 lb/MMBTU	not applicable
Cyclone furnace	0.43 lb/MMBTU	0.43 lb/MMBTU	0.43 lb/MMBTU	0.43 lb/MMBTU
Fast-response double-furnace Naval boiler	0.20 lb/MMBTU	0.30 lb/MMBTU	0.30 lb/MMBTU	0.30 lb/MMBTU
Fluidized bed combustor	not applicable	not applicable	not applicable	0.29 lb/MMBTU
Other boiler	0.20 lb/MMBTU	0.25 lb/MMBTU	0.20 lb/MMBTU	0.38 lb/MMBTU
Reciprocating engine	2.5 gm/bk hp-hr	not applicable	8 gm/bk hp-hr	not applicable

(f) Multi-fuel sources.

(1) When, pursuant to [subparagraph (B) of subdivision (d)(2)] SUBSECTION (d)(1)(B) of this section, the owner or operator of a STATIONARY source SUBJECT TO THIS SECTION switches the use of fuel, converts to a new fuel, or is capable of burning two or more different fuels, such owner or operator shall comply with the requirements of this subsection.

(2) The owner or operator of a STATIONARY source that is capable of firing two or more fuels shall not cause or allow emissions of NOx from such source, in excess of the following:

(A) For fuel-burning equipment that simultaneously fires two or more different fuels: an emission limitation calculated by 1) multiplying the heat input of each fuel combusted by the emission limitation established in this section for such fuel, 2) summing those products, and 3) dividing the sum by the total heat input; or

(B) For fuel-burning equipment that is capable of interchangeably firing two or more fuels: the emission limitation in Table [22-2] 22-1 for the particular equipment and fuel used. Notwithstanding this requirement, the owner or operator of a STATIONARY source that operates exclusively on other oil or gas from May 1 through September 30 of any year and on another fuel during the remainder of the year shall not cause or allow emissions of NOx from such source in excess of 0.2 pounds per MMBTU from May 1 through September 30 and 0.29 pounds per MMBTU for the remainder of the year.

(3) The owner or operator of a STATIONARY source [which] THAT, on or after January 1, 1990, converts the fuel used at such source, shall not cause or allow emissions of NOx from such source in excess of the following:

(A) 0.29 pounds per MMBTU, when [the] SUCH source burned coal to provide more than fifty percent (50%) of its total heat input during the last full calendar year immediately prior to such conversion; or

(B) 0.225 pounds per MMBTU, if [the] SUCH source burned residual oil to provide more than fifty percent (50%) of its total heat input during the last full calendar year immediately prior to such conversion.

(g) Forty percent (40%) reduction.

(1) When the owner or operator of [any] A STATIONARY source SUBJECT TO THIS SECTION reduces the NOx emission rate from such source by forty percent (40%), as provided in [subparagraph (C) of subdivision (d)(2)] SUBSECTION (d)(1)(C) of this section, such owner or operator shall comply with the emission limitations of this section established in a permit issued by the Commissioner. Such permit shall specify such source's NOx emission limitation to be the more restrictive of:

(A) sixty percent (60%) of such source's emission rate at maximum capacity during calendar year 1990; or

(B) sixty percent (60%) of the emission limitation applicable to the source on January 1, 1990.

Such permit shall express the NOx emission limitation in the same units of measurement as the NOx emission limitation that would otherwise apply to such source in subsection (e) of this section.

(2) To determine the actual emission rate specified in [subparagraph] SUBDIVISION (1)(A) of this subsection, such owner or operator shall conduct an emission test at such source under operating conditions representative of those conditions in existence at the source in calendar year 1990, at the maximum capacity at which the source was operated during such calendar year.

(3) If the Commissioner determines that operations during calendar year 1990 were not representative of normal operations from such source, the Commissioner may use another calendar year which is more representative.

(h) Reconstruction or replacement.

(1) If the owner or operator of a STATIONARY source SUBJECT TO THIS SECTION proves, to the satisfaction of the Commissioner, that compliance with subsections (e) or (g) of this section is not technologically or economically feasible at such source, the Commissioner may allow [the] SUCH owner or operator, through a permit, to comply with this section by reconstructing [the existing] SUCH source, or replacing [the existing] SUCH source

with a new source. Such reconstruction or replacement shall be completed no later than [May 31, 1999] JUNE 1, 2003.

(2) Such permit shall require that, prior to the completion of reconstruction or replacement of such source, the NOx emission rate from [the existing] SUCH source not exceed the more restrictive of:

(A) the emission limitation applicable to the source on January 1, 1990; or

(B) the emission limitation of any current permit or order issued by the Commissioner for such source.

[(3) Such permit shall require the owner or operator, by May 31, 1995, to deposit into an escrow account an amount equal to $1,000 multiplied by the number of pounds per day of NOx emission reductions that would be needed by the existing source to achieve compliance with the emission limitations in subsection (e) of this section. The terms of such escrow account and escrow agent required by such permit shall be subject to the approval of the Commissioner. The Commissioner may require that such escrow account be established and properly insured against default at an institution authorized to operate in Connecticut by the State's Commissioner of Banking. In determining the acceptability of an escrow agent, the Commissioner shall consider the reliability and trustworthiness of the person acting as the escrow agent. The Commissioner shall also consider the escrow agent's ability to insure that any money deposited into such escrow account will be withdrawn upon written notification in accordance with such permit.

(4) After completion of such reconstruction or replacement, the owner or operator may, upon written notification by the Commissioner, withdraw funds from the escrow account in accordance with such permit described in subdivision (3) of this subsection. If the owner or operator fails to complete reconstruction or replacement by the date set forth in the permit, such owner or operator shall use such funds to acquire emission reduction credits upon written notice from the Commissioner.]

(i) Schedule modification.

(1) If the owner or operator of a STATIONARY source SUBJECT TO THIS SECTION proves to the satisfaction of the Commissioner that it is not technologically or economically feasible for such source to comply with the emission limitations in subsections (e) through (g) of this section, EXCEPT THE EMISSION LIMITATION IN SUBSECTION (e)(3) OF THIS SECTION, the Commissioner may by permit require NOx emission reductions through modifications of the schedule of NOx-emitting activities and implementation of other measures to reduce NOx emissions at such source. Such permit may include restrictions on operations on any day for which the Commissioner has forecast that ozone levels will be "moderate to unhealthful," "unhealthful," or "very unhealthful."

(2) This subsection shall only apply to the following:

(A) Oil-fired turbine engines or fast-response double-furnace Naval boilers that generate power to create simulated high-altitude atmospheres for the testing of aircraft engines; or

(B) Testing of fuel-burning equipment undergoing research and development.

(j) Emissions reduction trading.

(1) [When the] THE owner or operator of a STATIONARY source SUBJECT TO THIS SECTION [uses emission reduction trading] MAY USE NOx DERCs OR NOx ALLOWANCES OR BOTH to comply with THE APPLICABLE EMISSION LIMITATION CONTAINED IN SUBSECTION (e) OF this section[,]PURSUANT TO A PERMIT OR ORDER ISSUED BY THE COMMISSIONER. [such owner or operator shall achieve reductions in NOx emissions which, at a minimum, are equivalent to those emission reductions that would be achieved by complying with all applicable emission limitations in subsection (e) of this section. The Commissioner may allow the use of emission reduction trading through the issuance of a permit. Such permit shall require the owner or operator, by May 31, 1995, to perform emission trading or to deposit into an escrow account an amount equal to $2000 multiplied by the number of pounds per day of NOx emission reductions needed to achieve compliance with the emission limitations in subsection (e) of this section. Such order or permit also shall require the owner or operator to withdraw and use such funds to acquire ERCs upon written notice from the Commissioner. The terms of such escrow account and escrow agent required by such permit shall be subject to the approval of the Commissioner. The Commissioner shall require that such escrow account be established and properly insured against default at an institution authorized to operate in Connecticut by the State's Commissioner of Banking. In determining the acceptability of an escrow agent, the Commissioner shall consider the reliability and trustworthiness of the person acting as the escrow agent. The Commissioner shall also consider the escrow agent's ability to insure that any money deposited into such escrow account will be withdrawn upon written notification in accordance with such permit.]

(2) SUCH OWNER OR OPERATOR SHALL RETIRE ONE (1) NOx DERC OR ONE (1) NOx ALLOWANCE FOR EACH TON OF NOx EMITTED IN EXCESS OF THE APPLICABLE EMISSION LIMITATION IN SUBSECTION (e) OF THIS SECTION. [In order to comply with subdivision (j)(1) of this subsection, such] SUCH owner or operator shall conduct an emission test or submit another method acceptable to the Commissioner to estimate the [NOx emission limitation shortfall] THE NUMBER OF TONS OF NOx EMITTED IN EXCESS OF SUCH APPLICABLE EMISSION LIMITATION. Such emission test shall be conducted under operating conditions [which] THAT demonstrate the maximum emission rate of such source. Such emission test shall be certified pursuant to subsection (k) of this section.

(3) Any creation or use of [ERCs] NOx DERCs OR NOx ALLOWANCES for the purpose of this subsection shall be consistent with the

provisions of [the U.S. Environmental Protection Agency's "Economic Incentive Program Rules; Proposed Rules," published February 23, 1993 (Federal Register, Volume 58, Number 34),] 40 CFR 51, SUBPART U and the U.S. Environmental Protection Agency's "Emissions Trading Policy Statement," published December 4, 1986 (Federal Register, Volume 51, [Number 233] PAGE 43814).

(k) Emissions testing and monitoring.

(1) The owner or operator of [any] A STATIONARY source subject to an emission limitation under this section, OTHER THAN A NOx BUDGET PROGRAM SOURCE, shall conduct an emission test to demonstrate compliance with this section no later than May 31, 1995. Any such owner or operator which does not install or operate a continuous emissions monitor at such source shall also conduct emission tests at least once every five years. Compliance with the emission limitations of this section shall be determined based on the average of three (3) one-hour tests, each performed over a consecutive 60-minute period and performed in accordance with section 22a-174-5 of the [RCSA] REGULATIONS OF CONNECTICUT STATE AGENCIES. Any analysis of nitrogen content conducted as part of such emission testing shall be in accordance with Method D-3228 of the American Society for the Testing of Materials.

(2) THE OWNER OR OPERATOR OF A NOx BUDGET PROGRAM SOURCE SHALL DEMONSTRATE COMPLIANCE WITH THE EMISSION LIMITATION CONTAINED IN SUBSECTION (e)(3) NO LATER THAN MARCH 31, 2004. ANY SUCH OWNER OR OPERATOR THAT DOES NOT INSTALL OR OPERATE A CONTINUOUS EMISSIONS MONITOR AT SUCH SOURCE SHALL ALSO CONDUCT EMISSION TESTS AT LEAST ONCE IN EACH FIVE-YEAR PERIOD, WITH THE FIRST PERIOD STARTING OCTOBER 1, 2003.

[(2)] (3) The owner or operator shall demonstrate compliance with emission limitations of this section using sampling and analytical procedures approved under 40 CFR Part 60, Appendix A, or under procedures in subsection 22a-174-5(d) of the [RCSA] REGULATIONS OF CONNECTICUT STATE AGENCIES. Sampling shall be conducted when the source is at normal operating temperature and, unless allowed otherwise by the Commissioner in a permit or order, is operating at or above ninety percent (90%) of maximum rated capacity for a fuel-burning source or at or above ninety percent (90%) of design capacity for a waste combustor. Notwithstanding such requirement, any source which has operated in excess of one hundred percent (100%) of its maximum rated capacity at any time since January 1, 1990 shall be tested when the source is operating at or above ninety percent (90%) of its highest operating rate since January 1, 1990.

[(3)] (4) On and after May 31, 1995, the owner or operator of any source that emitted more than one hundred (100) tons of NOx from a single stack during any calendar year beginning January 1, 1990, shall install, calibrate, maintain, operate, and certify a continuous emissions monitor for NOx for each such stack. The owner or operator shall notify the Commissioner in writing at least thirty (30) days prior to conducting any performance or quality assurance testing of any such monitor. Any such testing shall be conducted in accordance with a testing protocol approved

by the Commissioner. Any continuous emission monitor for NOx shall be installed, calibrated and operated in accordance with the performance and quality assurance specifications contained in 40 CFR 60, Subpart A, Appendix B and Appendix F.

[(4)] (5) Unless otherwise specified by the Commissioner in a permit or order, the averaging times for the emission limitations in this section for a source that has, or is required to have, a continuous emissions monitor for NOx shall be twenty-four (24) hours, measured from midnight at the beginning of any day to midnight of the end of that day and shall include all periods of operation, including startup, shutdown, and malfunction.

[(5) The owner or operator of a source subject to this subsection may apply in writing to the Commissioner for an extension to comply with this subsection. The Commissioner may grant such extension for a period not to exceed one (1) year through a permit or order.]

(6) IF THE OWNER OR OPERATOR OF A SOURCE SUBJECT TO SUBSECTION (j)(1) OF THIS SECTION DEMONSTRATES TO THE COMMISSIONER IN WRITING THAT (A) SUCH EMISSION TEST WOULD RESULT IN ACTUAL EMISSIONS GREATER THAN THOSE EMITTED DURING ANNUAL OPERATIONS OF THE SOURCE, OR (B) SUCH EMISSION TEST IS OTHERWISE ECONOMICALLY INFEASIBLE IN LIGHT OF ANY UNIQUE CHARACTERISTICS OF THE SOURCE OR ITS MANNER OF OPERATION, THE COMMISSIONER MAY REQUIRE SUCH OWNER OR OPERATOR TO DEMONSTRATE COMPLIANCE WITH THIS SECTION THROUGH ALTERNATE MEANS. SUCH ALTERNATE MEANS SHALL BE INCORPORATED INTO A PERMIT OR ORDER AND MAY PROVIDE FOR THE USE OF EMISSION REDUCTION TRADING, IN ACCORDANCE WITH THE PROVISIONS OF SUBSECTION (j) OF THIS SECTION. CALCULATIONS RESULTING IN A FRACTIONAL EMISSION REDUCTION CREDIT REQUIREMENTS SHALL BE ROUNDED UP TO THE NEXT WHOLE TON.

(l) Reporting and record keeping.

(1) The owner or operator of [any] A STATIONARY source subject to this section, shall keep the following records:

(A) For an emergency engine, daily records of operating hours of such engine, identifying the operating hours of emergency and non-emergency use;

(B) For any [premise] PREMISES for which [subdivision] SUBSECTIONS (b)(2) or (b)(3) of this section applies, records (e.g. fuel use, continuous emissions monitoring, operating hours) to determine whether the NOx emissions from such [premise] PREMISES on any day from May 1 through September 30, inclusive, are in excess of one hundred thirty-seven (137) pounds for [a premise] PREMISES located in a severe nonattainment area for ozone or two hundred seventy-four (274) pounds for [a premise] PREMISES located in a serious nonattainment area for ozone.

(C) Monthly and annual records (e.g. fuel use, continuous emissions monitoring, operating hours) to determine whether NOx emissions from such [premise] PREMISES in any calendar year are in excess of twenty-five (25) tons for [a premise]

PREMISES located in a severe nonattainment area for ozone or fifty (50) tons for [a premise] PREMISES located in a serious nonattainment area for ozone;

(D) Records of all tune-ups, repairs, replacement of parts and other maintenance;

(E) Copies of all documents submitted to the Commissioner pursuant to this section;

(F) For any source required to install, calibrate, and operate a continuous emissions monitor for NOx under subdivision (k)(3), all charts, electronically stored data, and printed records produced by such continuous emissions monitor;

(G) Procedures for calculating NOx emission rates in (B) and (C) above;

(H) Records of the dates, times, and places of all emission testing required by this section, the persons performing the measurements, the testing methods used, the operating conditions at the time of testing, and the results of such testing;

(I) For any source required to install, calibrate, and operate a continuous emissions monitor for NOx under subdivision (k)(3) of this section, records of all performance evaluations, calibration checks and adjustments on such monitor; a record of maintenance procedures; and all data necessary to complete the quarterly reports required under subdivision (*1*)(4) of this section; and

(J) Any other records or reports required by an order or permit issued by the Commissioner pursuant to this section.

(2) Within thirty (30) days of the completion of emission tests conducted under the requirements of subdivision (k)(1) of this section, the owner or operator of such source shall submit a written report of the results of such testing to the Commissioner.

(3) Within sixty (60) days of the completion of certification tests conducted under the requirements of subdivision (k)(3) of this section, the owner or operator of such source shall submit a written report of the results of such testing to the Commissioner.

(4) The owner or operator of any source required to be equipped with a continuous emissions monitor for NOx under subdivision (k)(3) of this section shall submit to the Commissioner written quarterly reports of excess emissions and CEM malfunctions. Such reports shall be submitted to the Commissioner on or before January 30, April 30, July 30, and October 30 and shall include data for the three calendar month period ending the month before the due date of the report. For each period of excess emissions, such report shall include the date and time of commencement and

completion of such period, the magnitude and suspected cause of the excess emissions and all actions taken to correct the excess emissions. For each malfunction of the CEM system, such report shall include the date and time of when the malfunction commenced and ended, and all actions taken to correct the malfunction.

(5) The owner or operator of [any] A STATIONARY source subject to this section shall retain all records and reports produced pursuant to the requirements of this section for five (5) years. Such records and reports shall be available for inspection at reasonable hours by the Commissioner or the Administrator. Such records and reports shall be retained at the source, unless the Commissioner approves in writing the use of another location in the State.

(6) On or before April 15 of each year, the owner or operator of [any] A STATIONARY source subject to this section shall submit a report on NOx emissions from such source, on a form provided by the Commissioner.

(7) The Commissioner may use data recorded by continuous emissions monitors for NOx and any other records and reports to determine compliance with applicable requirements of this section.

(m) Compliance plans.

(1) The owner or operator of [any] A STATIONARY source [that is] subject to this section shall submit a compliance plan to the Commissioner by September 1, 1994, on forms provided by the Commissioner. Such compliance plan shall document how [the] SUCH source will comply with all applicable requirements of this section. The owner or operator of [any] A STATIONARY source [which] THAT becomes subject to this section after May 1, 1994, shall submit a compliance plan within four (4) months of the date on which [the] SUCH source becomes subject to this section.

(2) Any compliance plan submitted pursuant to this subsection shall include a certification signed by a responsible corporate officer or a duly authorized representative of such officer, as those terms are defined in subdivision 22a-430-3(b)(2) of the [RCSA] REGULATIONS OF CONNECTICUT STATE AGENCIES, and by the individual delegated by such officer with the responsibility of actually preparing the compliance plan. Such certification shall read as follows: "I have personally examined and am familiar with the information submitted in this [compliance plan] DOCUMENT and all attachments THERETO[.], AND I CERTIFY THAT [Based] BASED on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, [I certify that] the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in [this compliance plan or its attachments] THE SUBMITTED INFORMATION may be punishable as a criminal offense UNDER SECTION 22a-175 OF THE GENERAL STATUTES, UNDER SECTION 53a-157b OF THE GENERAL STATUTES, AND IN ACCORDANCE WITH ANY APPLICABLE STATUTE."

(3) If a compliance plan does not contain all measures necessary to comply with all requirements of this section, the Commissioner may notify the owner or operator of such source of the deficiency. Such owner or operator shall resubmit a revised compliance plan within thirty (30) days of receipt of such notice.

(4) NOTWITHSTANDING THE PROVISIONS OF SUBDIVISION (1) OF THIS SECTION, THE OWNER OR OPERATOR OF A NOx BUDGET PROGRAM SOURCE WHO IS SUBJECT TO A REVISED EMISSION STANDARD SHALL NOT BE REQUIRED TO SUBMIT A COMPLIANCE PLAN UNLESS THE COMMISSIONER REQUESTS SO IN WRITING.

STATEMENT OF PURPOSE: TO CONTROL EMISSONS OF NITROGEN OXIDES FROM POWER PLANTS AND OTHER LARGE SOURCES OF OF AIR POLLUTION IN ACCORDANCE WITH THE REQUIREMENTS OF EXECUTIVE ORDER NO. 19.

IV. Statement of Principal Reasons in Support of the Department's Intended Action

A majority of those who submitted comments expressed their general support of the intended action. Many of those who commented believed that further reductions of SO_2 and NO_x from power plants and other large stationary sources of air pollution will further protect the public health and environment of those living closest to the sources, for all the people of Connecticut and for our neighbors throughout New England.

The principal reasons in support of the proposed regulations are:

1. Proposed Sections 19a and 22, by requiring on-site emission reductions from the affected sources, will further protect the public health of those living in close proximity to the sources. Air pollution, while not proven to cause asthma, is known to contribute to episodes in those afflicted with the condition. While it is true that the air quality in Connecticut now meets all federal health based standards (with the exception of ground-level ozone), it is also true that in state asthma rates are increasing at an alarming rate. Until further study can determine the cause of the public health impacts associated with air pollution, the people of Connecticut reasonably expect their government to take steps to further protect them from the environmental triggers that may contribute to asthmatic episodes and other health effects.

   Section 19a embodies an innovative hybrid approach where strict on-site emission reductions are imposed on a source-by-source basis while additional increments of reductions may be achieved through emissions trading. This approach was recently publicized by Environmental Defense, a nationally recognized environmental organization, as being a viable regulatory approach to address air pollutants that raise concerns of localized health impacts and/or issues of environmental justice.[4] The Northeast States for Coordinated Air Use Management (NESCAUM) stated that the Department's approach could serve as a national and regional model to reduce power plant emissions.

[4] See from "Obstacle to Opportunity: How acid rain emissions trading is delivering cleaner air" Environmental Defense, September 2000.

2. The emission reductions anticipated in Sections 19a and 22 will further protect the environment in Connecticut and throughout New England consistent with the Eastern Canadian Premiers'/New England Governors' Acid Rain Action Plan of 1998. The additional annual SO_2 and NO_x reductions will help Connecticut and downwind New England states to:

    - Reduce nitrogen loading to Long Island Sound;
    - Reduce acidification of lakes and streams;
    - Reduce damage to trees at high elevations;
    - Reduce the decay of building materials and paints;
    - Reduce nitrates in drinking water; and
    - Reduce excessive nitrogen loading to aquatic and terrestrial ecosystems.

    As with the discussion on health effects, it is difficult to quantify the precise environmental impact or to place an economic value on such beneficial environmental impact. With this understanding, the Department should not fail to proceed in the absence of scientific certainty as to the precise environmental benefit attributable to the SO_2 and NO_x reductions set forth in the proposed regulations.

V. Statement of Principal Considerations in Opposition to the Department's Intended Action as Urged in Written or Oral Comments and the Department's Reason for Rejecting Such Considerations

A. Principal Considerations Raised in Opposition to the Proposed Regulations

The Department also received numerous comments in opposition to the policies embodied in the proposed regulations. The principal considerations in opposition to the proposed regulations are:

1. Whether public health is at issue and whether the proposed SO_2 emission reductions are necessary. Many comments were directed at discrediting the Levy Study, a recent study on the health effects of criteria air pollutants from two large coal-fired power plants in Massachusetts. Other comments indicated that air quality in Connecticut, with respect to SO_2, is 30% of the applicable federal health-based ambient air quality standard and that if the Department seeks to lower ambient levels of SO_2 or fine particulates then a regional solution should be sought.

2. The proposed regulations will:

    - Negatively impact electric system reliability by forcing early retirement of power generating units;
    - Decrease the availability of low-sulfur fuel oil and substantially increase the cost of such fuel if it is available at all;
    - Restrict fuel diversity within the regional power generating portfolio forcing power generators to increasingly rely on natural gas; and

- In combination with the previous three factors, only serve to drive up prices for energy for the power producers, businesses and consumers within Connecticut, to the detriment of the state's economy as a whole.

3. Sections 19a and 22 are not stringent enough because they do not "level the playing field" among the state's oldest power generating sources and the newest, most efficient, sources, such as gas turbines, that are subject to the most rigorous environmental standards.

4. Sections 19a and 22 should not include market-based incentives of any kind, nor should emissions trading of any kind be utilized. These provisions are but another industry loophole designed to avoid compliance with on-site emission reduction requirements.

5. Sections 19a and 22 exceed the minimum stringency levels set forth in Executive Order No. 19. The Department should reduce the proposed emission limits to be consistent with the minimum expectations of the executive order.

B. Reasons for Rejecting Considerations in Opposition to the Proposed Regulations

1. Based on all comments submitted to the Department, there is little disagreement over whether the emission reductions embodied in Sections 19a and 22 will provide a public health benefit. Rather, the comments diverge on whether the public health benefits that will be achieved are sufficient to protect public health, significant enough to justify the projected cost, or necessary given Connecticut's over-compliance with the federal NAAQS for SO_2 and NO_x.

   The current Connecticut air pollution program is built on the principle that a quality environment and quality of life is contingent upon air pollution reductions from a wide-range of source categories. The Department recognizes that various studies have grappled with determining the precise nature of public health impacts attributable to a single sector of sources. The Department is also aware of other studies and reviews of studies that reach differing conclusions. By proposing Sections 19a and 22, the Department does not validate the merits of any particular study or viewpoint, but states that a 43% reduction in SO_2 emissions and a 26% reduction in NOx emissions should certainly benefit public health.

   Given that there are known adverse health effects attributable to air pollution, the Department should not fail to proceed in the absence of scientific certainty as to the precise and quantifiable public health benefits attributable to the SO_2 and NO_x reductions implemented under Sections 19a and 22.

2. The Department took the issue of electricity reliability into account when drafting Sections 19a and 22. During the regulation development process, the Department contacted fuel suppliers who indicated there would be an adequate supply of low-sulfur fuel. In addition, there was no substantive evidence submitted to the Department demonstrating that low-sulfur fuel would be unavailable.

The Connecticut Department of Public Utility Control concluded in their testimony that Sections 19a and 22 reasonably balance environmental goals with the need to maintain adequate electric generation resources in Connecticut. (See Part VI. E. *infra*) However, if some power producers choose to retire some of the older power generating units on or before 2002, the shortfall in generation capacity will be assumed by new, highly efficient, gas turbines. Several large gas turbines have been constructed and several more are anticipated to be on line within the next few years. For example, the Department has issued construction and operating permits for 2650 MW of new electricity generating capacity since 1997.

The goals of fuel diversity and environmental protection are not mutually exclusive. The Department believes an adequate supply of low-sulfur fuel will be available during the implementation of the first phase of Section 19a. The Department is proposing to include greater flexibility in the final proposed regulation. These provisions, described below, ensure that implementation of the new requirements will not adversely affect the reliability of the electricity supply for Connecticut and allow affected sources time to develop compliance strategies. The Department is proposing to amend Section 19a as follows:

- Broaden the compliance extension provisions of subsection (f) to cover the first phase of the planned SO_2 emission reductions effective on January 1, 2002. This compliance extension is available when the Commissioner finds (after consulting with the DPUC) there to be a substantial impact on the reliable generation or delivery of electricity to residential, commercial and industrial users in the state. The commissioner may then, by permit or order, require compliance by:
  - Reconstruction of the affected source by June 1, 2003,
  - Replacement of the affected source by June 1, 2003, or
  - Impose an emissions cap to ensure local emission reductions until such time that the source demonstrates compliance (no later than June 1, 2003);
- Maintain the suspension of fuel sulfur limits in time of emergency as set forth in subsection (g) and require the source to calculate the excess SO_2 emissions attributable to the suspension and to offset any SO_2 emissions (exceeding 50 tons) through emissions trading provisions of subsection (h); and
- Maintain compliance flexibility by allowing sources to install air pollution control equipment in lieu of combusting low-sulfur fuel or switching to natural gas.

3. Some commentors that criticized the regulations for failing to level the regulatory playing field between old and new power generating sources. This was never the intent of the regulations. Sections 19a and 22, based on Executive Order 19 and the Department's existing statutory authority, are intended to reduce levels of air pollution within Connecticut so as to further protect public health and the environment. It is not the Department's intent to level the regulatory requirements among varying sources by imposing emission standards on older fossil fuel plants based on what a new plant would emit. Nor is it the Department's intent to increase costs on older plants to the point where they are no longer viable. However, the Department realizes that economic forces within the newly competitive power production market will favor those who produce power most efficiently and at least cost. The Department also recognizes that the use of market-based incentives allow the setting of more stringent standards such as those in the proposed regulations.

4. Sections 19a and 22 contain several forms of market-based incentives. These incentives include provisions to generate and use on-site excess emission reductions as a compliance tool (also known as Discrete Emission Reduction Credits or "DERCs"); the use of allowances from regional emission cap programs; and incentives to reduce emissions by placing added costs on air pollution within Connecticut (SO_2 allowance retirement in accordance with Section 19a(d)). Market based incentives are provided in the proposed regulations for two reasons. First, Executive Order No. 19 mandates the use of such incentives within the proposed regulations. Second, the Department's own experience is that market-based incentives provide greater more cost-effective emission reductions than could be required under a traditional command and control regulation.

5. It is true that the SO_2 emissions standards in proposed regulations are more stringent than the reductions called for in the Executive Order. However, the order clearly states that it is not to be construed in any way as limiting the authority of the Department to adopt emission standards that are more stringent than those set forth within order. As stated earlier, the inclusion of market-based incentives allow the setting of more stringent standards such as those in the proposed regulations.

VI. General Comments on Proposed Sections 22a-174-19a and 22a-174-22

The Department received numerous comments on the proposed regulations. While not addressing specific provisions of the proposed regulations, many comments were directed at larger policy issues and implications raised by the proposed regulations. As such, this report will address general comments separate from comments that were directed at specific provisions of the proposed regulations.

General comments have been grouped into four topical areas: public health concerns; environmental protection concerns; reliability of electric service resulting from implementation of the proposed regulations; and the inclusion of market based incentives, such as the use of discrete emission reduction credits and marketable allowances. Due to the large volume of comments concerning the use of market-based incentives, this report separately addresses comments supporting the use of market-based incentives and comments opposing the use of market-based incentives.

A. General Comments on the Public Health Implications of the Proposed Regulations

The Department received public-health-related testimony in support of the proposed regulations from the Connecticut Department of Public Health; a Sc.D. toxicologist on behalf of the Northeast States for Coordinated Air Use Management; a pulmonary physician representing the American Lung Association of Connecticut; a public health physician representing the Connecticut Coalition for Environmental Justice; and a physician representing Physicians for Social Responsibility. Other comments from industry challenged the need for further protecting human health. This report briefly summarizes the public health testimony below.

1. Connecticut Department of Public Health (DPH)

The DPH indicated their support of the Department's proposal. The DPH stated that the proposed regulations would result in a substantial reduction in the tons of SO_2 emissions in Connecticut. The DPH indicated that reductions in air pollution are beneficial for public health because epidemiological and toxicological evidence suggest that exposure to elevated levels of combustion pollutants can lead to numerous adverse health effects, ranging from respiratory symptoms to premature death.

2. Northeast States for Coordinated Air Use Management (NESCAUM) by David R. Brown, Sc.D.

Dr. David Brown, a public health toxicologist, provided a public health perspective on the Department's proposed regulations indicating that regulations that reduce human exposures to particulates, sulfates and NO_x will improve public health. Dr. Brown also acknowledged that Connecticut, by virtue of its small size and geographic location, is also affected by transported air pollution from other states. Therefore, Connecticut must address risks from both sources within Connecticut and transported air pollution.

Dr. Brown provided summary information on air contaminants and the characteristics of the physiological response to these contaminants. First, Dr. Brown noted that irritant gases have been quantitatively linked to local mortality. In addition, the public health effects of these contaminants appear to be greater in the Northeast region of the United States (possibly attributable to differences in the types of particulate pollutants and higher background concentrations due to air pollution transport). Dr. Brown also noted that secondary pollutants (including fine particulates) change as they are transported and can increase in toxicity by absorbing other irritant pollutants during transport. This led Dr. Brown to conclude that the health outcomes and impacts on local populations living near power plants are due to a combination of nearby emissions and transported "background" emissions. With respect to the characteristics of the physiological responses to the various air contaminants, Dr. Brown noted that there are both acute short-term health impacts and reactions, such as asthma attacks, and long-term chronic health impacts, such as cardiopulmonary disease.

Dr. Brown noted that reducing short-term pollutant concentrations near a source would reduce the risk associated with acute reactions such as asthma and lung disease. To reduce the risk associated with long-term reactions such as cardiopulmonary disease, it is necessary in addition to reduce the level of background transported pollutants.

Based on the above, Dr. Brown indicated his belief that the Department's proposed regulations are based on sound public health policy. The first phase of proposed Section 19a will provide timely reductions in the local levels of SO_2 and the second phase will address, in part, the difficult background/transport issue while providing an incentive for additional local reductions.

3. American Lung Association of Connecticut by Thomas Godar, M.D.

Dr. Thomas Godar, formerly the chief of the pulmonary department of Saint Francis Hospital Medical Center, provided public health related testimony on behalf of the American Lung Association of Connecticut. Dr. Godar stated that given the current level of knowledge on the health effects of air pollution, there is no reason to delay imposing more stringent emission standards on power plants in Connecticut.

Dr. Godar spoke of an alarming increase in the incidence of asthma over the past twenty years (rates have doubled and approximately 8% of the general public are afflicted with asthma). More importantly, Dr. Godar noted that a recent University of Connecticut study found that 15% of Hispanic children in Hartford suffer from asthma. In general, the highest asthma rates are clustered in urban areas. While noting that air pollution is not proven to cause asthma, Dr. Godar indicated that elevated levels of air pollution are proven to trigger asthma in individuals who are predisposed to the condition. Dr. Godar also noted that children who suffer from childhood respiratory disease (even if outgrown) are two the three times more likely to develop chronic obstructive pulmonary disease as an adult.

4. Connecticut Coalition for Environmental Justice by Mark Mitchell, M.D., MPH, FACPM

Dr. Mark Mitchell, a public health physician specializing in environmental health, provided public health testimony on behalf of the Connecticut Coalition for Environmental Justice.

Dr. Mitchell indicated that although asthma is not a reportable condition, various findings suggest that there are very high rates of asthma in several Connecticut cities (as high as 25% in New Haven with several neighborhoods in Bridgeport reporting similar rates). Dr. Mitchell also noted that the largest power plants in Connecticut are located in Bridgeport and New Haven. Dr. Mitchell conceded that although power plants have not been proven to *cause* asthma, the air pollution emitted by these plants has been proven to cause asthma attacks in people who already have asthma.

Based on concerns of environmental equity and environmental justice, Dr. Mitchell advocated stringent emission controls be placed on power plants located in urban areas because larger numbers of low income people and people of color are located in such areas.

5. Jonathan Levy, lead author of "Estimated Public Health Impacts of Criteria Pollutant Air Emissions from the Salem Harbor and Brayton Point Power Plants"

Dr. Jonathan Levy, a Research Fellow in the Department of Environmental Health at Harvard School of Public Health and lead author of a recent analysis on the public health impacts of criteria air pollutants from two coal-fired power plants in the commonwealth of Massachusetts, provided public health testimony to the Department.

Dr. Levy discussed his study's findings and indicated that given the proximity of Connecticut to Massachusetts the findings would be quantitatively similar. Dr. Levy also discussed the implications of his study for the Department's proposed regulations. These implications are summarized as follows:

- Power plant emissions represent a regional public health issue with local health implications. The pollutants in question travel long distances, but the individuals living near the power plants are at greater risk for adverse health outcomes, even for secondary pollutants. Therefore, emission reductions outside of Connecticut can benefit public health within Connecticut.

- However, according to his analysis, emission reductions at power plants with close proximity to high-risk sub-populations would yield the greater public health benefits.

- Emissions trading programs have the potential to reduce compliance costs while providing public health benefits as long as such credits are based on real reductions.

- The Department should consider adopting a primary particulate matter (PM_{10}) standard of 0.01 pounds/MMBtu of PM.

Dr. Levy concluded by stating that extrapolating the Massachusetts study to Connecticut implies that the proposed regulations would yield real and quantifiable public health benefits for the state and the region.

6. NRG Energy, Inc. Reports and Reviews of the Levy Study

NRG Energy, Inc., (NRG) a major producer of electric energy and the owner of several of the facilities affected by the Department's proposed regulations did not submit public health testimony, *per se*, but NRG did submit a number of written reports and reviews of the Levy Study. These reports, noted in the order presented in NRG's written comments, are:

- The Levy Study and Its Shortcomings, (no author identified). A fact sheet that raises five issues with the Levy Study and provides a graphic showing a decrease of SO_2 emissions within the Northeastern region of the United States over the past twenty years as asthma rates have increased.

- Commentary on the Levy et al. Report, by George Hidy, Roger McClellan, and Steven Reynolds (Envair/Aerochem for NRG Energy, Inc. August 2000). This report raises a number of technical issues with the Levy Study relating to the reliability of results that stem from the combination of three models in the risk assessment, air quality and health hazard function, and economic valuation.

- Commentary on the Levy et al. Report, by Douglas G. Smith, Sc.D. (ENSR Corporation Risk Assessment Department for NRG Energy, Inc. August 2000). This report, prepared to evaluate the utility of the Levy Report in the context of whether the Massachusetts DEP should consider it important within the context of the MADEP power plant rulemaking,

raises five issues pertaining to the implications of the Levy Study on regulations proposed by the MA DEP.

- Preliminary Review of the Health Impacts Projected in the Levy and Spengler Report: *"Estimated public health impacts of criteria pollutant air emissions from the Salem Harbor and Brayton Point power plants"*, by Edmund Crouch, Ph.D., Laura Green, Ph.D., DABT, Peter Valberg, Ph.D., Steve Zemba, Ph.D. (Cambridge Environmental Inc., July 20, 2000). This report identifies a number of flaws and omissions within the Levy Study. The authors believe that their findings render the health impacts within the Levy Report seriously compromised with regard to use in any rulemaking activity.

7. Wisvest-Connecticut, LLC

Wisvest-Connecticut, LLC (Wisvest) questioned the public health basis for the proposed regulations given that monitored levels of SO_2 indicate that Connecticut's air quality is far better than the SO_2 NAAQS. Wisvest noted that the SO_2 NAAQS is established based on extensive health research and data and is designed to be protective of public health, including the most sensitive populations such as children, the elderly and asthmatics — with a margin of safety.

8. Earth Tech Inc., by Richard J. Londergan, Ph.D.

Dr. Richard Londergan, on behalf of Wisvest-Connecticut, LLC (Wisvest), examined the relationship between SO_2 emissions from the Bridgeport Harbor and New Haven Harbor Stations owned by Wisvest and monitored concentrations of SO_2 and fine-particle sulfates. Dr. Londergan's testimony generally concluded "local air quality measurements show little if any influence of major point sources" of pollutants and that "ambient SO_2 and fine-particle sulfates are dominated by regional transport." Specifically, Dr. Londergan presented four key findings:

- Ambient monitoring indicates that sources in Connecticut do not contribute to either an SO_2 or fine-particle sulfates air quality "problem." Ambient SO_2 concentrations are approximately 75% below the annual and twenty-four-hour SO_2 NAAQS;
- Reductions in SO_2 emissions from major point sources in Connecticut are unlikely to significantly improve air quality;
- Ambient concentrations of SO_2 in urban areas is primarily the product of regional pollutant transport and fuel oil combustion during the heating season; and
- Measured fine-particle sulfate concentrations in southern New England are primarily the product of regional pollutant transport.

9. Cambridge Environmental Inc. by Peter Valberg, Ph.D.

Dr. Peter Valberg, at the request of Wisvest-Connecticut LLC, reviewed the Levy Study and submitted a report containing his findings and conclusions to the Department. Dr. Valberg indicated that the emissions from the two power plants modeled in the Levy Study contribute a

small amount — about 1 percent — to total ambient PM_{10} levels. The rest comes from many other sources, including dust, mobile sources, and upwind power plants. Dr. Valberg notes that the total emissions from the two Wisvest facilities are approximately 25% of those from the power plants modeled in the Levy Study.

Dr. Valberg's written comments explain that air quality in Connecticut, as monitored by the Department, is quite good. Dr. Valberg submitted charts demonstrating that ambient levels of PM_{10}, NO_2, and SO_2 in Bridgeport are well below the federal health-based NAAQS and even below the national average of monitored levels of this pollutant. Dr. Valberg also submitted air quality data for New Haven showing that ambient levels are below the NAAQS for PM_{10}, NO_2, and SO_2, and only slightly above, yet approaching, national averages.

Dr. Valberg also submitted the following comments on asthma attacks:

- Although there has been an increase in asthma prevalence over the past twenty to thirty years, the rise has occurred during a period of time when concentrations of air pollutants in outdoor air have been decreasing;

- Geographical variations in asthma hospitalization rates show sharp differences that cannot be attributed to differences in air pollution;

- The clinical literature on asthma in children does not identify outdoor PM_{10} as a key element in asthma prevalence or asthma attacks; and

- Asthmatics show little or no response during voluntary exposure to much higher levels of air particulate than are characteristic of the outdoor environment.

Dr. Valberg concludes by stating that, based on actual data measured in Connecticut, air quality is very good, and the SO_2, NO_2, and particulate levels are well below NAAQS set to protect public health.

10. Physicians for Social Responsibility by Jefferson H. Dickey, M.D.

Dr. Jefferson Dickey, on behalf of the group Physicians for Social Responsibility, submitted a paper entitled "No Room to Breathe: Health Effects of Criteria Air Pollutants from Power Plants." The paper purports to be a review of one hundred twenty-nine recent medical studies on this topic. The paper concludes that the author's review of medical literature finds that air pollutants emitted by power plants cause many and serious adverse health effects.

11. Pfizer, Inc. by William D. Huhn

Pfizer, Inc. (Pfizer) commented that the potential health impacts of large boiler emissions should be assessed relative to the NAAQS, which is protective of public health with an ample margin of safety. Pfizer believes that any study evaluating the impact of criteria air pollutants on public health should discuss the results relative to the NAAQS since the primary NAAQS define the level of air quality necessary to protect public health with an adequate margin of safety. (See 40

CFR 50.2(d)). Given the enormous disparity in ambient concentrations that the federal government has established as protective of human health and the environment, and the ambient concentrations determined by the Levy Study as "unhealthy," Pfizer believes the Department should reevaluate its consideration of the Levy Study as it relates to the proposed regulations.

In view of the potential significant costs associated with the regulatory proposal, impact on electric reliability and natural gas supplies for the general public, as well as industry in Connecticut, Pfizer recommends that the Department carefully evaluate the Levy Study to ascertain that its conclusions are valid. Pfizer suggests that the Department seek the assistance of the DPH in evaluating the Levy Study and its use as a basis for significant policy decisions by the State.

B. Department's Response to General Comments on the Public Health Implications of the Proposed Regulations

Based on all comments submitted to the Department, there is little disagreement over whether the proposed regulations will provide a public health benefit. Rather the comments diverge on whether the public health benefits that will be achieved by the Department's proposal are sufficient to protect public health or unnecessary given Connecticut's overcompliance with the federal SO_2 and NO_x NAAQS.

In the absence of scientific certainty as to the precise public health benefit attributable to the SO_2 reductions set forth in the proposed regulations, the Department should:

- Work towards establishing a regional program to further reduce the impact of transported primary and secondary sulfate air pollution;
- Continue the petition process, begun in 1999, requesting the United States EPA to set a more stringent secondary NAAQS for SO_2; and
- Continue to monitor, along with the public health community, the quality of life and the environment within Connecticut in order to ascertain whether the proposed regulations, if and when implemented, in conjunction with other air pollution control initiatives produce measurable benefits. Further encourage such monitoring throughout the Northeast.

C. General Comments on the Environmental Benefits of the Proposed Regulations

1. United States Environmental Protection Agency (EPA) Region 1

The EPA strongly commended the Department for proposing the present regulations. The EPA noted that federal and state requirements have achieved substantial reductions of SO_2 and NO_x. As a result of several programs, including the federal Acid Rain Program, the 1995 Connecticut NO_x RACT program, and the 1999 NO_x Budget Program, Connecticut power plants reduced SO_2 emissions by 21% and NO_x emissions by more than 50% between 1990 and 1999.

Nevertheless, the EPA noted, the Department's decision to set even more stringent emission standards for power plants makes sound environmental sense. After taking the emission reductions from the 1990s into account, power plants still emit approximately 74% of the SO_2 and 11% of the NO_x in Connecticut. The additional annual SO_2 and NO_x reductions will help Connecticut and downwind New England states to:

- Reduce acidification of lakes and streams;
- Reduce damage to trees at high elevations;
- Reduce the decay of building materials and paints;
- Reduce nitrates in drinking water;
- Reduce excessive pollutant loading to aquatic and terrestrial ecosystems;
- Reduce ambient concentrations of nitrogen dioxide; and
- Reduce particulate matter (sulfates and nitrates) that contribute to visibility degradation and impact public health.

2. Northeast States for Coordinated Air Use Management

NESCAUM written comments submitted to the Department emphasize NESCAUM's support for the proposed year-round NO_x reduction requirements. Existing regional and national NO_x reduction programs seek to address the role of NO_x emissions in the formation of smog and therefore only require compliance during the five summer months. As such, these efforts fail to address the year-round NO_x contribution to fine particle formation, acid deposition, water eutrophication, and other environmental impacts. NESCAUM believes that the Department's proposal to extend similar levels of NO_x control to beyond the summer months represents a significant and laudable new step.

3. Clean Air Task Force ecosystem consultant, Ellen Baum

Ms. Baum submitted comments indicating that the proposed SO_2 and NO_x emission reductions contained in the proposed regulations will contribute to improvements in ecological systems and visibility in Connecticut and throughout New England and the Canadian Maritimes. With respect to Connecticut, Ms. Baum indicated that year-round nitrogen controls would benefit Long Island Sound. With respect to ecological systems outside of Connecticut, Ms. Baum indicated that the emission reductions from the proposed regulations would limit nitrogen deposition, acid deposition, and improve visibility. Ms. Baum also acknowledged Connecticut's commitment to further reduce acid deposition through the New England Governors' / Eastern Canadian Premiers' 1998 Acid Rain Action Plan.

D. Department's Response to Environmental Protection Testimony

The United States EPA, NESCAUM and the ecosystem consultant agree that the emission reductions anticipated from the implementation of the proposed regulations will benefit the environment. As with the discussion on health effects, it is difficult to quantify the precise environmental impact or to place an economic value on such beneficial environmental impact. With this understanding, the Department should not fail to proceed in the absence of scientific certainty as to the precise environmental benefit attributable to the SO_2 and NO_x reductions set

forth in the proposed regulations. In addition, the recommendations for further action consistent with the response to general public health-related testimony also apply in this instance. To reiterate such recommendations, the Department should:

- Work towards establishing a regional program to further reduce the impact of transported primary and secondary sulfate air pollution;
- Continue the petition process, begun in 1999, requesting the United States EPA to set a more stringent secondary NAAQS for SO_2; and
- Continue to monitor, along with the public health community, the quality of life and the environment within Connecticut in order to ascertain whether the proposed regulations, if and when implemented, in conjunction with other air pollution control initiatives produce measurable benefits. Further encourage such monitoring throughout the Northeast.

E. General Comments on the Implications of the Proposed Regulations with respect to Reliability of Electric Service in Connecticut and Associated Costs

1. Connecticut Department of Public Utility Control

The Connecticut Department of Public Utility Control (DPUC) submitted comments on the proposed regulations limited to assessing the possible effect the proposed regulations could have on the provision and price of electric service. The DPUC concluded that the proposed regulations reasonably balance environmental goals with the need to maintain adequate electric generation resources in Connecticut.

The DPUC analysis took into consideration how the proposed regulations might effect the reliability of electric service in Connecticut and throughout New England. In performing its analysis, the DPUC reviewed installed generation capacity; peak demand; transmission capacity and imported power; reserve margins (excess generating capacity, including imported power); new generation and new transmission; and regional load reduction policies designed to reduce the likelihood of summer capacity shortages. Secondly, the DPUC analyzed the impact of an extreme scenario in which the proposed regulations cause all of the state's older power plants to shut down by 2002. This analysis showed that even if these power plants shut down, sufficient generation capacity would remain, including the necessary reserve margins required by NEPOOL and ISO New England. However, this scenario possibly presents a short-term reliability issue in Fairfield County during 2002. Finally, the DPUC performed initial investigation into the availability and cost of fuel oil meeting the low-sulfur requirement. DPUC stated their belief that such fuel will be readily available at modestly higher prices and that such increased costs are not likely to materially affect retail prices of electricity.

2. NRG Energy, Inc.

NRG did not state that implementation of the proposed regulations is likely to cause reliability problems. However, NRG provided information that Connecticut is only marginally able to produce enough power to meet current demands and barely able to meet projected demands in

the next few years without relying on imported power. Based on DPUC information, NRG indicated that in-state reserves are approximately 2.8% of peak demand and that imported power increases the reserve margin to 33%.

NRG also stated that ISO New England, the nonprofit organization responsible for operating the region's power grid, recommends the use of interruptible rates until a sufficient amount of new generation comes on line. Interruptible rates encourage large industrial users of power to reduce electricity usage when supplies are tight as insurance against "brownouts" or the involuntary disconnection of other customers. NRG states that ISO New England has warned that the uncertainty of new power plant construction coupled with the possible early retirement of existing older plants due to increased environmental regulation could result in New England prematurely losing a substantial percentage of its power generating resources.

NRG also commissioned a consultant to perform a brief study to forecast prices for West Texas Intermediate crude oil and residual fuels on the East Coast (specifically, No. 6 0.3% sulfur low-pour, No. 6 0.3% sulfur high-pour, No. 6 0.7% sulfur and No. 6 1.0% sulfur). The study provided general background information on residual fuel oil and sulfur content, domestic production of low-sulfur fuels on the East Coast, other refinery sources of low-sulfur fuel oil, imported sources of low-sulfur fuel oil, price history, key trends driving price (including seasonality of demand), and commentary on "risks and surprises" (i.e., independent events that can cause the price of crude oil to either increase or decrease). Several scenarios are discussed in the report including, differing (unidentified) rates of low-sulfur fuel consumption by NRG, national economic forecasts (both up and down), base crude oil price forecasts (both up and down), and the potential impact of sulfur control regulations being contemplated in the commonwealth of Massachusetts.

NRG's report also noted that the market size for 0.3% sulfur fuel oil on the East Coast has declined over the last twenty years. During that time, domestic production of low-sulfur fuel has increased while the amount of imported low-sulfur oil has decreased. The report focused on price but, with respect to supply, did not indicate that there is an insufficient supply of low-sulfur oil. The report did note certain events that could affect supply levels (and therefore effect price) such as catastrophic disruption in production (e.g., war, natural disaster, etc.) at any of the several oil refineries around the world. On the other hand, the report indicated that refiners could also invest in new equipment to produce greater quantities of low-sulfur fuel given the market indications in the Northeast. Demand, which also affects price, could be affected by a number of factors such as prolonged cold winter weather. Swings in supply or demand will affect price.

The report concludes that the incremental demand represented by two of four NRG use scenarios would likely only have a modest impact on price

NRG offers an alternative proposal that utilizes fuel diversity and the use of emissions trading programs to ensure reliability. NRG's alternative proposal is discussed later in this report.

3. NOVARCO, Ltd. by Craig Poler

Mr. Poler, an oil trader with NOVARCO, Ltd., provided testimony at the Department's public hearing on the cost and availability of 0.5% sulfur by weight and 0.3% sulfur by weight fuel oil. Mr. Poler indicated that supplies of 0.5% sulfur fuel oil are tight and that 0.3% sulfur fuel is not available (at any price) as of mid-September 2000. Given that 0.5% sulfur fuel is not naturally occurring and must be blended using 0.3% sulfur with 0.7% sulfur or 1.0% sulfur fuel, Mr. Poler indicated that limited availability of 0.3% sulfur fuel will also limit the availability of 0.5% sulfur fuel.

Mr. Poler did not offer comment as to how long the current shortage will last. Mr. Poler did submit various charts and graphs demonstrating five year price differentials between the low-sulfur fuel oils and 1.0% sulfur fuel oil at New York Harbor's Cargo Platt's terminal. The data submitted by Mr. Poler showed a high price differential of 6.25 $/bbl (with average price differentials of 1.00 – 2.00 $/bbl) for 0.5% sulfur fuel oil. For 0.3% sulfur fuel (high pour), Mr. Poler's data showed a high price differential of 11.75 $/bbl (with average price differentials of 1.00 – 3.00 $/bbl). For 0.3% sulfur fuel (low pour), Mr. Poler's data showed a high price differential of 12.50 $/bbl (with average price differentials of 2.00 – 4.00 $/bbl). The price data offered no additional insight as to availability. However, higher prices are generally indicative of short supply.

Mr. Poler also offered some price data on natural gas. Mr. Poler also compared the price of natural gas to that of fuel oil based on the energy content of both fuels. Mr. Poler indicated that, based on current price levels, the cost of natural gas is equivalent to paying $40 per barrel of oil. This testimony was offered to show the price impact of requiring power plants to switch to natural gas, assuming that the necessary amount of gas could be brought to market. Mr. Poler also pointed out that supplies of natural gas are down and price is substantially up.

4. Wisvest-Connecticut, LLC

Wisvest indicated in their written comments that if the proposed regulations force certain Connecticut power generators to shut down, there is a question as to whether the grid in Connecticut can import sufficient power to replace that lost from displaced units. Wisvest also noted that "market reports" suggest that the fuels (0.5% sulfur by weight and 0.3% sulfur by weight residual fuel oil) are not available at any price.

5. Clean Air Task Force and Coalition for Clean Air by David Marshall

The Clean Air Task Force (CATF) and Coalition for Clean Air (CCA) submitted written comments touching on several issues raised in oral testimony at the Department's public hearing. CATF/CCA noted that with respect to fuel price and availability, the power generators offered no evidence that they would be unable to procure low-sulfur fuel in 2002 and beyond. CATF/CCA noted that the only testimony produced by power generators was an oil trader (see NOVARCO comments above) who claimed, without any real support, that supplies of 0.3% sulfur, by weight, fuel oil were presently uncertain.

CATF/CCA reiterated the testimony of DPUC that low-sulfur fuels to meet the regulations should be available in ample supply at slightly higher prices.

CATF/CCA submitted data from the US Energy Information Administration indicating that in 1998 power producers in 20 states burned fuel oil averaging about 0.3% sulfur. CATF/CCA indicated that the fuels markets (NY Mercantile Exchange) predict crude oil prices to drop significantly by the end of 2003 (as well as natural gas prices).

With respect to reliability of electric supply CATF/CCA indicated that with the influx of new natural gas plants in Connecticut, older power generating resources would most likely not be needed within several years. CATF/CCA again reiterated DPUC testimony that the reserve power margin in Connecticut this past summer was more than 33%.

6. Conservation Law Foundation

The Conservation Law Foundation (CLF) stated in their comments that in the event that some or all of the existing older power plants retire over the next few years, the construction and operation of new gas turbine plants would preclude a capacity shortfall and attendant system reliability problems. The CLF offered a hypothetical scenario in which all of Connecticut's older power plants retired shortly after 2003. The CLF asserts such an event would not negatively impact reliability because the combined capacity of the older power plants (approximately 2,700 MW) would have already been offset by new generation (approximately 2,900 MW) that has been approved but is not yet constructed and operating.

The CLF is also confident that the proposed regulations would not affect the system reliability of the New England region. The CLF notes that ISO New England has reported that more than 60 projects have completed applications for a total of more than 15,700 MW of new capacity, with 10,500 MW of capacity expected to be completed and on-line by the summer of 2003. Peak demand in New England is expected to increase to about 24,500 MW by 2003 indicating that the new generation could adequately offset the retirements of some older power plants.

The CLF also addressed concerns raised about system reliability in Fairfield County. The CLF notes that no specific study or analysis can be cited to support the assertion that implementation of the proposed regulations would lead to a system reliability problem in Fairfield County. First, the CLF notes there is a new 520 MW plant operating in Bridgeport and a 544 MW plant now under construction in Milford. Second, the CLF concedes that even if there is some risk that the retirement of older power plants in Fairfield County would lead to system reliability problems, then it is the responsibility of the transmission and distribution companies to study the situation in cooperation with ISO New England and recommend the most effective solutions, such as new generation and enhancing transmission and distribution capabilities.

7. Pfizer Inc. by William D. Huhn

Pfizer Inc. (Pfizer) commented that the potential impacts of the proposed regulations on fuel availability, fuel costs, and the local economy should be carefully evaluated. Pfizer's inquiries of suppliers indicate that 0.7% and 0.3% sulfur fuels are commercially available at cost premiums.

Suppliers do not have supplies of 0.5% sulfur fuels and would be forced to blend current supplies of 0.7% and 0.3% to achieve this limit. Blending activities and separate storage for 0.5% fuel oil will create additional expenses.

Pfizer recommends the Department carefully evaluate the economic impact of the proposed regulations on Connecticut business and the general public. Pfizer indicated their concern that the proposed regulations will cause a sudden increase in demand of low-sulfur fuel and natural gas (to comply with the NO_x regulation). As such, Pfizer believes that most industry and power producers will opt to consume natural gas. This increased demand and dependence on a single energy source will create significant risks for industry, power producers, small business, and residential consumers, all of which will compete for scarce supplies. Pfizer also recommends that the Department review whether the potential availability and price increases would create a competitive disadvantage for Connecticut businesses.

8. Competitive Power Coalition of New England, Inc. by Neal B. Costello

Mr. Costello testified that the proposed regulations would threaten fuel diversity by effectively eliminating the use of coal and oil, and move Connecticut towards the precarious use of a single fuel source. In addition, vital power plants would retire prematurely, instituting reliance on more expensive electricity generated out of Connecticut by dirtier power plants. Transmission constraints may induce blackouts. Connecticut will be placed at a competitive disadvantage and jobs will be lost. In essence, the proposed regulations would impose a hidden energy tax on the residential, commercial, and industrial customers.

F. Department's Response to General Comments on the Implications of the Proposed Regulations with Respect to Reliability of Electric Service in Connecticut and Associated Costs

1. Electric System Reliability

DPUC concluded in their testimony that the proposed regulations reasonably balance environmental goals with the need to maintain adequate electric generation resources in Connecticut.

However, DPUC noted in a caveat to their testimony that, in the extreme event that all older power plants chose to shut down as of January 1, 2002 rather than comply with the new requirements, there is a possibility of short-term reliability problems in Fairfield County. This information was countered by additional DPUC testimony outlining the amount of anticipated new generation capacity now being installed in Connecticut and throughout New England. Additionally, the DPUC testimony indicated that low-sulfur fuels would be available at modestly higher prices. This testimony alleviates the concerns that the older power plants would be shut down before 2002.

2. Fuel Availability and Cost

The majority of comments from the power producers concerned the price and availability of 0.3% sulfur, by weight, fuel at the present time. It is important to note that phase 2 of Section 19a provides for the use of 0.3% sulfur, by weight, fuel oil as one of several options for compliance.

The Department received no testimony or written comments conclusively demonstrating that 0.5% sulfur, by weight, fuel would be unavailable on and after January 1, 2002. However, testimony provided by a fuels trader as well as unspecified 'market reports' referenced by Wisvest in their written comments indicate that supplies of 0.5% sulfur, by weight, are tight and that 0.3% sulfur, by weight, fuel oil is not available (as of mid-September 2000) at any price. A clarification of the term "tight" was requested at the public hearing. A more informed clarification was not provided.

The Department could not independently verify such claims. However, if it is true that such fuel is not available, the proposed regulations provide for a compliance extension, and specific waiver of the fuel sulfur requirements during periods of fuel emergencies. Additionally, sources unwilling to risk fuel oil price fluctuations are afforded the regulatory flexibility to install control technology or to use emissions trading beginning January 1, 2003 as a means of compliance with the requirements of proposed Section 19a. In addition, DPUC stated its belief that low-sulfur fuel will be readily available at modestly higher prices and that such increased costs are not likely to materially affect the retail prices of electricity.

NRG fuels analysis showed incremental demand represented by NRG use scenarios would likely only have a modest impact on price.

The Department should amend certain provisions of Section 19 in order to provide the Department with the flexibility to address concerns of electric service reliability in Fairfield County and throughout the state. These provisions, described below, ensure that implementation of the new requirements will not adversely affect the reliability of the electricity supply for Connecticut and allow affected sources time to develop compliance strategies. The Department is proposing to amend Section 19a as follows:

- Broaden the compliance extension provisions of subsection (f) to cover the first phase of the planned SO_2 emission reductions effective on January 1, 2002. This compliance extension is available when the Commissioner finds (after consulting with the DPUC) there to be a substantial impact on the reliable generation or delivery of electricity to residential, commercial and industrial users in the state. The commissioner may then, by permit or order, require compliance by:
  - Reconstruction of the affected source by June 1, 2003,
  - Replacement of the affected source by June 1, 2003, or
  - Impose an emissions cap to ensure local emission reductions until such time that the source demonstrates compliance (no later than June 1, 2003);
- Maintain the suspension of fuel sulfur limits in time of emergency as set forth in subsection (g) and require the source to calculate the excess SO_2 emissions

attributable to the suspension and to offset any SO_2 emissions (exceeding 50 tons) through emissions trading provisions of subsection (h); and

- Maintain compliance flexibility by allowing sources to install air pollution control equipment in lieu of combusting low-sulfur fuel or switching to natural gas.

3. Fuel Diversity Issues

The goals of fuel diversity and environmental protection are not mutually exclusive. The Department believes, based on contact with a major oil refiner while developing the proposed regulations, that there will be an adequate supply of low-sulfur fuel to meet the first phase of the proposed SO_2 regulation. The Department need not make a finding that there will be a sufficient supply of 0.3%, by weight, fuel oil for phase 2 of Section 19a because there are a variety of available compliance options. However, affected sources are not required to use any particular fuel and may indeed choose to install air pollution control equipment in lieu of being too reliant on any one particular fuel, such a natural gas or low-sulfur fuel oil.

G. General Comments in Support of the Use of Market-based Incentives in the Proposed Regulations

1. Northeast States for Coordinated Air Use Management (NESCAUM) by Jason Grumet

NESCAUM is a nonprofit association of eight Northeastern state air pollution control agencies, including the Connecticut Department of Environmental Protection Bureau of Air Management. NESCAUM has helped to advance innovative regulatory approaches, including market-based mechanisms and emissions trading programs. These approaches have formed the basis for many of the most important pollution control initiatives of the last decade and have produced (or will produce) substantial emission reductions throughout the eastern United States, including Connecticut. These programs, which include the federal Acid Rain Program, the Ozone Transport Commission's NO_x Budget Program, and the EPA's recent twenty-two-state NO_x SIP Call, will lower ambient levels of ozone, fine particulate matter, and acid rain precursors throughout the Northeast. As an additional benefit, these programs are likely to lead to reductions in mercury and carbon dioxide emissions, which, like NO_x and SO_2, are predominantly emitted from large coal-fired power plants.

At the same time, NESCAUM recognizes that these programs to date have not adequately addressed the concerns of local communities in the immediate vicinity of the large emission sources — some of which continue to lack modern emission control technology. Whether this inadequacy is the result of program design or whether it reflects that the national and regional emission caps are simply not strict enough to require the necessary plant modifications is immaterial to most local residents. The fact remains that in addition to regional programs, communities must have assurances that local facilities achieve timely reductions.

Designing a regulatory program that achieves both regional and local pollution reductions at an acceptable level is a substantial challenge. NESCAUM believes that the Department's proposed rules meet this challenge and provide a model for resolving the national debate over how to gain

the benefits of market-based approaches while ensuring that no local community is placed in jeopardy. NESCAUM also notes:

- Phase 1 of the proposed regulations would substantially reduce sulfate emissions at all major emission sources in Connecticut.

- The proposed regulations go significantly beyond the existing federal Acid Rain Program by requiring a two-for-one retirement of allowances.

- The first phase of the program is followed closely by a second phase aimed at cutting emission rates by another 40% and allowing these reductions to be met through emissions trading with other Connecticut sources or by retiring federal allowances from outside the state at a four-to-one ratio. However, no affected Connecticut source will be allowed to emit in excess of the Phase 1 limits.

- The hybrid approach, in which source-by-source emission reductions precede a second tier of tradable reductions, is perhaps the most far-reaching aspect of the Department's proposed regulations. On one hand, the proposal addresses local concerns by ensuring that all plants meet stringent minimum control requirements. On the other hand, the proposal takes advantage of the unique features of market-based cap and trade programs to leverage substantial additional reductions. By providing the flexibility to maximize emission reductions where they can be achieved most cost effectively, such programs can reduce the overall cost of complying with the regulations thus enabling greater reductions.

- The emissions trading provisions included in the Department's proposed regulations are therefore significant in a larger context. Besides making it possible to achieve an unprecedented tightening of overall control levels statewide, they signal Connecticut's continued participation in, and commitment to, regional and national control efforts.

- The importance of regional and national efforts to achieving healthy air in Connecticut cannot by overemphasized. Transported emissions from outside Connecticut contribute significantly to our air quality problems; indeed total emissions of SO_2 and NO_x within the state pale in comparison to emissions released upwind of its borders. NESCAUM conducted a study[5] concluding that between 25% and 40% of the Northeast's smog problem during the worst summertime episodes originates outside of the Northeast.

NESCAUM believes that the Department's proposed regulations represent a significant achievement for public health and environmental protection in the State of Connecticut. Moreover, by addressing both the local and regional causes of air pollution in the state, the proposed regulations provide a model for other states and for Congress to consider in the ongoing efforts to achieve clean air.

[5] "The Costs of Ozone Transport: Achieving Clean Air in the East," NESCAUM, July 1998.

2. **Northeast States for Coordinated Air Use Management (NESCAUM) by David Brown, Sc.D.**

In addition to policy-based comments provided by Jason Grumet, NESCAUM also submitted testimony and comments based on considerations of public health. In his written and oral testimony, Dr. Brown, a public health toxicologist, supported the inclusion of market-based incentives in the proposed regulations, including the use of discrete emission reduction credits (DERCs) generated within Connecticut and the use of regional allowances. Dr. Brown indicated that market-based incentives would help in achieving reductions in the background concentrations of air pollution for Connecticut and New England.

3. **Jonathan Levy, lead author of "Estimated Public Health Impacts of Criteria Pollutant Air Emissions from the Salem Harbor and Brayton Point Power Plants"**

Dr. Jonathan Levy, a Research Fellow in the Department of Environmental Health at Harvard School of Public Health and lead author of a recent analysis on the public health impacts of criteria air pollutants from two coal-fired power plants in the commonwealth of Massachusetts, provided comments pertaining to the use of market-based incentives in the proposed regulations.

Dr. Levy noted that the use of market-based incentives have been mandated for the proposed regulations, and emissions trading programs have the potential to reduce compliance costs while providing public health benefits. However, emissions trading programs must be structured carefully and explicitly to ensure substantial public health benefits in local communities, Connecticut as a whole, and across New England. Dr. Levy notes:

- With respect to SO_2, the proposed regulations address these concerns by requiring local reductions down to 0.5 lb/MMBtu and emissions trading to meet 0.3 lb/MMBtu level.

- The "affected state" provision is critical and should be maintained in the final regulations to ensure that Connecticut would receive benefits from any emission reductions.

- The existence of excess allowances could imply that no real reductions have taken place at the affected sources outside of Connecticut. If this is the case, the Department should consider strengthening the site-specific reduction requirements or modify the proposed regulations to ensure that emissions trading is allowed only when real emission reductions are demonstrated at the facility from which the credits were purchased.

4. **Connecticut Business and Industry Association (CBIA)**

The CBIA strongly supports the use of market-based incentives and encourages the Department to expand the regional opportunities for affected facilities to meet the new sulfur emission requirements through emissions trading and that the phase-in for mandatory use of low-sulfur fuels be extended by an additional eighteen to twenty-four months.

The CBIA notes that the 1990 Clean Air Act Amendments introduced the use of market-based approaches for improving air quality by allowing sources to meet stringent new requirements through the use of emissions trading. These programs have resulted in unprecedented levels of SO_2 and NO_x reductions throughout the United States. During phase I of the federal Acid Rain Program:

- Power plants reduced SO_2 emissions 22% below required levels, yielding 7.3 million tons of additional reductions;

- When taking into account all phase I allowances, actual emissions of SO_2 were 30% below required levels, represented by 11.6 million unused allowances.

The CBIA noted that the national environmental benefits associated with the use of market-based incentives have also been experienced in Connecticut. Since a significant amount of air pollution is imported into Connecticut from upwind sources, impressive reductions in upwind sources achieved through the use of market-based incentives reduces the level of air pollution transported into Connecticut. In addition, Connecticut's own emissions trading program, implemented in 1995, has already resulted in the elimination of 5,000 tons of NO_x emissions. The CBIA believes that equally impressive results can be expected for the reduction of SO_2 if the Department adopts a broader SO_2 trading program.

5. Wisvest-Connecticut LLC (Wisvest)

Wisvest made three points in response to the Department's solicitation in the notice of intent to adopt and amend regulations for additional comment on whether there is a demonstrated need that the proposed regulations contain emissions trading provisions.

- The Governor's Executive Order No. 19 (the basis of the proposed regulations) states that "any regulations adopted pursuant to this Order shall include the use of market-based incentives and a system of creditable emission allowances or credits."

- The Department is on record as supporting the use of market-based incentives. Department staff have stated in presentations that emissions trading:
  - Allows for more stringent standards,
  - Results in total emissions (or average emission rates) below the intended standard,
  - Encourages new, innovative pollution controls, and
  - Provides a cost-effective compliance option to regulated sources.

- National environmental groups support emissions trading. In their report, *From Obstacle to Opportunity: How Acid Rain Emissions Trading is Delivering Cleaner Air* (September 2000), Environmental Defense[6] (formally the Environmental Defense Fund) notes the superior results achieved by the federal Acid Rain Program. (Hereafter, the ED emissions trading

[6] Environmental Defense is a leading national, New York based nonprofit organization, representing 300,000 members. Environmental Defense links science, economics, and law to create innovative, equitable and economically viable solutions to today's environmental problems.

report) Specifically, Environmental Defense notes the following with respect to the federal Acid Rain Program (as submitted into the record by Wisvest):

- The first phase led power plants to reduce SO_2 emissions 22% below the levels required, resulting in 7.3 million tons of extra emission reductions;
- Reconciling the first phase reductions to take into account "extension allowances" for the installation of certain technology, actual emissions were 30% lower than the legally authorized level, resulting in 11.6 million unused allowances; and
- Reductions in sulfate deposition have been observed in geographic areas affected by the atmospheric transport of sulfur.

Wisvest reiterated the testimony of Richard Londergan indicating that ambient levels of SO_2 and NO_x are well under the NAAQS set by the US EPA. Indeed, the Department's own data shows that concentrations of NO_x and SO_2 in the immediate vicinity of Wisvest facilities in New Haven and Bridgeport (as well as throughout Connecticut) are dramatically better than the NAAQS, which are set to protect public health. Based on this information, Wisvest concludes that the Department should not be concerned with reducing primary pollutants, such as NO_x and SO_2, but rather with reducing secondary pollutants, which are formed at significant distances from the point of release (i.e., sulfates, nitrates and ozone). Wisvest concludes that since market-based programs are proven to produce superior environmental performance at the lowest practicable cost, the Department should not only maintain the current market-based provisions, but also expand the use of emissions trading temporally and geographically.

6. NRG Energy, Inc. (NRG) statement of R.K. Raufer, Ph.D., P.E.

NRG submitted with their written comments, a statement by R.K. Raufer on the benefits of emissions trading programs. Since NRG's comments are a summary of Dr. Raufer's comments and Dr. Raufer submitted comments on behalf of NRG, this report will address NRG's general comments by addressing the specific comments raised by Dr. Raufer. In his report, Dr. Raufer notes that emissions trading programs:

- Allow government to focus on the tasks of setting environmental goals, rather than micro-managing the stack-by-stack pollution reductions;
- Are economically efficient, achieving comparable levels of pollution control for lower costs;
- Allow policy makers to set more stringent standards based on the economic efficiency of compliance; and
- Provide facilities with a strong incentive to reduce pollution by putting costs on every additional ton of pollution.

Dr. Raufer notes that proposed Section 19a would restrict the SO_2 market in a number of ways:

- Proposed Section 19a requires each affected Title IV source to retire one SO_2 allowance for every ton of SO_2 emitted in Connecticut;

- Retired allowances must come from Connecticut sources first;

- If there are insufficient number of Connecticut allowances, then those from nearby "affected states" can be used;

- The affected units may use SO_2 DERCs or SO_2 allowances to comply with the proposed emission limits, but SO_2 DERCs must be certified by the Department — indicating that only "early reduction credits" or SO_2 allowances could be employed;

- "Early reduction credits" can only be created until 2002; and

- If SO_2 allowances are used to meet the proposed emission limits, they must be retired on a four-to-one basis.

Dr. Raufer concludes that the emissions trading provisions proposed by the Department are not always consistent with the economic efficiencies associated with market-based incentive regulatory programs. Dr. Raufer stated:

- Proposed Section 19a, by requiring the retirement of additional SO_2 allowances for every ton of SO_2 emitted in Connecticut, will not change emission source provisions associated with the NAAQS, will only slightly reduce national SO_2 emissions, and will likely have significant costs;

- Proposed Section 19a, by placing additional market constraints on the size of the market (i.e., "affected states" provisions), is unlikely to have much benefit in terms of reducing "hot spots" or improving East Coast health benefits, and is likely to increase costs and minimize the economic efficiency advantages of a broader, unconstrained marketplace;

- Proposed Section 19a, by providing for the use of SO_2 DERCs, displays the characteristics of earlier EPA emissions trading programs that were "hobbled" by regulatory constraints. The regulatory constraints on the creation and use of SO_2 DERCs in proposed § 19a further restrict the economic efficiencies of an open market;

- Proposed Section 19a gives sources flexibility in using two market-based instruments (SO_2 DERCs and SO_2 allowances) for compliance, but then discourages the use of SO_2 allowances, the larger and most liquid instrument, by requiring a four-to-one retirement ratio. The basis for this ratio is not clear, and seems only to result in high costs with few corresponding benefits; and

- With respect to NO_x, the environmental goal of Section 22 does not match the emission reduction requirements. Dr. Raufer indicates that if Section 22 is intended to address the longer term environmental impacts of nitrogen deposition, then a broader seasonal emissions constraint, rather than a daily emissions constraint imposed under the existing requirements of Section 22, would be a more efficient means to meet the same environmental goals.

Dr. Raufer did not dispute or argue against the stringent environmental standards set by the Department. His report suggests only that market approaches are particularly useful in making environmental regulations less costly and more efficient; efficiency can be turned into more stringent standards; broader emissions trading works better; and localized restrictions on markets are likely to have high costs.

7. Cantor Fitzgerald Environmental Brokerage Services by Andrew Kruger

The comments provided by Mr. Kruger support the portions of the proposed regulations related to emissions trading. Based on the Department's solicitation in the notice of intent to adopt and amend regulations for additional comment on whether there is a demonstrated need that the proposed regulations contain emissions trading provisions, Mr. Kruger submitted the additional comments:

- The federal Acid Rain Program has led to national SO_2 emission reductions from approximately twenty million tons in 1980 to ten million tons in 2000, with millions of additional SO_2 allowances banked, unused, and out of the air;

- The OTC NO_x Budget Program establishes a regional cap-and-trade program to reduce NO_x emissions in the Northeast. This program reduced the 1990 NO_x emissions from 417,000 tons to 175,000 tons in 1999;

- In Connecticut, the NO_x RACT program has produced emission decreases of approximately 5,000 tons of NO_x (1990 baseline of 11,000 tons of NO_x). These are emission reductions that are unused, after all trades are complete.

Given all that has occurred, the Department is proposing regulations that will require sources to retire two SO_2 allowances per ton of actual emissions. If a source trades emission reductions to comply with the 0.3 lbs/MMBtu standard, it must use either four SO_2 allowances or one SO_2 DERC, per ton of actual emissions. These additional sulfur reductions are in addition to almost ten million tons of SO_2 reductions that have already occurred in the United States.

Carefully crafted rules, such as those currently proposed by the Department, protect the environment and provide compliance flexibility for sources. Emissions trading is not about "buying one's way out of compliance"; it is about getting paid for making reductions beyond what is required by law. Additional emission reductions beyond those required by law occur by the hands of a corporation, not the Department. Mr. Kruger also submitted as part of his testimony a copy of *From Obstacle to Opportunity: How Acid Rain Emissions Trading is Delivering Cleaner Air*, (Environmental Defense, September 2000).

8. Pratt & Whitney, a United Technologies Company (P&W)

P&W stated their support of emission reduction credits as a viable and proven method for achieving environmental goals. P&W believes that EPA and the Department have demonstrated that market-based systems using DERCs have resulted in overall greater emission reductions than would have been reached without such systems.

Additionally, the use of DERCs is vital for sources for which no technically feasible options exist for compliance.

9. Pfizer Inc. by William D. Huhn

Pfizer Inc. (Pfizer) commented that compliance with the proposed NO_x emission reduction requirements through flexible emissions trading provisions is mandated by the Executive Order and is both a scientifically and economically sound means to achieve the required emission reductions.

Emissions trading is recognized nationally and internationally as an effective and proven method for providing cleaner air in an economically sound manner. Since there is no compelling evidence that NO_x emissions cause significant local adverse health impacts, Pfizer fully supports the Department's plan to allow emissions trading to comply with the proposed NO_x emission reductions.

10. The Clean Energy Group by Michael Bradley

Members of the Clean Energy Group[7] (CEG) submitted comments strongly in favor of the use of emissions trading as the most appropriate and cost-effective mechanism for achieving air quality goals. The CEG indicated that emissions trading programs direct capital to the least-cost emissions control opportunities, and promote the use of innovative compliance options.

11. Connecticut Resources Recovery Authority (CRRA)

CRRA indicated their strong support of the use of emissions trading as a compliance option. This statement of support extended to both the proposed NO_x and SO_2 regulations. Market-based incentives provide facilities with the flexibility to achieve substantial and cost-effective NO_x and SO_2 reductions.

12. Northeast Utilities Generating Services by William J. Nadeau

Mr. Nadeau indicated strong support of the use of emissions trading as a feasible manner to economically reduce emissions of NO_x and SO_2 and to maintain a reliable electricity supply. Mr. Nadeau cited the NO_x RACT program, the federal Acid Rain Program, and the NO_x Budget Program as proven examples of the benefits of emissions trading.

13. Capitol District Energy Center (CDEC) by Brian O'Rourke

Mr. O'Rourke noted the strong support of CDEC for a NO_x cap-and-trade program to implement non-ozone season NO_x reductions. Such a program would achieve the environmental goal while providing operational flexibility and economic viability for CDEC.

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[7] The members of the Clean Energy Group are Consolidated Edison, Inc., KesSpan Energy, Niagra Mohawk Power Corporation, Northeast Utilities, PG&E National Energy Group, Public Service Enterprise Group Incorporated and Sempra Energy.

14. International Brotherhood of Electrical Workers Local 420 (IBEW)

IBEW indicated strong support of the use of emissions trading as a reasonable approach to local and regional emission reductions. The use of emissions trading would achieve the environmental goal while ensuring that the power plants do not close and jobs are not lost.

H. General Comments in Opposition to the Use of Market-based Incentives in the Proposed Regulations

1. Comments of Senator Edith Prague (19th District)

As a member of the legislative Clean Air workgroup, Senator Prague indicated that she is impressed by the SO_2 emission reductions generated by the first phase of the proposed regulation. However, she is concerned by the inclusion of emissions reduction trading in the second phase of the proposed regulation. Senator Prague provided for the record in this matter an Office of Legal Research (OLR) report entitled "Pros and Cons of Air Emissions Credit Trading" (August 10, 2000).

Senator Prague, in reading from the OLR report, stated that the principal argument against trading programs is that they do not guarantee that improvements to air quality occur in the areas that are most affected by air pollution. Some of the existing trading programs, such as the federal Acid Rain Program for SO_2, allow trades over a very large region. While such programs do improve air quality in the aggregate, they do not necessarily reduce emissions at sources that make the greatest contribution to local air pollution and its resulting health problems.

Environmentalists have argued that trading programs would not guarantee that people living near such plants would experience improvements in air quality that would improve their health. Senator Prague noted that the rise of asthma is of great concern to all. In response to reliability discussion of DPUC, Senator Prague offered that most people would likely choose clean air and take minor inconveniences associated with electric system reliability in stride.

Senator Prague concluded that she is opposed to the emissions trading program set out in the second phase of the proposed regulations.

2. Clean Air Task Force/Connecticut Coalition for Clean Air (CATF/CCCA)

One set of written comments submitted on behalf of the CATF by David Marshall stated that regulatory flexibility is to be commended and encouraged if it does not sacrifice real environmental benefits. Mr. Marshall cautioned that given the amount of "excess" SO_2 allowances under the federal Acid Rain Program, proposed Section 19a will not actually reduce Connecticut SO_2 emission rates below the phase 1 level of 0.5 lb/MMBtu. CATF believes this is a serious flaw in the proposed regulations that can only be corrected by eliminating or further

restricting the use of federal SO_2 allowances for purposes of complying with the proposed regulation.

Other written comments submitted on behalf of the CCCA by Brooke Suter stated that since the inception of the CCCA, their goals have been the reduction of SO_2 by achieving an emission rate of 0.3 lbs/MMBtu on an annual, plant-by-plant basis, without the use of emissions trading by 2003 for all of Connecticut's fossil fuel power plants built prior to 1977. The CCCA remains dedicated to meeting these policy goals and opposed to the use of emissions trading as a means of meeting on-site pollution reductions.

The CCCA is opposed to emissions trading for the following reasons:

- To achieve maximum public health and environmental benefits, Connecticut's older power plants should not be allowed to meet tighter emission standards through emissions trading but should be required to meet emission rates applicable to newly built power plants; and

- The CCCA believes that since the power plants are not held to modern sulfur standards, the use of market-based incentives will allow the older power plants to emit excessive amounts of SO_2 with the associated impacts on public health and the environment.

3. Conservation Law Foundation (CLF)

The CLF stated that if the goal of the Department is to clean up older power plants to modern standards then the proposed regulations do not go far enough. The CLF recommended that the use of market-based incentives be terminated after January 1, 2003. The CLF believes that sufficient SO_2 allowances exist in the states of Massachusetts, Rhode Island, New York, and New Jersey to allow sources to comply with the proposed phase 2 SO_2 standard (0.3 lb/MMBtu) using only SO_2 DERCs and SO_2 allowances without making any further reductions on site. The CLF also stated that the proposed standards, if met without the use of SO_2 DERCs or SO_2 allowances, would serve to even the regulatory burden on old and new units competing in the newly deregulated electricity marketplace.

4. Connecticut Coalition for Environmental Justice (CCEJ)

The CCEJ expressed concern about the provisions of the proposed regulations that allow emissions trading. The CCEJ believes that if these provisions are implemented, then the full amount of local SO_2 and NO_x reductions intended by the proposed regulations will not occur. CCEJ also expressed concern over, and opposition against, any facility averaging that would allow a source to average emissions over a period longer than one month.

5. American Lung Association of Connecticut (ALA-CT)

Based on public health and environmental justice concerns, the ALA-CT is opposed to emissions trading and emissions averaging between power plants. The ALA-CT believes that all plants must be cleaned up equally and on site so as to correct any disproportionate local impact.

6. Sierra Club – Connecticut Chapter

The Sierra Club stated their understanding that the proposed regulations must contain market-based incentives due to the requirements of Executive Order No. 19. However, the Sierra Club does not believe that emissions trading should be used as a substitute for cleaning up the older power plants. The Sierra Club stated their belief that the NO_x and second phase SO_2 emission reductions will be only "paper" reductions and their preference to see real and immediate reductions at the facility level.

I. Miscellaneous Comments Opposed to the Use of Market-based Incentives

The Department received numerous written comments in the form of electronic mail (over 150 messages), petitions (six with combined signatures of over 1,100), postcards (approximately 50), form letters, and other written statements from hundreds of Connecticut residents who are strongly opposed to the use of emissions trading in the proposed regulations. The comments echo the same theme and may be summarized as follows:

- "Pollution reduction trading does no good for people or the environment, it does not take into account the health problems caused by the power plants and is a sham";
- "Any regulations that allow the power plants to avoid meeting modern air pollution standards on-site are unacceptable and fail to address the real health problems suffered by people who live nearest the power plants. The most troublesome of these localized impacts are asthma attacks, especially among school children, and premature death among the elderly";
- "Pollution credit trading is nothing more than an extension of the same loophole the proposed regulations were supposed to close";
- "I want WISVEST out of my neighborhood or in compliance with the federal Clean Air Act of 1977 now. . .no exemptions, no more delays, no exceptions and definitely no more trading to avoid coming into compliance";
- Pollution credit trading will not reduce emissions of SO_2 and NO_x;
- Fairfield County already suffers from daily rush hour automobile emissions at a level higher that the rest of the state and should not be subjected to the additional emissions of 2 power plants;
- Pollution credit trading is wrong and immoral;
- The health of local residents near the power plants should come before the bottom line of the power plants;
- Pollution credit trading is the wrong approach to achieving clean air and is backwards to the way the problem should be addressed (plants that pollute most should be cleaned up first); and
- The proposed regulations do nothing to require the power plants to clean up air quality.

The written comments express extreme distrust in the concept of emissions trading and urge the Department to require strict command-and-control emission reductions on a plant-by-plant basis.

J. Response to Comments on the Use of Market-based Incentives in the Proposed Regulations

By far, the role of market-based incentives and use of emissions trading through national, regional and local mechanisms contained in the proposed regulations generated the greatest volume of comment.

Supporters of market-based incentives point out:

- The Governor's Executive Order No. 19, which is the executive basis for the proposed regulations, specifically directs the Department to include market-based incentives in the proposed regulations;

- The Department is on record as a historical proponent of market-based incentives and emissions trading programs; and

- Most importantly, the Department's own data on the NO_x RACT and NO_x Budget programs show that emissions trading programs work and yield superior environmental benefits at reduced costs to industry and the general public; and

- NESCAUM believes that the Department's proposed regulations represent a significant achievement for public health and environmental protection in the State of Connecticut. Moreover, by addressing both the local and regional causes of air pollution in the state, the proposed regulations provide a model for other states and for Congress to consider in the ongoing efforts to achieve clean air.

The Department also received public health testimony indicating that emissions trading programs provide public health benefits by reducing background concentrations of air pollutants in the ambient air. This is due to the greater environmental benefit (i.e., early compliance and overall greater reductions in emissions than required by law) being distributed through a region based on the overcompliance of certain facilities. Regardless, some comments recognized that emissions trading programs have not adequately addressed the concerns of local communities in which the large emission sources are located and that these communities are demanding assurances that local sources will reduce emissions.

The Department's proposed regulations would provide **substantial local reductions** while also providing economic incentives for power plants to make even greater, cost-effective, emission reductions. For example, the proposed regulations:

- Are implemented in two phases. The first phase requires on-site emission reductions and the second phase seeks to use market-based incentives to achieve even greater reductions.

- In the first phase, the proposed regulations require local, on-site, emission reductions of approximately 19,000 tons of SO_2 (out of 1999 baseline emissions of 41,250 tons).

- The local emission reductions occur at the facility and may not be met through the use of pollution reduction credits.

- In addition, the first phase requires that affected sources must surrender an additional SO_2 allowance for every ton of SO_2 emitted in Connecticut — an economic incentive that adds to the cost of emitting pollution in Connecticut thereby providing an incentive to further reduce pollution levels.

- The second phase of the proposed regulation contains additional emission reduction requirements that can be met through market-based incentives. The second phase also presents the possibility of further reducing in-state emissions by another 9,000 tons and continues the requirement that affected sources must surrender an additional SO_2 allowance for every ton of SO_2 emitted in Connecticut.

- To the extent that sources in Connecticut overcontrol their emissions (below the emissions rate of 0.3 lbs/MMBtu), they will generate SO_2 DERCs that could be used to offset emissions (greater than 0.3 lbs/MMBtu but below 0.5 lbs/MMBtu) elsewhere in Connecticut. It is important to note that under current policy the Department retires 10% of created DERCs, ensuring a net environmental benefit from the use of DERCs for compliance.

- If sources use SO_2 allowances (obtained through the federal Acid Rain Program from sources in Connecticut, New York, Massachusetts, Rhode Island, New Jersey), they must retire four SO_2 allowances for every ton of excess emissions in Connecticut, while maintaining the on-site reductions implemented under the first phase of proposed Section 19a.

Some comments, particularly those of NRG/Dr. Raufer, asserted that the Department's regulatory restriction of the markets serve only to increase costs and do not ensure local health benefits. Likewise, Wisvest submitted a report entitled *From Obstacle to Opportunity: How Acid Rain Emissions Trading is Delivering Cleaner Air* (Environmental Defense, September 2000 (hereafter the ED Report)), which supports broad market-based incentives to achieve national air pollution reduction goals.

The Department's regulatory restriction of the markets may slightly increase costs. Even if the increased demand in SO_2 allowances resulting from Section 19a increases the price of SO_2 allowances, the relative size of the Connecticut market (65,000 allowances) compared to the relative size of the national market (10,000,000 allowances) will not significantly increase costs.

With respect to the assertion that the proposed regulations will not ensure a local health benefit, the Department points to the ED Report. This report concludes that the restriction of emissions trading programs may be appropriate in the context of pollutants that threaten human health or raise environmental justice concerns. The ED Report suggests a specific policy option for pollutants like SO_2, which may directly affect people within short distances of the sources and continue to threaten human health through transport and formation of secondary pollutants (i.e., sulfates). This policy option is a program "designed to impose certain emission limitation requirements on a strict source-by-source basis while requiring additional increments of reductions that may be achieved through emissions trading." ED Report, page 38. The program

described by ED in their September 2000 report is consistent with the program developed by the Department earlier this summer.

Opponents of emissions trading view it as the continuation of a perceived loophole in federal and state air pollution control requirements. Many comments received demonstrate a general belief that power plants and other large sources of air pollution have operated unregulated in Connecticut. These comments reflect a possible misunderstanding of Connecticut's air program and its long history of requiring power plants to meet emission limits that are more stringent than their federal counterparts. Current Connecticut emission standards are some of the most stringent standards in the United States, and the proposed NO_x and SO_2 standards will be the most stringent standards ever imposed on such sources. Despite this, opponents of emissions trading view it as a "pay to pollute" scheme that does not protect public health, especially in the communities in which larger sources are located. Opponents also point out that given the large number of banked SO_2 allowances in the federal Acid Rain Program, proposed Section 19a, even by implementing a four-to-one ratio, will not yield cleaner air, locally or regionally.

The comments from the opponents of the use of SO_2 allowances in the proposed Section 19a reflect a possible misunderstanding of four issues:

- "Banked" SO_2 allowances represent real emission reductions. These SO_2 allowances are part of a total federal emissions cap on SO_2 emissions, which is set at a level 50% below 1980 emission levels (representing a national reduction in SO_2 emissions from twenty million tons to ten million tons). "Banked" SO_2 allowances represent reductions in SO_2 beyond the requirements of the federal Acid Rain Program.

- Section 19a, as proposed, limits the geographic area from where such allowances may be taken for compliance within the Connecticut program. Whereas the federal acid rain program is national in scope, SO_2 allowances to be used for purposes of compliance with proposed Section 19a must originate from sources located in Connecticut, New York, New Jersey, Massachusetts or Rhode Island.

- If all Connecticut sources used ***only*** SO_2 allowances to comply with the second phase of proposed Section 19a, approximately 36,000 additional SO_2 allowances would be retired per year. This is a significant number in terms of average annual Connecticut SO_2 emissions, but this is not an inordinate burden on the availability of such allowances given that there are approximately 500,000 SO_2 allowances allocated to sources within the four affected states.

- Regardless, the use of SO_2 allowances at a four-to-one ratio is, of and by itself and in conjunction with the other requirements proposed Section 19a, a market-based incentive to reduce SO_2 emissions in Connecticut. Four SO_2 allowances have an economic value. When deciding how much to reduce SO_2 emissions in Connecticut (beyond phase 1 requirements), a source must consider the aggregate cost of the four SO_2 allowances, the phase 1 site specific emission reductions, and the additional requirement to retire two SO_2 allowances for every ton of SO_2 emitted in Connecticut. The conclusion of this analysis may be that it is more economical to meet the 0.3 lbs/MMBTU limit than to use SO_2 allowances.

K. Hearing Officers' Recommendation

The Department's proposed regulations would provide **substantial local reductions** while also providing economic incentives for sources to make even greater, cost-effective emission reductions. The Department's analysis indicates that phase 1 of proposed Section 19a will reduce local, in-state SO_2 emissions from 41,250 tons to 22,513 tons by the end of 2002. The use of market-based incentives could reduce SO_2 emissions by an additional 8,949 tons by the end of 2003.

The Department's approach is consistent with public-health-related testimony received on the proposed regulations. Specifically, background concentrations of air pollution that are too high are associated with adverse health effects and emissions trading programs help reduce background ambient concentrations of air pollutants and associated negative health impacts.

The Department's approach is also consistent with an approach suggested by Environmental Defense, a national environmental advocacy group. Environmental Defense suggests that imposing emission limitations on a strict source-by-source basis while requiring additional reductions that may be achieved through emissions trading is a considered approach to addressing pollutants like SO_2, which may directly affect people within short distances of the sources and continue to threaten human health through transport and, no less important, the formation of secondary pollutants (i.e., sulfates).

Members of industry who seek flexibility in the implementation of the proposed regulations also support the Department's approach. The choice of low-sulfur fuel, the construction and operation of control technology, facility averaging, and emissions trading using either DERCs or SO_2 allowances provide considerable flexibility. In addition, the proposed regulations, consistent with the testimony of Dr. Raufer, provide facilities with a strong incentive to reduce pollution by putting costs on every additional ton of SO_2 pollution emitted in Connecticut.

Based on the comments submitted, the Department should continue to provide flexibility in the implementation of emission standards while ensuring achievement of the on-site emission reductions required under phase 1 of proposed Section 19a. The Department should also maintain the market-based incentives contained in phase 2 of proposed Section 19a, which requires additional reductions of SO_2 beginning in 2003.

If the proposed regulations are implemented, the Department should audit the creation and use of market-based incentives to ensure that emission reductions continue to occur in the areas where the emission sources are located.

VII. Summary of Specific Comments on Proposed RCSA Section 22a-174-19a

A. General Comments

1. Comment regarding the extent SO_2 emission reductions

Comment: The Department should not implement further reductions of SO_2 emissions beyond the present limit of 1.1 lbs/MMBTU.

Commentor submitting this comment: Wisvest

Response: As stated in Part VI of this report, the Department has determined that the general benefits to public health and the environment anticipated by the proposed regulation sufficiently justify reductions of SO_2 emissions beyond 1.1 lbs/MMBTU. In addition, the reductions of SO_2 are consistent with the policy contained in the New England Governors' /Eastern Canadian Premiers' Acid Rain Action Plan of 1998.

Comment: The Department should not implement reductions of SO_2 emissions beyond the requirements of Executive Order No. 19.

Commentor submitting this comment: Pfizer

Response: As stated in Part VI of this report, the Department has determined that the general benefits to public health and the environment anticipated by the proposed regulation sufficiently justify reductions of SO_2 emissions beyond the minimum requirements of Executive Order No. 19. In addition, the SO_2 reductions are consistent with the policy contained in the New England Governors' /Eastern Canadian Premiers, Acid Rain Action Plan of 1998.

The Executive Order clearly states that it is not to be construed in any way as limiting the authority of the Department to adopt emission standards that are more stringent than those set forth within order. As stated elsewhere in this report, the inclusion of market-based incentives, which are supported by industry, allow the setting of more stringent standards such as those in the proposed regulations.

2. Comment regarding a regional approach

Comment: If the Department pursues further SO_2 reduction, the Department should implement a regional program to reduce emissions of SO_2 from large stationary sources. Such a program should reduce regional SO_2 emissions by half through a cap-and-trade system across the Ozone Transport Region.

Commentors submitting this comment: Wisvest; Pfizer; Competitive Power Coalition; The Clean Energy Group

Response: The Department should pursue the implementation of a regional program within a geographic area consistent with air quality modeling. Such a program should maintain the protection of public health as a high priority. The Acid Rain Program, a national program devised to reduce acid deposition, has demonstrated the environmental benefits of a large-scale, cap-and-trade program to reduce SO_2 emissions. Connecticut's own experience with the NO_x Budget Program has proved the efficacy and efficiency of a cap-and trade program to implement emission reductions.

B. Definitions — 22a-174-19a(a)

1. Comment regarding the definition of "early reduction credit" — (a)(6)

Comment: The definition of "early reduction credit" could be understood to mean emission reduction credit is earned through reductions made beyond the emission rate applicable to the source at the time the emission reduction is made, rather than the emission rates specified in subsection (h)(5)(B).

Commentor submitting this comment: EPA

Response: The Department should revise the definition of "early reduction credit" to read as follows:

> (a)(6) "Early reduction credit" means a reduction of SO_2 emissions during calendar years 1999, 2000, 2001, or 2002 below the most stringent SO_2 emission rate applicable to an affected unit pursuant to subsection (h)(5)(B) of this section.

2. Comment regarding the definition of "generation period" — (a)(7)

Comment: The definition of "generation period" should be revised to clarify that the generation period extends past 2002 and that a source can generate SO_2 DERCs past 2002.

Commentor submitting this comment: NRG

Response: The Department has addressed the concern raised by this comment in the definition of "early reduction credit." It is the intent of the Department to allow the creation and use of SO_2 DERCs beyond 2002 as a compliance mechanism for the second phase emission reduction requirements.

3. Comment regarding the definition of "SO_2 DERC" — (a)(10)

Comment: The definition of "SO_2 DERC" states that an SO_2 DERC will be ". . . enforceable pursuant to applicable federal requirements." SO_2 DERCs will be Connecticut-specific credits.

The federal requirements referred to and the level of federal review of SO_2 DERC generation should be clarified.

Commentor submitting this comment: Wisvest

Response: The Department does not intend to submit administrative orders concerning the creation and use of SO_2 DERCs to EPA for their review and approval absent an applicable federal requirement to do so.

In accordance with this comment, the Department should revise the definition of "SO_2 DERC" to remove the phrase, "pursuant to applicable federal requirements."

Comment: The definition of "sulfur dioxide Discrete Emission Reduction Credit" or "SO_2 DERC" does not clearly state the intent that an "early reduction credit" may be used as an SO_2 DERC under subsections (h)(1) and (h)(2) to meet an applicable emission limit under subsection (e).

The following sentence should be added as the last sentence of subsection (a)(10): "Early reduction credits meeting subsection (a)(6) can be used as SO_2 DERCs."

Commentor submitting this comment: EPA

Response: The Department should revise subsection (a)(10) by adding the additional sentence, "Early reduction credits shall qualify as SO_2 DERCs."

C. Applicability — 22a-174-19a(b)

1. Comment regarding the applicability of Section 19a to peaking units

Comment: Section 19a would apply to peaking units, which is a unit with a three-year average annual capacity factor no greater than ten percent, with the capacity factor of any one year no greater than twenty percent. Peaking units, despite their minimal emissions, are critical in times of high customer electrical demand or times of unplanned outages of large generating units.

In consideration of the minimal emissions from peaking units, the Department should revise Section 19a to exclude peaking units. This exemption would also provide another compliance option to the owners' units, by decreasing a unit's operations (and its emissions) rather than installing costly controls or purchasing high priced fuel.

Commentor submitting this comment: NRG

Response: The Department established the applicability of Section 19a to conform with the applicability criteria of the Post-2002 NO_x Budget Program. The applicability criteria are: 1) a fossil-fuel-fired stationary source that serves a generator with a nameplate capacity of fifteen

megawatts or more, and 2) a fossil-fuel-fired boiler or indirect heat exchanger with a maximum heat input capacity of 250 MMBTU or more.

The applicability criteria are based on the potential emissions from these sources, not on mass emissions attributable to the historic operations of these sources. Peaking units have low SO_2 emissions attributable to their infrequent and limited operations. However, they retain the potential to be used to a greater extent and thus to emit more SO_2.

This instance illustrates the utility of an emissions trading program in implementing emission limits on a wider group of sources, or emission limits that would otherwise be technologically or economically infeasible. Peaking units, as any other units subject to Section 19a, may use SO_2 DERCs and SO_2 allowances to comply. These SO_2 DERCs and SO_2 allowances provide an alternative and cost-effective means of compliance for peaking units. Since peaking units generally comprise a portion of a total portfolio of base load and intermediate units, the SO_2 DERCs and SO_2 allowances necessary for peaking units may be cost-effectively generated within that portfolio, avoiding many of the transactional costs attributable to emissions trading.

The Department should not revise Section 19a to exclude peaking units.

D. Sulfur Dioxide Emission Standards and Fuel Sulfur Limits Effective After December 31, 2001 — 22a-174-19a(c)

1. Comment regarding means of implementation of the first phase of SO_2 emission reductions

Comment: The Department has overlooked viable means of implementing the first phase of SO_2 emission reductions. The following two alternatives would achieve the goal of Executive Order No. 19, provide the same level of environmental benefit as Section 19a as proposed, and incorporate several relevant considerations.

Alternative #1

For each facility in a portfolio, require a thirty percent decrease in annual SO_2 emissions (in tons) from a baseline period. In addition, require the portfolio to meet an annual emission rate of 0.5 lbs/MMBTU. Allow for the use of SO_2 DERCs and SO_2 allowances to meet the 0.5 lbs/MMBTU emission rate.

This alternative would require the revision of subsection (a) to add the terms "baseline period" and "portfolio." "Baseline period" should be defined as "the two highest years of operation between and including 1997 through 1999." "Portfolio" should be defined as "a group of affected units operating under common ownership."

Alternative #2

For each facility in a portfolio, set an annual SO_2 tonnage cap based on an emission rate of 0.5 lbs/MMBTU multiplied by the facility's heat input (in MMBTU) during the baseline period. The cap could be exceeded, only in an emergency situation (such as inadequate fuel supply or loss of a base load generating unit), through the use of SO_2 DERCs and SO_2 allowances.

This alternative would require the revision of subsection (a) to add the terms "baseline period" and "portfolio" and their definitions as detailed in the summary of Alternative #1.

To incorporate these two compliance options, the Department should revise subsection (c) as follows:

(1) Meet an SO_2 emissions tonnage cap over a portfolio calculated as the emission rate of 0.5 lb/MMBTU times the heat input for the baseline period for the sources covered in the cap divided by 2000; or

(2) Meet a portfolio emission rate of 0.5 lb/MMBTU in accordance with the provisions of subsection (h) of this section, provided that each premise in the portfolio achieves an actual SO_2 tonnage reduction equal to 30% of its SO_2 emissions in the baseline period; or

(3) The provisions of paragraph (3) can be exceeded in the case of an emergency situation such as the loss of generating capacity or inadequate fuel supply.

Commentor submitting this comment: NRG

Response: The Department appreciates the concepts embodied in the alternative approaches proposed by NRG. Although these are viable options, equivalent overall reductions are not ensured by NRG's alternative approach. The Department should not adopt the alternative approaches at this time as this could significantly delay the public health and environmental protection goals embodied in the proposed regulations.

2. Comments regarding the implementation date

Comment: For the sake of clarity, subsection (c) should be revised to read: "*Beginning* December 31, 2001, ..."

Commentor submitting this comment: Connecticut Coalition for Clean Air

Response: The Department should revise subsection (c) to read: "On and after January 1, 2002, ..."

Comment: In the interest of preserving fuel diversity, subsection (c) should be revised to implement the first phase of SO_2 emission reductions in 2003 or 2005.

Commentor submitting this comment: Competitive Power Coalition

Response: The Department drafted Section 19a so that the issue of fuel diversity is ultimately left to the sources subject to Section 19a. In the first phase of SO_2 emission reductions, Section 19a does not require the use of low-sulfur fuel. Rather, the use of facility averaging and the installation and operation of post-combustion emissions controls are alternatives to the use of low-sulfur fuel.

Since the issue of fuel diversity has little to do with the implementation date of the proposed regulations, the Department should not defer or delay the implementation date of this proposed regulation.

Comment: To provide the market with more time to adjust to the significant increase in demand for low-sulfur fuel, subsection (c) should be revised to begin the implementation of the first phase of SO_2 emission reductions from July 1, 2003 to January 1, 2004.

Commentor submitting this comment: Competitive Power Coalition

Response: The previous response addresses the Competitive Power Coalition's comment.

3. Comment regarding the statement of source obligation — (c)(1)

Comment: Subsection (c)(1) currently provides that the owner or operator of an affected unit shall "combust fuel with a sulfur limit . . . ." This should be revised to read "combust fuel *or a combination of fuels* with a sulfur limit . . . ."

In addition, subsection (c)(1) should be revised to state the method by which the weighted-average fuel sulfur content of a combination of fuels is to be measured. A suggested method is to average such combinations of fuels based on the proportion of heat input into the unit.

Further, the Department should clarify that the fuel sulfur limitation in subsection (c)(1) is based on an annual average.

Commentor submitting this comment: Wisvest

Response: The intent of the proposed regulation is to ensure that all fuel combusted at a source is at, or below, the applicable fuel sulfur limit (0.5% or 0.3%). As such the Department should clarify subsection (c) as follows:

"On and after January 1, 2002 and except as provided in subsection (f) and (g) 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_2 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 0.5 pounds SO_2 per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at a premises."

The Department has reviewed the request that averaging times be calculated on an annual basis because Executive Order 19 requires annual emission reductions. The Department should amend the referenced averaging period within Section 19a to allow quarterly averaging. A longer averaging time will ensure that local environmental goals are met while providing additional flexibility to sources for compliance purposes.

In accordance with this comment, the Department should adopt the following definition of calendar quarter:

> "(a)(3) "Calendar quarter" means the period of January 1 through March 31, April 1 through June 30, July 1 through September 30 or October 1 through December 31."

This averaging period should be inserted throughout Section 19a.

4. Comments regarding the 0.5% fuel sulfur limit — (c)(1)

Comment: Executive Order No. 19 calls for the Department to propose regulations that "reduce annual sulfur dioxide emissions by an amount 30 to 50% greater than current commitments." The current state commitment is a fuel sulfur standard of 1%. A first-phase reduction to 0.7% fuel sulfur would represent a 30% reduction. The 0.7% standard would also more closely follow the markets for residual fuel oil, since 0.7% is a standard grade and 0.5% is not. An additional benefit would be the maintenance of fuel diversity, which is necessary for a stable and affordable supply of electricity. Subsection (c)(1) should be revised to require a fuel sulfur limit of 0.7%.

Commentor submitting this comment: Wisvest; Pfizer

Response: The Department should not revise the proposed regulation based on this recommendation. This comment has been addressed earlier in this report. See response to comment in Part VII A 1.

Comment: The emissions from new gas-fired power plants are much lower than the proposed requirements for coal-fired power plants.

In the interest of establishing a level playing for all power plants in New England, the Department should revise subsection (c) to require more stringent emission limits for coal-fired power plants.

Commentors submitting this comment: American National Power; David M. Brown; Conservation Law Foundation

Response: The Department's function is not to "level the playing field" among different units in a competitive electricity generating market. The viability of the competitive electricity generating market will be a function of the participating units employing different technology, diverse fuels, and various control technologies.

The goal of the proposed regulations is to reduce emissions of SO_2 and NO_x in a fuel neutral manner and to improve public health and the environment as a result.

The Department should not revise subsection (c) to require more stringent emission limits for coal-fired power plants.

5. Comments regarding the 0.5 lbs/MMBTU emission limit — (c)(2)

Comment: To be consistent with the suggested change to the fuel sulfur limit, subsection (c)(2) should be revised to require an emission rate of 0.7 lbs/MMBTU.

In addition, subsection (c)(2) provides that the SO_2 emission rate shall be averaged over an individual calendar month. Executive Order No. 19 requires annual reductions of SO_2. A monthly averaging period would eliminate the use of seasonal fuel switching as a compliance option. Also, a monthly averaging period would not take into consideration the lengthy maintenance outages typical of large utility plants.

Subsection (c)(2) restricts the emission averaging option to be restricted to "one or more units at a premises." In consideration of the regional scope of the effects of the resulting emissions and concurrent lack of local effects, subsection (c)(2) should be revised to provide for emissions averaging among all units under common ownership in Connecticut.

Commentor submitting this comment: Wisvest

Response: The Department has already addressed the first two portions of this comment. See response to comments 3 and 4 above.

With respect to the recommended change to (c)(2), the Department should not allow emissions averaging across all units under common ownership. The Department received testimony indicating if local health impacts from a particular air pollutant are suspected, the prudent regulatory approach is to combine strict emission limitations on a source by source basis while providing economic incentive (including emissions trading) to leverage greater emission reductions. See page 38 of the ED Report submitted into the record by Wisvest.

6. Comments regarding the averaging period for the 0.5 lbs/MMBTU emission limit — (c)(2)

Comment: Subsection (c)(2) provides that the SO_2 emission rate shall be averaged over an individual calendar month. Executive Order No. 19 requires annual reductions of SO_2. A monthly averaging period would eliminate the use of seasonal fuel switching as a compliance option. Also, a monthly averaging period would not take into consideration the lengthy maintenance outages typical of large utility plants.

Subsection (c)(2) should be revised to provide for annual averaging.

Commentors submitting this comment: Wisvest; Competitive Power Coalition

Response: The Department should not revise the proposed regulation in accordance with this recommendation. See response to comment 3 above.

Comment: The body responds to average concentrations of an air pollutant and peaks in concentrations. To better protect public health, subsection (c)(2) should be revised to provide for daily averaging.

Commentor submitting this comment: Connecticut Coalition for Environmental Justice

Response: The Department has determined that daily averaging is not practically or technically feasible. The Department has addressed the averaging issue in response to comment 3 above.

Comment: A monthly averaging period is unnecessary to yield the environmental benefits of the 0.5 lbs/MMBTU emission limit. A calendar year average allows fuel diversity and aids in maintaining a reliable electricity supply.

Subsection (c)(2) should be revised to read: "Meet an average emissions rate of equal to or less than 0.5 pounds SO_2 per MMBTU calculated over an individual calendar year for one or more affected units at a premise or for a portfolio."

Commentor submitting this comment: NRG

Response: The Department has addressed the SO_2 averaging issue in response to comment 3 above.

E. Additional Emission Reduction Requirements — 22a-174-19a(d)

1. Comments regarding the required retirement of SO_2 allowances — (d)(1)

Comment: Subsection (d)(1) requires the retirement of one SO_2 allowance, the currency of the federal Acid Rain Program, for each ton of SO_2 emitted, in addition to any requirements imposed under 40 CFR parts 72 and 73. This essentially exacts a two-for-one penalty for each ton of SO_2 emitted.

This is poor environmental policy. First, it does not establish market-based *incentives*, which are required under Executive Order No. 19, but *disincentives*. Second, since the retirement of SO_2 allowances is based on actual emissions in Connecticut, regional emissions will rise as state emissions decrease. If Sections 19a and 22 force all Acid Rain Program sources in Connecticut to cease operations, regional SO_2 emissions will revert to the current level, with no net environmental benefit.

This would also violate the federal Acid Rain Program. Under 40 CFR section 72.72(a), the following state actions violate federal law: 1) prohibitions, inconsistent with the Acid Rain Program, on the acquisition or transfer of SO_2 allowances by an Acid Rain Program source; and 2) restrictions, inconsistent with the Acid Rain Program, on a source's ability to sell or otherwise obligate its SO_2 allowances.

This limit on state authority was deemed "*necessary* to ensure that a national allowance market has an opportunity to develop" and that sources can comply with the Acid Rain Program "in the most cost-effective manner possible." See 58 Fed. Reg. 3614 (January 11, 1993) (emphasis added). The EPA recognized that an allowance market would likely fail if states had the ability to restrict the transfer of allowances. See 58 Fed. Reg. 3615.

Under this proposal, Connecticut will restrict a source's ability to effectively transfer SO_2 allowances as contemplated by the Acid Rain Program

In addition, this proposal raises issues of constitutional law. By attempting to regulate the national SO_2 allowance market, proposed Section 19a may violate the Commerce Clause of the U.S. Constitution.

Commentor submitting this comment: Wisvest

Response: Wisvest indicated that Section 19a violates the federal Acid Rain Program by prohibiting the acquisition and transfer of SO_2 allowances by an Acid Rain Program source and restricting the source's ability to sell or otherwise obligate its SO_2 allowances.

The Department disagrees with the conclusion of Wisvest. First, the Clean Air Act expressly reserves the authority of the states to regulate air emissions. See 42 U.S.C. section 7416, Retention of State Authority . Second, nothing in Title IVA of the Clean Air Act (42 U.S.C. section 7651, et seq.) expressly preempts further state regulation of Acid Rain Program sources. Third, the federal regulations that implement the Acid Rain Program state ". . . the provisions of

the acid rain program shall not be construed in any manner to preclude any State from adopting and enforcing any other air quality requirement. . . that is not less stringent than, and does not alter, any requirement applicable to an affected unit or affected source under the acid rain program. . ." Nothing in Section 19a affects the manner in which an Acid Rain Program source complies with the Acid Rain Program. Rather, the state program imposes requirements that are in addition to the Acid Rain Program requirements. The Department chose to provide flexibility to the affected sources by allowing the use of an existing tool (i.e., federal SO_2 allowances) as a compliance mechanism and market-based incentive in Sections 19a(d) and (h).

Wisvest indicated that Section 19a might violate the Commerce Clause of the United States Constitution by attempting to regulate national SO_2 markets.

Wisvest does not clearly state the impact of Section 19a on the national SO_2 markets. Presumably, Wisvest is concerned that Section 19a would somehow increase the cost of a national SO_2 allowance to such a degree that it would effectuate a restriction on interstate commerce.

The Department believes that this concern is without merit and based on a fundamental misunderstanding of the regulatory intent of the proposal. First, the regulatory program is one of general application that evenly addresses all similar sources within Connecticut. Second, Section 19a is based on a legitimate state interest to further protect the public health and environment for the benefit of all the people of Connecticut. Third, Section 19a does not benefit in-state businesses to the detriment of out-of-state businesses. Fourth, Section 19a, by imposing a higher value on the emissions of SO_2 emitted within Connecticut, do not restrict or interfere with interstate commerce. Even if the increased demand in SO_2 allowances resulting from Section 19a increases the price of SO_2 allowances, the relative size of the Connecticut market (65,000 allowances) compared to the relative size of the national market (10,000,000 allowances) cannot be deemed such an excessive burden on interstate commerce.

In support of the Department's position it should be noted that the Commerce Clause, on its face, is a grant of power to Congress and not a restriction on state regulation. This fact notwithstanding, the United States Supreme Court has consistently upheld state law, based on a legitimate state interest in protecting the health and welfare of its citizenry, that does not discriminate against interstate commerce or operate to disrupt its required uniformity. Even in cases where state laws are shown to impose a burden on interstate commerce, the Court has upheld state requirements where the burden on interstate commerce is slight and the objective of the state requirement is legitimate.

If the Department found that the federal Acid Rain Program and constitutional concerns of Wisvest were valid, Section 19a would need to be stripped of any inference or reference to federal SO_2 allowances. This would severely limit the flexibility now offered by Section 19a by restricting the use of market-based incentives solely to the generation and use of SO_2 DERCs.

In order to recognize the role of EPA in the retirement of allowances pursuant to subsection (d) of Section 19a, the Department should revise subsection (d)(1) and (d)(2) 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_2 allowance, rounded up to the next whole ton, for each ton of SO_2 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 owner or operator of an affected unit shall retire the necessary amount of SO_2 allowances by requesting that the Administrator transfer such allowances to the Connecticut State SO_2 Retirement Account established by the commissioner pursuant to 40 CFR 73.31 and administered by EPA under the provisions of 40 CFR Parts 72 and 73. The transfer of SO_2 allowances in accordance with the provisions of this subdivision shall occur by March 1 for emissions occurring in the previous calendar year.

Comment: The limitation of the use of SO_2 allowances will encourage a gradual deterioration in the operation of the SO_2 allowance market towards command-and-control regulation. The many environmental and economic benefits obtained through emissions trading will not be realized.

Commentor submitting this comment: The Clean Energy Group

Response: The limitation of the use of SO_2 allowances will not induce a gradual deterioration of the SO_2 allowance market; the use of SO_2 allowances will remain a compliance option as viable as the use of SO_2 DERCs, the combustion of low-sulfur fuel, and the installation of emissions controls.

Comment: Subsection (d) does not provide any market-based incentive to Acid Rain Program sources. Subsection (d) should be deleted.

Commentor submitting this comment: NRG

Response: The Department should not delete subsection (d) from Section 19a as recommended. This provision does, in fact, provided an economic incentive for sources to further reduce SO_2 emissions within Connecticut by requiring such sources to retire an additional SO_2 allowance (in addition to the SO_2 allowance surrendered to EPA under the federal Acid Rain Program) for each ton of SO_2 emitted in Connecticut. By adding additional costs to each ton of air pollution emitted in Connecticut, subsection (d) provides an economic incentive to further reduce air pollution. This requirement is also consistent with Executive Order 19, which directs the development of market based incentives for this proposed regulation.

2. Comments regarding the geographic restriction on the use of SO_2 allowances — (d)(3)

Comment: Subsection (d)(3) restricts the SO_2 allowances available for compliance with proposed subsection (d)(1) to those allocated to an Acid Rain Program source in Connecticut. Only if a sufficient quantity of these SO_2 allowances are "not available" may SO_2 allowances from Acid Rain Program sources outside Connecticut be used for compliance.

Subsection (d)(3) should be revised to allow for the use of SO_2 allowances issued to any Acid Rain Program source in the Ozone Transport Region. This would be consistent with the need for regional reductions of SO_2, and would be the first step towards a Connecticut plan with applicability to a broader region.

If this suggested change is not made, the Department should revise subsection (d)(3) to clarify the meaning of "not available."

Commentor submitting this comment: Wisvest

Response: The Department should amend the geographic restrictions on the use of SO_2 allowances in subsection (d)(3) as follows:

> (3) Any SO_2 allowance retired in accordance with the provisions of this subsection shall be an allowance originally issued by the Administrator to a Title IV source located in the state of Connecticut or in any affected state.

By amending subsection (d)(3) as described above, the definition of "not available" is no longer at issue.

The Department should consider expanding the geographical scope of emissions trading, while continuing to ensure local emission reductions in Connecticut, at such time that a regional approach to further reducing SO_2 emissions is implemented.

Comment: Should the Department not delete all of subsection (d), it should revise subsection (d)(3) to allow for the use of SO_2 allowances allocated to any Acid Rain Program source.

Subsection (d)(3) should be revised to read: "Any SO_2 allowance retired in accordance with the provisions of this subsection shall be an allowance originally allocated to a Title IV source."

Commentor submitting this comment: NRG

Response: The Department should not delete subsection (d). The Department has recommended revising subsection (d)(3) to authorize the use of allowances from Connecticut and any other affected state. See response above.

F. Sulfur Dioxide Emission Standards and Fuel Sulfur Limits Effective After December 31, 2002 — 22a-174-19a(e)

1. Comment regarding means of implementation of the second phase of SO_2 emission reductions

Comment: The Department has overlooked viable means of implementing the first phase of SO_2 emission reductions. The following two alternatives would achieve the goal of Executive Order No. 19, provide the same level of environmental benefit as Section 19a as proposed, and incorporate several relevant considerations.

Alternative #1

For each facility in a portfolio, require a fifty percent decrease in annual SO_2 emissions (in tons) from a baseline period. In addition, require the portfolio to meet an annual emission rate of 0.3 lbs/MMBTU. Allow for the use of SO_2 DERCs and SO_2 allowances to meet the 0.5 lbs/MMBTU emission rate.

This alternative would require the revision of subsection (a) to add the terms "baseline period" and "portfolio." "Baseline period" should be defined as "the two highest years of operation between and including 1997 through 1999." "Portfolio" should be defined as "a group of affected units operating under common ownership."

Alternative #2

For each facility in a portfolio, set an annual SO_2 tonnage cap based on an emission rate of 0.3 lbs/MMBTU multiplied by the facility's heat input (in MMBTU) during the baseline period. The cap could be exceeded, only in an emergency situation (such as inadequate fuel supply or loss of a base load generating unit), through the use of SO_2 DERCs and SO_2 allowances.

This alternative would require the revision of subsection (a) to add the terms "baseline period" and "portfolio" and their definitions as detailed in the summary of Alternative #1.

To incorporate these two compliance options, the Department should revise subsection (e) as follows:

(1) Meet an SO_2 emissions tonnage cap over a portfolio calculated as the emission rate of 0.3 lb/MMBTU times the heat input for the baseline period for the sources covered in the cap divided by 2000; or

(2) Meet a portfolio emission rate of 0.3 lb/MMBTU in accordance with the provisions of subsection (h) of this section, provided that each premise in the portfolio achieves an actual SO_2 tonnage reduction equal to 50% of its SO_2 emissions in the baseline period; or

(3) The provisions of paragraph (3) can be exceeded in the case of an emergency situation such as the loss of generating capacity or inadequate fuel supply.

Commentor submitting this comment: NRG

Response: The Department appreciates the concepts embodied in the alternative approaches proposed by NRG. Although these are viable options, equivalent overall reductions are not ensured by NRG's alternative approach. The Department should not adopt the alternative approaches at this time as this could significantly delay the public health and environmental protection goals embodied in the proposed regulations.

2. Comments regarding the implementation date of further SO_2 reductions

Comment: For the sake of clarity, subsection (e) should be revised to read: "*Beginning* December 31, 2002 . . . ."

Commentor submitting this comment: Connecticut Coalition for Clean Air

Response: The Department should revise subsection (e) to read: "On and after January 1, 2003, ..."

Comment: Subsection (e) proposes to implement a further phase of SO_2 reductions one year after the initial phase. To allow sufficient time for the development of a regional SO_2 cap-and-trade program, subsection (e) should be revised to establish the implementation date of the second phase as no earlier than January 1, 2005.

Commentor submitting this comment: Wisvest

Response: The Executive Order requires the implementation of emission reductions no later than May 1, 2003. The Department should not defer implementation of the emission reduction requirements past this date. While the Department would welcome regional participation in a program similar to that established in the proposed regulations, the Department cannot ensure that such a program will be developed. The Department recognizes that cap-and-trade programs are suited in instances where a pollution control program is designed to reduce regional air pollution. However in the case of SO_2, the Department is developing a hybrid approach to require reductions at both the local and regional level.

Comment: After the implementation of the first phase of SO_2 emission reductions (at a suggested 0.7% fuel sulfur limit), the Department should allow at least one full year of data gathering and evaluation before considering the second phase of SO_2 reductions.

Commentor submitting this comment: Pfizer

Response: After the implementation of the first phase of SO_2 emission reductions, the Department will continue to monitor ambient concentrations of SO_2 and sulfate particles, and evaluate the impact of such emission reductions on ambient concentrations of all pollutants of concern.

During this time, however, the Department should have the second phase of reductions prepared for implementation. The Department should not revise Section 19a to suspend the implementation of the second phase of SO_2 emission reductions pending monitoring and evaluation of ambient concentrations. As with any air pollution control program, the Department should measure the performance of the program relative to the environmental goals.

Comment: In the interest of preserving fuel diversity, subsection (e) should be revised to implement the second phase of SO_2 emission reductions in 2007 or 2010.

Commentor submitting this comment: Competitive Power Coalition

Response: As stated previously, the Department drafted proposed Section 19a so that the issue of fuel diversity is ultimately left to the sources subject to Section 19a. In the second phase of SO_2 emission reductions, just as in the first phase, Section 19a does not require the use of low-sulfur fuel. Rather, the use of SO_2 allowances, SO_2 DERCs, and the installation and operation of post-combustion emissions controls are alternatives to the use of low-sulfur fuel.

3. Comment regarding the statement of source obligation — (e)(1)

Comment: Subsection (e)(1) currently provides that the owner or operator of an affected unit shall "combust fuel with a sulfur limit . . . ." This should be revised to read "combust fuel *or a combination of fuels* with a sulfur limit . . . ."

In addition, the Department should clarify that the fuel sulfur limitation in subsection (e)(1) is based on an annual average.

Commentor submitting this comment: Wisvest

Response: The intent of the proposed regulation is to ensure that, on average, all fuel combusted at a source be below the applicable fuel sulfur limit. As such the Department should amend the proposed rule to adopt the proposed change to (e)(1).

To clarify the intent of the Department, consistent with the provisions of this comment, subsection (e)(1) should be revised to read as follows,

"Notwithstanding the provisions of subsection (b) of this section and except as provided in subsection (f) 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 SO_2 per MMBtu for each calendar quarter for an affected unit at a premises;
(3) Meet an average emission rate of equal to or less than 0.3 pounds SO_2 per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at a premises; or
(4) Meet an average emission rate equal to or less than 0.3 pounds SO_2 per MMBtu calculated for each calendar quarter in accordance with the provisions of subsection (h) of this section, provided that each affected unit or units:
   (A) Combusts 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), or
   (B) Meets an actual quarterly average emission rate that does not exceed 0.55 pounds SO_2 per MMBtu."

The Department has reviewed the request that averaging times be calculated on an annual basis because Executive Order 19 requires annual emission reductions. The Department should amend the referenced averaging period within Section 19a to allow quarterly averaging. A longer averaging time will ensure that local health and environmental goals are met while providing additional flexibility to sources for compliance purposes.

4. Comments regarding the 0.3% fuel sulfur limit — (e)(1)

Comment: Executive Order No. 19 calls for the Department to propose regulations that "reduce annual sulfur dioxide emissions by an amount 30 to 50% greater than current commitments." The current state commitment is a fuel sulfur standard of 1%. A second-phase reduction to 0.5% fuel sulfur would represent a 50% reduction. This is consistent with the upper bound of reductions in Executive Order No. 19 and the agreement of the New England governors and eastern Canadian premiers to reduce regional SO_2 emissions by 50%.

In addition, other than natural gas, there is great uncertainty about the future cost and availability of fuels with a 0.3% sulfur content. A fuel sulfur limit of 0.3% may push Connecticut irretrievably towards an overdependence on a single fuel.

Commentor submitting this comment: Wisvest

Response: Executive Order No. 19 establishes minimum SO_2 emission reduction requirements of 30%, and explicitly provides that it does not restrict the Department from requiring greater emission reductions.

As discussed previously, fuel diversity is an issue ultimately left to the sources subject to Section 19a. The combustion of low-sulfur fuel is one viable option of many, including the installation

of post-combustion emissions controls, facility averaging, and the use of SO_2 allowances and SO_2 DERCs.

The Department should not revise subsection (e)(1) to require a 0.5% fuel sulfur requirement.

Comment: The emissions from new gas-fired power plants are much lower than the proposed requirements for coal-fired power plants.

In the interest of establishing a level playing for all power plants in New England, the Department should revise subsection (e) to require more stringent emission limits for coal-fired power plants.

Commentors submitting this comment: American National Power; David M. Brown; Conservation Law Foundation

Response: As discussed previously, the Department's function is not to "level the playing field" among different units in a competitive electricity generating market. The viability of the competitive electricity generating market will be a function of the participating units employing different technology, diverse fuels, and various control technologies.

The goal of the proposed regulations is to reduce emissions of SO_2 and NO_x in a fuel neutral manner and to improve public health and the environment as a result.

The Department should not revise subsection (e) to require more stringent emission limits for coal-fired power plants.

5. Comment regarding the 0.3 lbs/MMBTU emission limit — (e)(2)

Comment: To be consistent with the suggested change to the fuel sulfur limit, subsection (e)(2) should be revised to require an emission rate of 0.5 lbs/MMBTU.

In addition, subsection (e)(2) provides that the SO_2 emission rate shall be averaged over an individual calendar month. Executive Order No. 19 requires annual reductions of SO_2. A monthly averaging period would eliminate the use of seasonal fuel switching as a compliance option. Also, a monthly averaging period would not take into consideration the lengthy maintenance outages typical of large utility plants.

Commentors submitting this comment: Wisvest; Competitive Power Coalition; NRG

Response: There is no need for consistency with the recommended change in the proposed emission rate because the Department has not proposed to change such rate. With respect to the averaging period issue, the Department has addressed this concern. See response to comment 3, above.

6. Comments regarding the averaging period for the 0.5 lbs/MMBTU emission limit — (e)(2)

Comment: A monthly averaging period is unnecessary to yield the environmental benefits of the 0.3 lbs/MMBTU emission limit. A calendar year average allows fuel diversity and aids in maintaining a reliable electricity supply.

Subsection (e)(2) should be revised to read: "Meet an average emissions rate of equal to or less than 0.3 pounds SO_2 per MMBTU calculated over an individual calendar year for one or more affected units at a premise or for a portfolio."

Commentor submitting this comment: NRG

Response: With respect to the averaging period issue, the Department has addressed this concern. See response to comment 3, above.

Comment: The body responds to average concentrations of an air pollutant and peaks in concentrations. To better protect public health, subsection (e)(2) should be revised to provide for daily averaging.

Commentor submitting this comment: Connecticut Coalition for Environmental Justice

Response: The Department has proposed to adopt a quarterly averaging period. The Department anticipates that the stringency of the proposed emission rates will prevent the peak concentrations from exceeding 0.55 pounds SO_2 per MMBtu. For more information on the averaging period issue, see response to comment 3, above.

7. Comment regarding the 0.3 lbs/MMBTU emission limit — (e)(3)

Comment: To be consistent with the suggested changes to the fuel sulfur limit and average emission rate, subsection (e)(3) should be revised to reference emission rates of 0.5 lbs/MMBTU and 0.7 lbs/MMBTU.

In addition, subsection (e)(3) should be revised to provide that a source that complied with the first phase SO_2 emission reductions by combusting low-sulfur fuel may comply with subsection (e)(3) through emissions trading pursuant to subsection (h).

Commentor submitting this comment: Wisvest

Response: The Department has not proposed to change this rate.

The ability to use SO_2 allowances and SO_2 DERCs for compliance with the second phase of SO_2 emission reductions is dependent upon whether a source complied with the first phase. A means of compliance with the first phase is the combustion of low-sulfur fuel, which subsection (e)(3)

does not mention. Subsection (e)(3) is renumbered to subsection (e)(4) in accordance with an earlier comment.

The Department should revise subsection (e)(4) to read:

> Meet an average emission rate equal to or less than 0.3 pounds SO_2 per MMBtu calculated for each calendar quarter in accordance with the provisions of subsection (h) of this section, provided that each affected unit or units:
>
> (A) Combusts 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), or
>
> (B) Meets an actual quarterly average emission rate that does not exceed 0.55 pounds SO2 per MMBtu.

G. Compliance Extension for Post-2002 Sulfur Dioxide Emission Standards and Fuel Sulfur Limits — 22a-174-19a(f)

1. Comment regarding the wording of the provision for extension — (f)(1)

Comment: For the sake of clarity, the phrase "a one year extension" should read "one one-year extension."

Commentor submitting this comment: Connecticut Coalition for Clean Air

Response: The Department should clarify that it intended such extension to be a single event lasting in duration up to one year.

2. Comment regarding the deadline for requesting a one-year extension — (f)(1)

Comment: Subsection (f)(1) provides that an owner of an affected unit that is also an Acid Rain Program source may request, within six months of the effective date of Section 19a, a one-year extension to comply with the requirements of subsection (e). This extension option appears to apply only to the owner of a source who decides to switch fuels to natural gas or to install emissions controls. Despite the best efforts of such an owner, unforeseen events, may preclude the source from meeting the implementation date. Possible events include delays in the delivery of equipment; permitting delays; lack of skilled workers; inability to schedule the required outage time with ISO-New England; and acts of God.

Subsection (f)(1) should be revised to provide for such instances by reading: "In the case of a delay beyond the control of the affected source's owner or operator, the owner or operator can apply to the Commissioner for an extension of the implementation date of subsection (e)

provided that the owner or operator documents that (i) the project was initiated within a timely manner, and (ii) the project has been delayed despite the best efforts of the affected unit's owner or operator."

Commentor submitting this comment: NRG

Response: The Department has reconsidered the provisions of subsection (f) and proposes to revise this subsection as follows:

(1) The commissioner may authorize an extension, to expire no later than June 1, 2003, to comply with the requirements of subsection (c) or (e) of this section upon the request of an owner or operator of an affected unit provided such request is filed with the commissioner no later than 120 days before the applicable compliance date of subsection (c) or (e) of this section.

(2) Before granting or denying a request for an extension pursuant to subdivision (1) of this subsection, the commissioner shall make a finding, after consultation with the Department of Public Utility Control, to determine whether the provisions of this section will substantially impact the reliable generation or delivery of electricity to residential, commercial and industrial users in the state. The commissioner may hold a public hearing prior to granting or denying such request for an extension.

(3) The commissioner may impose conditions and limitations by permit or order when granting a request for an extension under this subsection.

(4) Any extension authorized under subdivision (1) of this subsection shall require that the owner or operator of an affected unit, through a permit or order, comply with the requirements of subsection (c) or (e) of this subsection by reconstructing the existing affected unit, replacing the existing affected unit with a new source, or submitting to an emissions cap. The commissioner may require such emissions cap be equivalent to, or less than, the quantity of emissions that would have been emitted had the source complied with the requirements of subsection (c) or (e). Any emissions cap shall expire no later than June 1, 2003 and any reconstruction or replacement shall be completed no later than June 1, 2003.

(5) The extension provided by this subsection shall not relieve the owner or operator of an affected source of the requirements to comply with any applicable provision of this section, including subsection (d) of this section.

3. Comment regarding the finding of the DPUC — (f)(2)

Comment: Subsection (f)(2) provides that the commissioner shall grant the request for extension only upon a finding by the Department of Public Utility Control that provisions of Section 19a "will preclude the reliable delivery of electricity to residential, commercial, and industrial users in the state."

The Department should clarify whether the owner of the source has the responsibility to obtain the finding from the DPUC before filing the request, or the Department after receiving the request. In addition, the Department should clarify the form in which the finding will be issued.

Commentor submitting this comment: NRG

Response: The owner or operator of an affected unit will be required to seek such extension from the Commissioner of Environmental Protection. The Commissioner will consult with the DPUC before acting on a request for an extension pursuant to subsection (f). See the revised language in the previous response.

4. Comments regarding reconstruction or replacement — (f)(3)

Comment: Subsection (f)(3) does not provide a sufficient description of reconstruction or replacement. The Department should include a duplicate of Section 22(h) in Section 19a.

Commentor submitting this comment: NRG

Response: There is no need to duplicate the provisions of Section 22(h) in Section 19a(f). The elements of an acceptable proposal for reconstruction or replacement will be determined in accordance with applicable law.

Comment: Subsection (f)(3) proposes a deadline of June 1, 2003, for the reconstruction or replacement of a unit to comply with the emission reduction requirements of subsection (e). For consistency with the suggested revision to subsection (e) to establish the compliance date no earlier than January 1, 2005, subsection (f)(3) should be revised to establish the deadline for reconstruction or replacement as before January 1, 2005.

Commentor submitting this comment: Wisvest

Response: As stated earlier in this report, the Department is not recommending that Section 19a be revised to extend the compliance dates of subsection (c) or (e). Therefore, the Department need not revise subsection (f)(3) in accordance with this comment. For additional proposed changes to subsection (f), refer to comment 2 above.

Comment: Subsection (f)(3) provides that the owner of a source that wishes to reconstruct or replace the source must complete the reconstruction or replacement by June 1, 2003. Assuming the owner files an application for reconstruction or replacement as soon as possible — the effective date of revised Section 19a — he still may not be able to complete reconstruction or replacement by June 1, 2003, given the time involved in permit application review, draft permit issuance, draft permit review, public hearing, and construction.

The Department should revise subsection (f)(3) to provide that the date by which reconstruction or replacement must be completed will be as negotiated with the commissioner. The last sentence of subsection (f)(3) should read: "Such reconstruction or replacement shall be completed no later than the date specified in the order or permit for the reconstruction or replacement of the affected unit."

Commentor submitting this comment: NRG

Response: The Department should not amend subsection (f)(3) in accordance with this recommendation. The time frame established in subsection (f)(3) provides an adequate margin of time to complete a reconstruction or replacement project if the owner or operator commits to such action upon the adoption of Section 19a.

H. Fuel Emergencies — 22a-174-19a(g)

1. Comments regarding the suspension of low-sulfur fuel requirements — (g)(1)

Comment: Low-sulfur fuel encompasses low-sulfur oil and natural gas, and the users of such low-sulfur fuels include residential, commercial, industrial users. Accordingly, the last sentence of subsection (g)(1) should read: ". . . the availability of fuel that complies with such requirements is inadequate to meet the needs of residential, commercial, and/or industrial users in this state and that such inadequate supply constitutes an emergency."

Commentor submitting this comment: NRG

Response: The Department should amend subsection (g)(1) as follows:

"The commissioner may suspend the requirements of subsection (c)(1) or (e)(1) of this section for the owner or operator of any affected unit using a low sulfur fuel. 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."

Comment: The provision in subsection (g) for the suspension of the fuel sulfur limit provides excessive flexibility and should be deleted. If not, then the Department should require that all emissions attributable to the suspension be offset by the retirement of SO_2 DERCs or SO_2 allowances under subsection (h).

Commentor submitting this comment: Clean Air Task Force

Response: The Department believes that subsection (g) provides adequate flexibility in the event of a fuel emergency. The provisions of subsection (g) mirror the provisions of C.G.S. section 16a-21a. Since its adoption, C.G.S. section 16a-21a has been used once, in February 2000, to

provide a thirty-six-hour suspension when supplies of compliant 0.3% low-sulfur residential heating oil were not available.

In addition, subsection (g)(3) requires the owner or operator of an affected unit to calculate the amount of excess SO_2 emissions attributable to any limited suspension of the fuel sulfur standard. If excess emissions exceed fifty tons, the Department is authorized to require such excess emissions be offset through the emission trading provisions of subsection (h) of this section.

To clarify the intent of the Department and in response to this comment, subsection (g)(3) should be revised as follows:

"No later than thirty days after the termination of any suspension of fuel sulfur limits made pursuant to this subsection, the owner or operator of an affected unit or units shall report to the commissioner in writing the amount of SO_2 emissions in excess of those that would have occurred had the use of compliant fuel at the affected source not been interrupted. If such excess SO_2 emissions from any premises exceed fifty tons, the commissioner may require that the owner or operator of such affected unit or units offset such SO_2 emissions through the use of emission reduction trading in accordance with the provisions of subsection (h) of this section."

Comment: The provision in subsection (g) for the suspension of the fuel sulfur limit should be further restricted. Subsection (g) should require that the owner of a source that requests a suspension prove the lack of availability of low-sulfur fuel on a weekly basis. In addition, subsection (g) should provide that if the lack of availability is projected to last longer than one month, the owner subject to the suspension must prepare a plan, subject to public review, of how the facility will meet the standard as expeditiously as possible.

Commentor submitting this comment: Connecticut Coalition for Clean Air

Response: Refer to the response above for a discussion the restriction of the fuel emergencies provision within Section 19a. The Department should revise (g)(3) to address the averaging time concern consistent with the Department's response in Part VII.D.3 of this report.

I. Emissions Reduction Trading — 22a-174-19a(h)

1. Comment regarding the referenced emission rate and averaging period — (h)(1)

Comment: Consistent with prior suggested revisions regarding annual emissions averaging and the fuel sulfur limit and SO_2 emission limit after December 31, 2001, the reference to monthly average emission rate should be changed to a calendar year average and the reference to 0.5 lbs/MMBTU should be changed to "0.7 lbs/MMBTU."

Commentor submitting this comment: Wisvest

Response: The Department should not revise the proposed regulation as recommended by this comment. Please refer to earlier responses in this report that address the issue of applicable emission rates and averaging periods.

2. Comment regarding the referenced average emission rate — (h)(1)

Comment: Consistent with prior suggested revisions regarding annual emissions averaging, the last sentence of subsection (h)(1) should read: ". . . provided that the *calendar year* average emission rate for the affected unit or units at a premises does not exceed 0.5 pounds SO_2 per MMBTU."

Commentor submitting this comment: NRG

Response: The Department should not revise the proposed regulation as recommended by this comment. Please refer to earlier responses in this report that address the issue of averaging periods. In accordance with an earlier comment, a cross-reference contained in subsection (h)(1) should be revised from (e)(3) to (e)(4).

3. Comments regarding the geographic restriction on and trading ratio of SO_2 allowances — (h)(2)

Comment: Subsection (h)(2) should be revised to provide for the use of SO_2 allowances from any source within the Ozone Transport Region. Such use would be consistent with a regional program of SO_2 emission reductions.

In addition, the trading ratio of SO_2 allowances should be changed from four-to-one to two-to-one. This is consistent with the prior suggested revision to the fuel sulfur limit and emissions limit in subsection (e) to 0.5% and 0.5 lbs/MMBTU respectively.

Commentors submitting this comment: Wisvest; Competitive Power Coalition; CRRA; CBIA

Response: At such time that a regional program is implemented to further limit SO_2 emissions consistent with the approach set forth in the proposed regulations, the Department should consider extending the region from which the use of SO_2 allowances would be authorized and also consider changing the trading ratio set forth in subsection (h). At this time, however, the proposed regulation embodies a state program only. As such, the Department should neither extend the geographic region nor reduce the trading ratio as recommended by this comment.

Comment: Subsection (h)(2) would impose an increased financial burden on in-state generating sources, while improvement in Connecticut's air quality is uncertain. Rather than implement subsection (h)(2), the Department should explore regional or national strategies for reducing SO_2 emissions.

Commentor submitting this comment: The Clean Energy Group

Response: The Department does not believe that subsection (h)(2) imposes an unreasonable financial burden on in-state generating sources. Any potential increased cost is a possible indication of the value of an SO_2 DERC. As such, this provision provides further market-based incentives for in-state emission reductions throughout the second phase of Section 19a.

The Department should continue to explore and seek to develop a regional approach to SO_2 reductions similar to the very successful regional NO_x control programs. Reducing upwind emissions will assist in reducing background concentrations of primary and secondary pollutants thereby further protecting public health and the environment within Connecticut. In addition, the Department should ensure that participation in a regional program preserves the emission reductions achieved by the first phase of Section 19a.

Comment: There will be no environmental difference between an SO_2 DERC generated within Connecticut and an SO_2 allowance allocated by the Administrator.

Accordingly, the last sentence of subsection (h)(2) should be revised to read: "In the alternative, an owner or operator may retire *one (1) SO_2 allowance* for each ton or part thereof of SO_2 emitted in excess of the applicable emissions limitation in subsection (e)."

Commentor submitting this comment: NRG

Response: The generation and use of SO_2 DERCs are more beneficial to Connecticut's air quality than the use of SO_2 allowances. An SO_2 DERC represents excess emission reductions in Connecticut, while an SO_2 allowance represents an emission reduction anywhere in the United States. An additional benefit of SO_2 DERCs is the retirement of ten percent of the DERCs upon their creation, which ensures a net environmental benefit. There are no such retirement provisions applicable to SO_2 allowances.

The Department should not revise subsection (h)(2) to alter the SO_2 allowance use ratio to 1:1. In accordance with an earlier comment, two cross-references contained in subsection (h)(2) should be revised from (e)(3) to (e)(4).

4. Comment regarding the requirement to use SO_2 allowances allocated to Connecticut sources first — (h)(4)

Comment: Subsection (h)(4) provides that, if a source uses SO_2 allowances for compliance, it must first use SO_2 allowances allocated to Connecticut sources. The Department should consider this requirement in relation to the number of SO_2 allowances Acid Rain Program sources must use for compliance with Title IV, the two-for-one retirement requirement in subsection (d), and the potential availability of SO_2 DERCs.

The availability of SO_2 DERCs is unknown, and the availability of SO_2 allowances will be severely limited if the Department requires the additional retirement of SO_2 allowances under subsection (d). This will require Connecticut sources to purchase SO_2 allowances from surrounding states, and inflate SO_2 allowance prices. Sources in surrounding states will realize a financial windfall from the sale of SO_2 allowances to Connecticut sources and the ability to purchase needed SO_2 allowances at prices lower than the sale price to Connecticut sources.

To avoid this problem, the Department should delete subsection (h)(4).

Commentor submitting this comment: NRG

Response: The Department should revise subsection (h)(4) to allow the use of SO_2 allowances from Connecticut or any affected state. Given that the highest possible demand for SO_2 allowances for compliance with the second phase of SO_2 emission reductions is a maximum of 36,000 tons, the available pool of SO_2 allowances in the affected states (approximately 121,000) would be sufficient to meet the increased demand. Given the amount of available allowances, the increased demand should not significantly affect market prices for SO_2 allowances in the short term.

The Department should amend subsection (h)(4) as follows:

> (4) The owner or operator of any affected facility using SO_2 allowances as a means of compliance with the provisions of this subsection and subsection (e)(4) of this section shall ensure that such allowances were originally issued by the Administrator to a Title IV source located in the state of Connecticut or in any affected state.

This language also contains a correction to the internal cross-reference from (e)(3) to (e)(4).

5. Comment regarding the definition of the phrase "not available" — (h)(4)

Comment: Subsection (d)(3) should be revised to clarify the meaning of "not available."

Commentor submitting this comment: Wisvest

Response: This comment is addressed earlier in this report.

6. Comments regarding SO_2 DERC generation and use — (h)(5)

Comment: Subsection (h)(5) briefly discusses the generation and use of SO_2 DERCs, which may be used for compliance with the emission limits in subsection (e). However, subsection (h)(5) does not provide sufficient detail of the generation and use processes. For example, subsection (h)(5) does not specify whether generation is based on hourly, daily, monthly, or annual SO_2 emission rate or emissions. Currently, NO_x DERCs are generated and used through trading agreements and orders, which are based on policy, not regulation.

The Department should revise subsection (h)(5) to provide the detail of SO_2 DERC generation and use, or commit to adopting a separate regulation.

Commentor submitting this comment: NRG

Response: The Department established the current trading agreement and order process in 1995 to implement its NO_x RACT program in 1995. The Department developed the process as a temporary compliance measure, unsure of the need for and benefits of emissions trading. Its experience over the past five years has verified the ability of emissions trading to produce a superior environmental and economic result. The current trading agreement and order system, though resource intensive, has successfully supplied the emissions trading system. However, the Department recognizes the benefits to establishing the keystone principles and procedures of emissions trading into a regulation.

The Department should pursue the development and adoption of an emission reduction credit generation regulation. However, the adoption of this regulation is not necessary for the implementation of the proposed regulations and the Department will not commit to a date certain by which such a regulation will be adopted.

The Department should clarify the intent of subsection (h)(5)(A) as follows:

> "(A) Real, quantifiable, surplus, permanent and enforceable; and"

Comment: The requirements applicable to the generation of early reduction credits are identical to the generation of SO_2 DERCs after 2002.

Consistent with suggested revisions to subsections (a)(6) and (a)(10) above, subsection (h)(5) should be revised to more clearly state how an affected unit may generate SO_2 DERCs. Subsection (h)(5) should read: "The owner or operator of any affected unit that reduces SO_2 *that meets the following* may request that the commissioner approve such reductions *as SO_2 DERCs* in writing by permit or order provided that such reductions are:"

Commentor submitting this comment: EPA

Response: The Department should revise subsection (h)(5) in accordance with this comment.

7. Comment regarding the generation of SO_2 DERCs past 2002 — (h)(6)

Comment: Section 19a should be revised to strengthen the market-based incentives that encourage sources to reduce emissions beyond those required. New subsection (h)(6) should be added to allow the generation of SO_2 DERCs beyond 2002.

Commentor submitting this comment: NRG

Response: The Department intended that the creation and use of SO_2 DERCs be an ongoing compliance option for the emission reduction requirement set forth in subsection (e) of Section 19a. The Department should make appropriate revisions to the definition of "early reduction credit" and "SO_2 DERC" to ensure that this intent is carried through into the body of the proposed regulation.

J. Record Keeping — 22a-174-19a(i)

1. Comment regarding the exemption of certain fuels from record keeping requirements — (i)(3)

Comment: Subsection (i)(3) proposes to exempt distillate oil, motor vehicle fuel, aircraft fuel, or gaseous fuel with sulfur contents below 0.3% from record keeping requirements. Subsection (i)(3) should be revised to provide that this exemption is not applicable to an owner or operator of a source that combusted such fuels in combination with other fuels having sulfur contents above 0.3%.

Commentor submitting this comment: Wisvest

Response: The Department should revise subsection (i)(3) in accordance with this recommendation as follows:

> The owner or operator of an affected unit shall keep the records specified above 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 that 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).

K. Reporting Requirements — 22a-174-19a(j)

1. Comments regarding the reporting requirements under an annual average — (j)(1) and (2)

Comment: Should the Department revise proposed Section 19a to require an annual average rather than a monthly average, subsections (j)(1) and (2) should be revised to change the references to monthly SO_2 emissions, fuel sulfur content, and emission rate to annual SO_2 emissions, fuel sulfur content, and emission rate, respectively.

Commentor submitting this comment: Wisvest

Response: The Department should revise subsection (j)(1) and (2) to reflect quarterly averaging. This is consistent with previous recommendations by the Department in response to several comments addressed earlier in Part VII.D.3. of this report.

Comment: Should the Department revise proposed Section 19a to require an annual average rather than a monthly average, the last sentence of both subsections (j)(1) and (2) should be revised to read: "Such certification shall include actual *calendar year* SO_2 emissions in tons and either average monthly fuel sulfur content or *calendar year* emission rate, whichever is applicable, for each affected unit."

Commentor submitting this comment: NRG

Response: See response above.

Comment: Should the Department revise Section 19a to implement a portfolio tonnage cap under subsections (c) and (e), the following paragraph should be added to establish the reporting requirements:

> The owner or operator of an affected unit for which the commissioner has issued a final Title V permit shall, as part of any compliance certification pursuant to section 22a-174-33(q)(2) of the Regulations of Connecticut State Agencies, certify in writing to the commissioner compliance with the applicable provisions of this section. Such certification shall include actual calendar year SO_2 emissions in tons for the affected units at the site, total SO_2 emissions in tons for all affected units in the portfolio, and total SO_2 emissions in tons allowed under the portfolio's emission cap. The owner or operator of an affected unit for which the commissioner has not issued a final Title V permit shall certify in writing to the commissioner compliance with the applicable provisions of this section on or before March 1 of each year for the previous calendar year. Such certification shall include actual calendar year SO_2 emissions in tons for the affected units at the site, total SO_2 emissions in tons for all affected units in the portfolio, and total SO_2 emissions in tons allowed under the portfolio's emission cap.

Commentor submitting this comment: NRG

Response: Since the proposed revision on which this comment is based has not been adopted in this report, the Department should not further revise Section 19a based on this comment.

Comment: Should the Department revise Section 19a to implement a portfolio average emission rate under subsections (c) and (e), the following paragraph should be added to establish the reporting requirements:

> The owner or operator of an affected unit for which the commissioner has issued a final Title V permit shall, as part of any compliance certification pursuant to section 22a-174-33(q)(2) of the Regulations of Connecticut State Agencies, certify in writing to the commissioner compliance with the applicable provisions of this section. Such certification shall include actual calendar year SO_2

emissions in tons for the affected units at the site, total SO_2 emissions in tons for all affected units in the portfolio, and calendar year average SO_2 emission rate for the portfolio. The owner or operator of an affected unit for which the commissioner has not issued a final Title V permit shall certify in writing to the commissioner compliance with the applicable provisions of this section on or before March 1 of each year for the previous calendar year. Such certification shall include actual calendar year SO_2 emissions in tons for the affected units at the site, total SO_2 emissions in tons for all affected units in the portfolio, and calendar year average SO_2 emission rate for the portfolio.

Commentor submitting this comment: NRG

Response: Since the proposed revision on which this comment is based has not been adopted in this report, the Department should not further revise Section 19a based on this comment.

VIII. Summary of Specific Comments on Proposed RCSA Section 22a-174-22

A. General Comments

1. Comment regarding the justification of non-ozone season NO_x reductions

Comment: The Department should not implement a non-ozone season NO_x emission limit. The reductions attributable to the implementation of such a limit are not scientifically justified, either in the context of the protection of public health or of nitrogen deposition to Long Island Sound. The Department should assess the possible benefit to public health or Long Island Sound before implementing a non-ozone season NO_x limit.

Commentor submitting this comment: Pfizer

Response: As stated in Part VI of this report, the Department has determined that the general benefits to public health and the environment anticipated by the proposed regulation sufficiently justify non-ozone season NO_x limits. In addition, the reductions are consistent with the policy agreed upon as part of the New England Governors/Eastern Canadian Premiers Acid Rain Action Plan of 1998.

2. Comment regarding a regional approach

Comment: The Department should pursue the implementation of non-ozone season NO_x reductions regionally, most beneficially across the twenty-two-state NO_x SIP Call region. Such reductions should be accomplished through a cap-and-trade system implementing an emissions budget parallel to the ozone season budget. Emissions trading from the ozone season to the non-ozone season budget should be permitted.

Commentors submitting this comment: Wisvest; Pfizer; Capitol District Energy Center; Competitive Power Coalition; The Clean Energy Group

Response: The Department should pursue the implementation of a regional, non-ozone season budget through a cap-and-trade system. The Ozone Transport Assessment Group process, which served as a foundation of the NO_x SIP Call, demonstrated the environmental benefits of a regional program of NO_x reductions. Connecticut's own experience has proved the efficacy and efficiency of a cap-and-trade program to implement those reductions. Any issue of inter-season emissions trading will need to be addressed concurrently with the development of a non-ozone season emissions cap.

B. Definitions — 22a-174-22(a)

1. Comment regarding the definition of "NO_x Budget Program source" — (a)(12)

Comment: The definition of "NO_x Budget Program source" should be revised to exclude a source that is exempted from the Post-2002 NO_x Budget Program under RCSA section 22a-174-22b(d). (Section 22b(d) provides that a source that obtains a federally enforceable permit limiting its emissions of NO_x to twenty-five tons or less from May through September is exempt from section 22b(d).)

Commentor submitting this comment: Wisvest

Response: The Department views the obligations under Section 22 and Section 22b (the Post-2002 NO_x Budget Program) as distinct. Accordingly, Section 22 defines the sources subject to the non-ozone season NO_x reduction requirements by stating the key applicability criteria of Section 22b. Therefore, the exemption of sources provided in Section 22b does not apply to sources subject to Section 22.

The Department should not revise Section 22 to exclude a source that is exempted from the Post-2002 NO_x Budget Program under Section 22b(d).

C. Applicability — 22a-174-22(b)

1. Comment regarding the applicability of Section 22 to municipal waste combustors — (b)(1)

Comment: Executive Order No. 19 is not applicable to municipal waste combustors (MWCs). The Department has established emission limitations for NO_x and other pollutants for MWCs in RCSA section 22a-174-38. Accordingly, references to MWCs in Section 22 are confusing.

The Department should remove references to MWCs from subsections (e)(2)(B), (C), and (D) by adding the following language to each: "For any waste combustors not subject to section 22a-174-38, but subject to the requirements of . . . ."

Commentor submitting this comment: CRRA

Response: It is true that neither Executive Order No. 19 nor the proposed revisions to Section 22 address MWCs. It is also true that Section 38 implements NO_x emission limits for MWCs more stringent than existing Section 22. The Department's aim in proposing revisions to Section 22 is the implementation of non-ozone season emission limits on units other than MWCs.

The Department should defer consideration of this comment until such time that Section 22 is further revised.

D. General Requirements — 22a-174-22(d)

1. Comment regarding the statement of source obligations from October 1 through April 30 — (d)(2)

Comment: The statement of source obligations from October 1 through April 30 should be clarified to read "During the period from October 1, 2003 through April 30, 2004, and during the period from October 1 through April 30 each year thereafter . . . ."

Commentor submitting this comment: Wisvest

Response: The Department should revise subsection (d)(2) as recommended.

2. Comment regarding the effective date of the 0.15 lbs/MMBTU standard — (d)(2)

Comment: The implementation of the 0.15 lbs/MMBTU standard beginning October 1, 2003, will require the conversion from coal and oil to natural gas. The potential ramifications of the reliance on a single fuel, including higher electricity prices and blackouts, have prompted ISO-New England and other industry organizations to commission studies to assess the full impact. In the interest of fuel diversity, subsection (d)(2) should be revised to set a compliance date of 2007.

Commentor submitting this comment: Competitive Power Coalition

Response: The Department established the October 1, 2003, compliance date to complement the implementation of the Post-2002 NO_x Budget Program, which begins on May 1, 2003. The Post-2002 NO_x Budget Program will implement a NO_x budget in Connecticut in conjunction with the EPA's NO_x SIP Call. This budget is set in units of tons of NO_x, but is roughly based on an emission rate of 0.15 lbs/MMBTU. A key component of the Post-2002 NO_x Budget Program

and the NO_x SIP Call is the ability to acquire NO_x allowances from other participating sources. This ability to trade NO_x allowances is a supplement to the traditional means of limiting emissions of combustion control, fuel switching, and the installation of emissions controls.

The Department has similarly established the non-ozone season emission limit. Although the proposed revisions do not establish a non-ozone season budget (this is recommended — see the response to Commentors Wisvest; Pfizer; Capitol District Energy Center; Competitive Power Coalition above), they do provide for cost-effective and flexible NO_x DERC and NO_x allowance trading for compliance. Emissions trading is just as critical a component of the non-ozone season emission limit as of the Post-2002 NO_x Budget Program. As a compliance alternative, emissions trading negates the necessity of fuel switching from coal and oil to natural gas.

The Department's implementation of the NO_x Budget Program in 1999 has demonstrated the efficacy of a cap-and-trade program in reducing NO_x emission rates and mass emissions. From May through September 1990, NO_x Budget Program sources emitted 11,130 tons of NO_x with an average emission rate of 0.365 lbs/MMBTU. From May through September 1999, NO_x Budget Program sources emitted 5,830 tons of NO_x with an average emission rate of 0.163 lbs/MMBTU.

The Department should not revise subsection (d)(2) to require a compliance date of 2007.

3. Comment regarding means of compliance with the 0.15 lbs/MMBTU standard — (d)(2)

Comment: The Department has overlooked viable means of compliance with the 0.15 lbs/MMBTU non-ozone season standard. The following three alternatives would achieve the goal of Executive Order No. 19, provide the same level of environmental benefit as Section 22 as proposed, and incorporate several relevant considerations.

Alternative #1

For each facility in a portfolio, set an annual NO_x tonnage cap based on an emission rate of 0.15 lbs/MMBTU multiplied by the facility's heat input (in MMBTU) during the baseline period. The cap could be exceeded, only in an emergency situation (such as inadequate fuel supply or loss of a base load generating unit), through the use of NO_x DERCs and NO_x allowances.
This alternative would require the revision of subsection (a) to add the terms "baseline period" and "portfolio." "Baseline period" should be defined as "the two highest years of operation between and including 1997 through 1999." "Portfolio" should be defined as "a group of affected units operating under common ownership."

Alternative #2

For each facility in a portfolio, require a twenty-five percent decrease in annual NO_x emissions (in tons) from a baseline period. In addition, require the portfolio to meet a non-ozone season emission rate of 0.15 lbs/MMBTU, averaged over the non-ozone season. Allow for the use of NO_x DERCs and NO_x allowances to meet the non-ozone season emission rate.

This alternative would require the revision of subsection (a) to add the terms "baseline period" and "portfolio" and their definitions as detailed in the summary of Alternative #1.

Alternative #3

Allow sources to limit operations to meet the non-ozone season emission limit of 0.15 lbs/MMBTU. Subsection (d)(1)(E) and subsection (i) provide that a source may modify its schedule of operations to comply with the ozone season emission limit, if that source can prove that compliance with the ozone season emission limit is technologically or economically infeasible. However, Section 22 explicitly prohibits schedule modification as a means of compliance with the non-ozone season emission limit.

This alternative would require the deletion of " . . . except the emission limitation in subsection (i)(1) of this section . . . ." It would also require the addition of new subparagraph (i)(2)(C): " NO_x Budget Program sources during the non-ozone season only."

To incorporate these three options, the Department should revise subsection (d)(2) as follows:

(D) Meet a NO_x emissions tonnage cap over a portfolio calculated as the emission rate of 0.15 lb/MMBTU times the heat input for the baseline period for the sources covered in the cap divided by 2000; or

(E) Meet a portfolio emission rate of 0.15 lb/MMBTU in accordance with the provisions of subsection (e)(3) of this section, provided that each premise in the portfolio achieves an actual NO_x tonnage reduction equal to 25% of its NO_x emissions in the baseline period; or

(F) Modify the schedule of operation at the source, pursuant to subsection (I) of this section, in accordance with an order issued by the Commissioner.

(G) The provisions of paragraph (D) can be exceeded in the case of an emergency situation.

Commentor submitting this comment: NRG

Response: The Department has consistently demonstrated a commitment to achieving environmental objectives while providing sources maximum operational flexibility. This commitment is reflected in the implementation of the non-ozone season emission limit through Section 22. Sources may meet the emission limit by making combustion modifications, switching fuels, or installing post-combustion controls. In addition, sources may retire NO_x DERCs from the NO_x RACT program and NO_x allowances from the NO_x Budget Program for compliance. These provisions create the basis and opportunity for the implementation of a non-ozone season NO_x budget, as recommended in this hearing report.

NRG's proposal would revise this system from the implementation of a uniform emission limit with universal compliance options to the implementation of a source-by-source cap. This would

diverge from the consistent development from NO_x RACT to a non-ozone season cap-and-trade system.

Proposed Section 22 is a further development of the regulatory system established with NO_x RACT. This system meets or exceeds established environmental objectives while providing sources considerable operational flexibility. The result is cleaner air at a lower economic cost. To deviate from the development of this system to a more individualized system of source caps would delay the ultimate implementation of a uniform non-ozone season cap-and-trade program. The Department should not revise Section 22 to incorporate the suggested alternatives.

4. Comment regarding the use of NO_x DERCs and NO_x allowances for compliance — (d)(3)

Comment: Subsection (d)(3) currently provides that the owner or operator of a source may use NO_x DERCs and NO_x allowances for compliance. Subsection (d)(3) should be revised to be consistent with subsection (j)(1), which provides that NO_x DERCs, NO_x allowances, or a combination of both, may be used for compliance.

Commentor submitting this comment: Wisvest

Response: The Department should revise subsection (d)(3) to read "may use NO_x DERCs or NO_x allowances or both, pursuant to subsection (j) of this section . . . ."

5. Comment regarding the submission to the Administrator of a permit or order providing for the use of NO_x DERCs and NO_x allowances for compliance — (d)(3)

Comment: Subsection (d)(3) currently provides that the Commissioner shall submit a permit or order that provides for the use of NO_x allowances and NO_x DERCs for compliance to the EPA Administrator for approval. The approval process for such permits and orders is lengthy, and may not be necessary for non-ozone season emissions trading.

Commentor submitting this comment: Wisvest

Response: It is necessary to obtain the approval of the Administrator of a permit or order providing for emissions trading for compliance with NO_x RACT, but not with an emission limit more stringent than NO_x RACT.

Since the approval of the Administrator is unnecessary for a permit or order providing for emissions trading for compliance with the non-ozone season limit, the Department should revise the last sentence of subsection (d)(3) to read: "The commissioner shall submit a permit or order providing for the use of NO_x DERCs and NO_x allowances to achieve all or a portion of the reductions required under this section, except the emission limitation in subsection (e)(3) of this

section, to the Administrator for approval in accordance with the provision of 42 U.S.C. sections 7401-7671q."

E. Emission Limitations — 22a-174-22(e)

1. Comment regarding the applicability of the 0.15 lbs/MMBtu emission limit to peaking units — (e)(3)

Comment: The proposed 0.15 lbs/MMBtu non-ozone emission limit in subsection (e)(3) would apply to peaking units, which is a unit with a three-year average annual capacity factor no greater than ten percent, with the capacity factor of any one year to no greater than twenty percent. Peaking units, despite their minimal emissions, are critical in times of high customer electrical demand or times of unplanned outages of large generating units.

In consideration of the minimal emissions from peaking units, the Department should revise Section 22 to exclude peaking units. The following should be added: "Subsection (e)(3) of this section shall not apply to the owner or operator of a source if the source meets the definition of a peaking unit. If the source exceeds the annual standards for a peaking unit then, the source shall be subject to subsection (e)(3), if applicable starting October 1 of the following year."

Commentor submitting this comment: NRG

Response: The Department established the applicability of the non-ozone season emission limit to conform with the applicability criteria of the Post-2002 NO_x Budget Program. The applicability criteria are: 1) a fossil-fuel-fired stationary source that serves a generator with a nameplate capacity of fifteen megawatts or more, and 2) a fossil-fuel-fired boiler or indirect heat exchanger with a maximum heat input capacity of 250 MMBTU or more.

The applicability criteria are based on the potential NO_x emissions from these sources, not on mass emissions attributable to the historic operations of these sources. Peaking units may have low annual NO_x emissions attributable to their infrequent and limited operations. However, they retain the potential to be used to a greater extent and thus emit more NO_x.

This instance illustrates the utility of an emissions trading program in implementing emission limits on a wider group of sources, or emission limits that would otherwise be technologically or economically infeasible. Peaking units, as any other units subject to the non-ozone season emission limit, may use NO_x DERCs and NO_x allowances to comply. These NO_x DERCs and NO_x allowances provide an alternative and cost-effective means of compliance for peaking units. Since peaking units generally comprise a portion of a total portfolio of base load and intermediate units, the NO_x DERCs and NO_x allowances necessary for peaking units may be cost-effectively generated within that portfolio, avoiding many of the transactional costs attributable to emissions trading.

The Department should not revise Section 22 to exclude peaking units from the non-ozone season emission limit.

2. **Comment regarding the applicability of the 0.15 lbs/MMBTU emission limit to low-usage research and development facilities — (e)(3)**

Comment: The proposed 0.15 lbs/MMBTU non-ozone emission limit in subsection (e)(3) would apply to research and development facilities with low total NO_x emissions.

In consideration of the minimal emissions from these units, the Department should revise Section 22 to exclude low-usage research and development facilities. The Department should define a low-usage research and development facility in subsection (a) as "a unit that has a three-year average annual capacity factor no greater than ten percent, with no one year in the three-year period greater than twenty percent that is used primarily for research and development. In addition, the following provision should be added: "Subsection (e)(3) of this section shall not apply to the owner or operator of a source if the source meets the definition of a "low-usage research and development facility." If the source exceeds the annual standards for a "low-usage research and development facility" then, the source shall be subject to subsection (e)(3), if applicable starting October 1 of the following year."

Commentor submitting this comment: P&W

Response: The Department established the applicability of the non-ozone season emission limit to confirm with the applicability criteria of the Post-2002 NO_x Budget Program. The applicability criteria are: 1) a fossil-fuel-fired stationary source that serves a generator with a nameplate capacity of fifteen megawatts or more, and 2) a fossil-fuel-fired boiler or indirect heat exchanger with a maximum heat input capacity of 250 MMBTU or more.

The applicability criteria are based on the potential NO_x emissions from these sources, not on mass emissions attributable to the historic operations of these sources. Low-usage research and development facilities have low NO_x emissions attributable to their infrequent and limited operations, but they retain the potential to be used to a greater extent and thus emit more NO_x.

This instance illustrates the utility of an emissions trading program in implementing emission limits on a wider group of sources, or emission limits that would otherwise be technologically or economically infeasible. Low-usage research and development facilities, as any other units subject to the non-ozone season emission limit, may use NO_x DERCs and NO_x allowances to comply. These NO_x DERCs and NO_x allowances provide an alternative and cost-effective means of compliance for these units.

The Department should not revise Section 22 to exclude low-usage research and development facilities from the non-ozone season emission limit.

3. **Comment regarding the applicability of the 0.15 lbs/MMBtu emission limit to fast response double furnace naval boilers — (e)(3)**

Comment: The proposed 0.15 lbs/MMBtu non-ozone emission limit in subsection (e)(3) would apply to fast response double furnace naval boilers.

In consideration of the technological infeasibility of fast response double furnace naval boilers to meet an emission rate of 0.15 lbs/MMBtu, the Department should revise Section 22 to exclude these units. The following provision should be added: "Subsection (e)(3) of this section shall not apply to the owner or operator of a source that is a fast response double furnace naval boiler."

Commentor submitting this comment: P&W

Response: Please see the response to Commentor P&W above.

4. Comment regarding the applicability of the 0.15 lbs/MMBtu emission limit to municipal waste combustors — (e)(3)

Comment: In December 2000, municipal waste combustors (MWCs) must comply with annual emission standards for NO_x and other pollutants, as promulgated in RCSA section 22a-174-38. The emissions limits for NO_x represent the current Maximum Achievable Control Technology for MWCs.

The Department should clarify, either in Section 22 or in the public record, that the non-ozone season NO_x emission limit does not apply to MWCs subject RCSA section 22a-174-38.

Commentor submitting this comment: BRRFOC

Response: As indicated earlier in this report, the proposed revisions do not apply to MWCs subject to RCSA section 22a-174-38.

5. Comment regarding the 0.15 lbs/MMBtu emission limit in relation to the New Source Performance Standards — (e)(3)

Comment: The proposed NO_x limit of 0.15 lbs/MMBTU penalizes existing industrial boilers by requiring the control of emissions equivalent to the federal New Source Performance Standard (NSPS) for electric utility boilers. The 0.15 lbs/MMBTU limit is significantly more stringent than the NSPS for industrial boilers, which is 0.20 lbs/MMBTU. The EPA recognizes that a higher NO_x limit for industrial boilers is justified in consideration of the load fluctuations inherent in industrial operations and the associated difficulty of controlling NO_x emissions.

Section 22 should be revised to establish the non-ozone season NO_x emission limit as the NSPS applicable to the source category to which a particular source belongs.

Commentor submitting this comment: Pfizer

Response: The Department recognizes the stringency of the proposed non-ozone season limitation in relation to the existing NSPS applicable to industrial boilers. This is but one of many justifications for the incorporation of emissions trading into Section 22.

One of the many cited benefits of emissions trading is that it allows the limitation of emissions to a greater degree than would be possible using traditional source-by-source regulation. In this context, emissions trading allows for the implementation of an emission limitation which certain units cannot technologically or economically achieve through combustion controls.

The key to the implementation of such an emission limitation is an ample opportunity to acquire emission reductions for compliance from other sources. Under Section 22, there will be ample opportunity. Many sources — of varied type, size, age, and level of control — will be able to reduce emissions and generate NO_x DERCs.

Ample opportunity to acquire emission reductions is ensured by allowing the use of NO_x allowances for compliance. Beginning in 2003, NO_x allowances from sources in as many as twenty-two states, also of varied type, size, age, and level of control, will be available. The availability of a large number of sources of NO_x DERCs and NO_x allowances will also act to keep the price of NO_x DERCs and NO_x allowances reasonable.

The Department should not revise Section 22 even though the 0.15 lbs/MMBTU emission limit is more stringent than the applicable NSPS or industrial boilers.

6. Comment regarding the 0.15 lbs/MMBTU emission limit in relation to the Lowest Achievable Emission Rate — (e)(3)

Comment: The proposed 0.15 lbs/MMBTU non-ozone emission limit in subsection (e)(3) could be more stringent than the current Lowest Achievable Emission Rate (LAER) for a source as established through a source-specific permit determination. This would force the use of emissions trading and increase the operating costs of a unit that already meets the lowest possible emission rate.

The Department should revise Section 22 to exclude sources that are subject to LAER. The following should be added: "Subsection (e)(3) of this section shall not apply to the owner or operator of a source if the source meets the Lowest Achievable Emission Rate (LAER) for the source. If the LAER standard for the source changes to a lower rate then the source shall be subject to subsection (e)(3), if applicable, starting October 1 of the following year."

Commentors submitting this comment: NRG; P&W

Response: The Department recognizes the stringency of the proposed non-ozone season limitation in relation to the current LAER standards. This is but one of many justifications for the incorporation of emissions trading into Section 22.
One of the many cited benefits of emissions trading is that it allows the limitation of emissions to a greater degree than would be possible using traditional source-by-source regulation. In this context, it allows for the implementation of an emission limitation which certain units cannot technologically achieve through combustion controls. The key to the implementation of such an emission limitation is an ample opportunity to acquire emission reductions for compliance from other sources. Under Section 22, there will be ample opportunity. Many sources — of varied

type, size, age, and level of control — will be able to reduce emissions and generate NO_x DERCs.

Opportunity is ensured by allowing the use of NO_x allowances for compliance. Beginning in 2003, NO_x allowances from sources in as many as twenty-two states — also of varied type, size, age, and level of control — will be available. The large number of sources of NO_x DERCs and NO_x allowances will also act to keep the price of NO_x DERCs and NO_x allowances reasonable.

The Department should not revise Section 22 to provide that the non-ozone season NO_x emission limit shall apply to a source subject to a LAER standard more stringent than 0.15 lbs/MMBTU.

7. Comment regarding the stringency of the 0.15 lbs/MMBTU emission limit — (e)(3)

Comment: The emissions from new gas-fired power plants are much lower than the proposed requirements for coal-fired power plants.

In the interest of establishing a level playing field for all power plants in New England, the Department should revise subsection (e)(3) to require more stringent emission limits for coal-fired power plants.

Commentors submitting this comment: American National Power; David M. Brown
Response: As stated earlier in this report, the Department's function is not to "level the playing field" among different units in a competitive electricity generating market. The viability of the competitive electricity generating market will be a function of the participating units employing different technology, diverse fuels, and various control technologies.

The goal of the proposed regulations is to reduce emissions of SO_2 and NO_x in a fuel neutral manner and to improve public health and the environment as a result.

The Department should not revise subsection (e)(3) to require more stringent NO_x emission limits for coal-fired power plants.

F. Reconstruction and Replacement — 22a-174-22(h)

1. Comment regarding the deadline for reconstruction or replacement — (h)(1)

Comment: Subsection (h)(1) provides that the owner of a source that wishes to reconstruct or replace the source must complete the reconstruction or replacement by June 1, 2003. Assuming the owner files an application for reconstruction or replacement as soon as possible — the effective date of revised Section 22 — he still may not be able to complete reconstruction or replacement by June 1, 2003, given the time involved in permit application review, draft permit issuance, draft permit review, public hearing, and construction.

The Department should revise subsection (h)(1) to provide that the date by which reconstruction or replacement must be completed will be as negotiated with the commissioner. The last sentence of subsection (h)(1) should read: "Such reconstruction or replacement shall be completed no later than the date specified in the order or permit for the reconstruction or replacement of the affected unit."

Commentor submitting this comment: NRG

Response: Subsection (h) was originally drafted to provide the owner of a source who could not technologically or economically comply with NO_x RACT to reconstruct or replace the source. Subsection (h)(1) provided a four-year extension, to May 31, 1999, for the construction or replacement in accordance with a permit issued by the Commissioner.

The date for compliance with the non-ozone season emission limit is October 1, 2003. As proposed, revised subsection (h)(1) sets a deadline for reconstruction or replacement of June 1, 2003, *earlier* than the compliance date — a result incongruous with the original intent of subsection (h).

Since subsection (h) no longer fulfills its original purpose, the Department should delete subsection (h) in its entirety. This will not foreclose reconstruction or replacement as an option to meet the non-ozone season limit.

In accordance with this recommendation, the Department should renumber the following subsections and change cross-reference accordingly. In addition, the Department should delete subsection (d)(1)(D), which references the reconstruction and replacement provisions in subsection (h).

G. Schedule Modification — 22a-174-22(i)

1. Comment regarding the use of schedule modification as a compliance option for the non-ozone season emission limit — (i)(1)

Comment: Subsection (d)(1)(E) and subsection (i) provide that a source may modify its schedule of operations to comply with the ozone season emission limit, if that source can prove that compliance with the ozone season emission limit is technologically or economically infeasible. However, Section 22 explicitly prohibits schedule modification as a means of compliance with the non-ozone season emission limit.

The Department should revise subsection (i)(1) to allow sources to limit operations to meet the non-ozone season emission limit of 0.15 lbs/MMBTU by deleting " . . . except the emission limitation in subsection (i)(1) of this section . . . ."

Commentor submitting this comment: P&W

Response: Schedule modification during the ozone season is provided to allow sources to cease operations on days on which air quality is forecasted to be unhealthful. The non-ozone season NO_x limit is proposed not to reduce ozone concentrations, but to reduce total nitrogen loading. Therefore, schedule modification is not an appropriate compliance option.

2. Comment regarding the use of schedule modification by fuel burning equipment used in training operations to comply with Section 22 emission limits — (i)(2)

Comment: The Department of the Navy operates a 900 kilowatt emergency diesel engine at the Naval Submarine Base in New London. This engine is used exclusively for the purpose of training Navy personnel in the operation of emergency generators as installed on submarines. This engine does not generate electricity and typically does not operate under a load. As a result, this engine does not significantly impact the environment, emitting on average only 1.15 tons of NO_x per year.

The options for compliance with Section 22 include the installation of emission controls, reconstruction or replacement, and emissions trading. Since this unit must simulate the emergency generators aboard submarines, the installation of emission controls, reconstruction, and replacement are not viable options. The Navy currently uses emissions trading for compliance under a trading order and agreement, the drafting and implementation of which consumes large amounts of time and resources.

Currently, subsection (i)(2) allows two types of units, units that create simulated high-altitude atmospheres for the testing of aircraft engines and units undergoing research and development, to comply with Section 22 by modifying their schedule of operations. The Department should revise subsection (i)(2) to allow fuel burning equipment used in training operations to modify their schedule of operations to comply with Section 22.

Commentor submitting this comment: Department of the Navy

Response: Schedule modification is a viable compliance option for an ozone season NO_x emission limit when a source has limited compliance alternatives and the environmental impact of allowing schedule modification is minimal.

In this instance, the Department of the Navy operates a small (900-kilowatt) emergency diesel engine with a sole, critical purpose: the training of Navy personnel in the operation of emergency generators as installed on submarines. Since the engine must simulate the emergency engines installed on submarines, reconstruction and replacement are not viable options. The installation of controls on such a small unit that operates sporadically, does not generate electricity and typically does not operate under a load would be technologically and economically infeasible. The only compliance option is emissions trading.

This engine emits on average only 1.15 tons of NO_x per year. Schedule modification would have minimal environmental impact, and may in fact have a more beneficial environmental impact.

Schedule modification would prohibit the engine from operating when it would have the greatest negative impact on air quality: the days when air quality is forecasted to be "moderate" or a worse classification. Prohibiting the engine's operation on these days could have a more beneficial environmental impact than requiring the use of emissions trading.

The Department should add new subsection (i)(2)(C) to read: "Combustion-ignition reciprocating engines used exclusively for the training of personnel in the operation and maintenance of such engines aboard submarines."

H. Emissions Reduction Trading — 22a-174-22(j)

1. Comment regarding the detail of NO_x DERC generation and use — (j)(3)

Comment: Subsection (j)(3) briefly discusses the generation and use of NO_x DERCs, which may be used for compliance with the ozone season and non-ozone season emission limits. However, subsection (j)(3) does not provide sufficient detail of the generation and use processes. Currently, NO_x DERCs are generated and used through trading agreements and orders, which are based on policy, not regulation.

The Department should revise subsection (j)(3) to provide the detail of NO_x DERC generation and use, or commit to adopting a separate regulation.

Commentor submitting this comment: NRG
Response: The Department established the current trading agreement and order process in 1995 to implement its NO_x RACT program in 1995. The Department developed the process as a temporary compliance measure, unsure of the need for and benefits of emissions reduction trading. Its experience over the past five years has verified the ability of emissions reduction trading to produce a superior environmental and economic result. The current trading agreement and order system, though resource intensive, has successfully supplied the emissions reduction trading system. However, the Department recognizes the benefits to establishing the keystone principles and procedures of emissions reduction trading into a regulation.

The Department should pursue the development and adoption of an emissions reduction credit generation regulation. However, the Department cannot and should not commit to a date certain by which such a regulation will be adopted.

Comment: Subsection (j) has been revised to provide for the use of NO_x allowances to meet the emission limits in subsection (e). Both section 22a-174-22a of the RCSA, the NO_x Budget Program, and section 22a-174-22b of the RCSA, the Post-2002 NO_x Budget Program, have restrictions on the use of NO_x allowances to meet the emission limits in subsection (e). See Sections 22a(f)(4) and 22b(i)(5).

These requirements should be specifically acknowledged in Section 22 itself. The following sentence should be added as the last sentence of subsection (j)(3): "The use of NO_x allowances

pursuant to this subsection shall also be consistent with the requirements in subsection (f)(4) of 22a-174-22a, 'The Nitrogen Oxides (NO_x) Budget Program' and subsection (i)(5) of 22a-174-22b, 'The Post-2002 Nitrogen Oxides (NO_x) Budget Program.'"

Commentor submitting this comment: EPA

Response: The Department should add the following sentence as the last sentence of subsection (j)(3): "The use of NO_x allowances pursuant to this subsection shall also be consistent with the provisions of section 22a-174-22a(f)(4) and section 22a-174-22b(i)(5) of the Regulations of Connecticut State Agencies."

I. Emissions Testing and Monitoring — 22a-174-22(k)

1. Comment regarding the averaging time of the non-ozone season NO_x limit — (k)(5)

Comment: Subsection (k)(5) establishes the averaging time for any emission limit in Section 22 as twenty-four hours for any source with a continuous emissions monitoring system (CEMS) for NO_x. Unlike the ozone season, there is no concern in the non-ozone season with NO_x emission spikes and the resulting increase in ozone concentrations.

The Department should provide for seasonal averaging during the non-ozone season. This would maintain the environmental benefit of the 0.15 lbs/MMBTU limit, provide additional operational flexibility to sources, and simplify the NO_x DERC generation and use calculations. The following sentence should be added as the final sentence of subsection (k)(5): "For sources required to comply with the emission standard of subsection (e)(3), the averaging time for the emission limit shall be from October 1 through April 30."

Commentor submitting this comment: NRG

Response: The prime concern during the non-ozone season is the total emissions of NO_x. Averaging the 0.15 lbs/MMBTU emission limit across the non-ozone season will not impair the limit's environmental benefit. This conclusion is consistent with the recommendation above to implement the non-ozone season emission limit through a NO_x emissions budget, as the ozone season NO_x limit is implemented. The resulting increase in operational flexibility and decrease in complexity of NO_x DERC generation and use calculations are welcome coincident benefits.

This averaging period will establish a regulatory system very similar to that of the ozone season NO_x budget: the concurrent application of the 0.15 lbs/MMBTU emission limit with a seasonal averaging period, and an applicable NO_x RACT emission limit with a 24-hour averaging period. NO_x DERC and NO_x allowance trading are available for compliance with both emission limits.

The Department should revise subsection (k)(5) to read:

(5) Unless otherwise specified by the commissioner in a permit or order, the averaging times for the following emission limitations shall be applicable to a source that has or is required to have a continuous emissions monitor for NO_x:

(A) For the emissions limitation in subsection (e)(3), the period from October 1 through April 30, including all periods of operation, including startup, shutdown, and malfunction; and

(B) For any other emission limitation contained in this section, twenty-four (24) hours, measured from midnight at the beginning of any day to midnight of the end of that day, including all periods of operation, including startup, shutdown, and malfunction.

Comment: For enforceability of the emission limit in subsection (e)(3), the Department must specify an averaging time, such as daily, weekly, or monthly.

Commentor submitting this comment: EPA

Response: See the response to Commentor NRG above.

2. Comment concerning alternate monitoring methods — (k)(6)

Comment: Subsection (k)(6) provides that a source may use alternate monitoring methods to demonstrate compliance with an emission limit. The Department should provide specific criteria by which alternate monitoring methods will be evaluated.

Commentor submitting this comment: EPA

Response: In the interest of not restricting the alternate methods available, the Department should not revise (k)(6) to provide specific criteria by which alternate monitoring methods will be evaluated.

J. Emissions Testing and Monitoring — 22a-174-22(k)

1. Comment concerning compliance plans — (m)(3)

Comment: Subsection (m)(3) provides that, notwithstanding subsection (m)(1), a NO_x Budget Program source subject to a revised emission standard shall not be required to submit a compliance plan unless the Commissioner requires.

The Department should revise Section 22 to explain where information provided by a compliance plan would be found.

Commentor submitting this comment: EPA

Response: Section 22 requires the submittal of compliance plans as part of the implementation of NO_x RACT. The Department required the submittal of compliance plans by September 1, 1994, well before the implementation date of May 31, 1995, to ensure that sources would be able to comply with NO_x RACT upon its implementation.

The implementation of the non-ozone season limit in subsection (e)(3) is an entirely different situation. The non-ozone emission limit will be implemented on October 1, 2003, well after the implementation of NO_x RACT, the first great reduction in NO_x emission rates. It will also be implemented after the implementation of two phases of the NO_x Budget Program, on May 1, 1999 and May 1, 2003. In short, the implementation of the non-ozone season limit is less onerous than the implementation of NO_x RACT. It is a continuation of the implementation of the ozone season limit, and there is sufficient flexibility in compliance to not require Departmental oversight of the intended means of compliance.

The Department should not revise Section 22 to explain where information provided by a compliance plan would be found. These documents are public records unless otherwise protected by state FOI provisions.

IX. Additional Comments of the Hearing Officers

The Department should make the following technical corrections to the proposed regulations:

A. Section 19a

1. Subsection (a)

Add new subsection (a)(3) to define "average emissions rate" as follows:

"Average emissions rate" means a determination of the rate of SO_2 emissions, measured in pounds of SO_2 per MMBtu, in any calendar quarter from either a single affected unit or from two or more affected units. Average emissions rate for a single unit is calculated by dividing the total quarterly SO_2 emissions, in pounds, from such unit by the total quarterly heat input, in MMBtu, for such unit. Average emissions rate for two or more units is calculated by dividing the total quarterly SO_2 emissions, in pounds, from all such units by the total quarterly heat input, in MMBtu, for all such units.

2. Subsection (h)

Amend subsection (h)(1) to delete the phrase ", provided that the average emission rate for the affected unit or units at a premises does not exceed 0.55 pounds SO2 per MMBtu in each calendar quarter."

3. Subsection (i)

Amend subsection (i)(1)(B) to read: *"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."*

Amend subsection (i)(2) to read: *"The owner or operator of an affected unit who demonstrates compliance with this section by meeting the average SO_2 emission rate limits of subsections (c)(2), (c)(3), (e)(2), (e)(3) or (e)(4) of this section shall make and keep records in accordance with the following:"*

4. Subsection (j)

Amend subsection (j)(2) as follows: *"The owner or operator of an affected unit for which the commissioner has not issued a final Title V permit shall certify in writing to the commissioner that such owner or operator is in compliance with the applicable provisions of this section on or before March 1 of each year for the previous calendar year. Such certification shall include actual quarterly SO_2 emissions in tons and either average quarterly fuel sulfur content or average quarterly emission rate, whichever is applicable, for each affected unit.*

B. Section 22

1. Subsection (b)

Amend subsection (b)(2) to read: *"Subsections (d) through (k), inclusive, of this section . . . ."*

2. Subsection (d)

Amend subsection (d)(1)(E) to read: *"File a permit application to modify the schedule . . . ."*

3. Subsection (j)

Amend subsection (j)(2) to read: *"Such owner or operator shall retire one (1) NO_x DERC or one (1) NO_x allowance for each ton of NOx emitted in excess of the applicable emission limitation in subsection (e) of this section, as calculated pursuant to a permit or order issued by the commissioner."*

4. Subsection (k)

In subsection (k)(1), delete the phrase "other than a NO_x Budget Program source."

Delete proposed subsection (k)(2), and renumber the following subdivisions accordingly.

In renumbered subsection (k)(5), delete the phrase "subsection (j)(1) of this section" and replace it with the phrase "subdivision (1) of this subsection."

5. Subsection (m)

Amend subsection (m)(4) to read: *". . . the owner or operator of a NO_x Budget Program source who is subject to a revised emission standard shall not be required to submit a revised compliance plan unless . . . ."*

X. Final Wording of the Proposed Regulations

A. The Regulations of Connecticut State Agencies are amended by adding a new section 22a-174-19a as follows:

(NEW)

Sec. 22a-174-19a. Control of Sulfur Dioxide Emissions from Power Plants and Other Large Stationary Sources of Air Pollution.

(a) Definitions. For purposes of this section:

(1) "Affected state" has the same meaning as the term "affected states" in Regulations of Connecticut State Agencies section 22a-174-33(a)(3).

(2) "Affected unit" means any emissions unit subject to the provisions of Regulations of Connecticut State Agencies section 22a-174-22b, the Post-2002 Nitrogen Oxides Budget Program.

(3) "Average emissions rate" means a determination of the rate of SO_2 emissions, measured in pounds of SO_2 per MMBtu, in any calendar quarter from either a single affected unit or from two or more affected units. Average emissions rate for a single unit is calculated by dividing the total quarterly SO_2 emissions, in pounds, from such unit by the total quarterly heat input, in MMBtu, for such unit. Average emissions rate for two or more units is calculated by dividing the total quarterly SO_2 emissions, in pounds, from all such units by the total quarterly heat input, in MMBtu, for all such units.

(4) "Calendar quarter" means the period of January 1 through March 31, April 1 through June 30, July 1 through September 30 or October 1 through December 31.

(5) "Connecticut State SO_2 Retirement Account" means a general allowance tracking system account established by the commissioner under 40 CFR 73.31 for the purpose of permanently holding SO_2 allowances retired by the owners or operators of affected units in accordance with the provisions of subsection (d) of this section.

(6) "Continuous emissions monitoring system" or "CEMS" means any equipment used to sample, analyze and measure SO_2 emissions to provide a permanent record of such emissions expressed in pounds per MMBtu.

(7) "Emissions unit" has the same meaning as in Regulations of Connecticut State Agencies section 22a-174-33(a)(7).

(8) "Early reduction credit" means a reduction of SO_2 during calendar years 1999, 2000, 2001 or 2002 below the most stringent SO_2 emission rate applicable to an affected unit pursuant to subsection (h)(5)(B) of this section.

(9) "Generation period" means the period of time during which reductions in emissions of an air pollutant are implemented.

(10) "Retire" or "retirement" when referring to SO_2 allowances, means the permanent withdrawal of SO_2 allowances by the Administrator from any allowance tracking system account to the Connecticut SO_2 Allowance Retirement Account in an amount equal to the number of tons of SO_2 emitted by each affected unit."

(11) "Sulfur dioxide" or "SO_2" means a gas that at standard conditions has the molecular form SO_2.

(12) "Sulfur dioxide Discrete Emission Reduction Credit" or "SO_2 DERC" means the reduction of one ton of sulfur dioxide at a stationary source during the generation period, which the commissioner has certified in writing as real, quantifiable, surplus, permanent, and enforceable. Early reduction credits shall qualify as SO_2 DERCs.

(13) "Title IV SO_2 allowance" or "SO_2 allowance" means an authorization allocated to a Title IV source by the Administrator, pursuant to Title IV of the federal Clean Air Act (42 USC section 7651d, et seq.) and 40 CFR Parts 72 and 73, to emit up to one ton of SO_2 during or after a specified calendar year.

(14) "Title IV source" means an affected unit that is also subject to Phase II of the acid rain control requirements set forth in Title IV of the federal Clean Air Act (42 USC section 7651d, et seq.).

(b) Applicability. This section shall apply to the owner or operator of any affected unit.

(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_2 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 0.5 pounds SO_2 per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at a premises.

(d) Additional Emission Reduction Requirements.

(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_2 allowance, rounded up to the next whole ton, for each ton of SO_2 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 owner or operator of an affected unit shall retire the necessary amount of SO_2 allowances by requesting that the Administrator transfer such allowances to the Connecticut State SO_2 Retirement Account established by the commissioner pursuant to 40 CFR 73.31 and administered by EPA under the provisions of 40 CFR Parts 72 and 73. The transfer of SO_2 allowances in accordance with the provisions of this subdivision shall occur by March 1 for emissions occurring in the previous calendar year.

(3) Any SO_2 allowance retired in accordance with the provisions of this subsection shall be an allowance originally issued by the Administrator to a Title IV source located in the state of Connecticut or in any affected state.

(e) Sulfur dioxide emission standards and fuel sulfur limits effective on and after January 1, 2003. Notwithstanding the provisions of subsection (b) of this section and except as provided in subsection (f) 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 SO_2 per MMBtu for each calendar quarter for an affected unit at a premises;

(3) Meet an average emission rate of equal to or less than 0.3 pounds SO_2 per MMBtu calculated for each calendar quarter, if such owner or operator averages the emissions from two or more affected units at a premises; or

(4) Meet an average emission rate equal to or less than 0.3 pounds SO_2 per MMBtu calculated for each calendar quarter in accordance with the provisions of subsection (h) of this section, provided that each affected unit or units:

(A) Combusts 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), or

(B) Meets an actual quarterly average emission rate that does not exceed 0.55 pounds SO_2 per MMBtu.

(f) Compliance extension for sulfur dioxide emission standards and fuel sulfur limits.

(1) The commissioner may authorize an extension, to expire no later than June 1, 2003, to comply with the requirements of subsection (c) or (e) of this section upon the request of an owner or operator of an affected unit provided such request is filed with the commissioner no later than 120 days before the applicable compliance date of subsection (c) or (e) of this section.

(2) Before granting or denying a request for an extension pursuant to subdivision (1) of this subsection, the commissioner shall make a finding, after consultation with the Department of Public Utility Control, to determine whether the provisions of this section will substantially impact the reliable generation or delivery of electricity to residential, commercial and industrial users in the state. The commissioner may hold a public hearing prior to granting or denying such request for an extension.

(3) The commissioner may impose conditions and limitations by permit or order when granting a request for an extension under this subsection.

(4) Any extension authorized under subdivision (1) of this subsection shall require that the owner or operator of an affected unit, through a permit or order, comply with the requirements of subsection (c) or (e) of this subsection by reconstructing the existing affected unit, replacing the existing affected unit with a new source, or submitting to an emissions cap. The commissioner may require such emissions cap be equivalent to, or less than, the quantity of emissions that would have been emitted had the source complied with the requirements of subsection (c) or (e). Any emissions cap shall expire no later than June 1, 2003 and any reconstruction or replacement shall be completed no later than June 1, 2003.

(5) The extension provided by this subsection shall not relieve the owner or operator of an affected source of the requirements to comply with any applicable provision of this section, including subsection (d) of this section.

(g) Fuel Emergencies.

(1) The commissioner may suspend the requirements of subsection (c)(1) or (e)(1) of this section for the owner or operator of any affected unit using a low-sulfur fuel. 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.

(2) The commissioner shall specify in writing the period of time for which the suspension described in subdivision (1) of this subsection shall be in effect.

(3) No later than thirty days after the termination of any suspension of fuel sulfur limits made pursuant to this subsection, the owner or operator of an affected unit or units shall report to the commissioner in writing the amount of SO_2 emissions in excess of those that would have occurred had the use of compliant fuel at the affected source not been interrupted. If such excess SO_2 emissions from any premises exceed fifty tons, the commissioner may require that the owner or operator of such affected unit or units offset such SO_2 emissions through the use of emission reduction trading in accordance with the provisions of subsection (h) of this section.

(h) Emissions reduction trading.

(1) The owner or operator of an affected unit may use SO_2 DERCs or SO_2 allowances to comply with the applicable emission limitations set forth in subsection (e)(4) of this section pursuant to a permit or order issued by the commissioner.

(2) Such owner or operator shall retire one (1) SO_2 DERC for each ton or part thereof of SO_2 emitted in excess of the applicable emission limitation in subsection (e)(4) of this section. In the alternative, an owner or operator may retire four (4) SO_2 allowances for each ton or part thereof of SO_2 emitted in excess of the applicable emission limitation in subsection (e)(4) of this section.

(3) Any creation or use of SO_2 DERCs for the purpose of this subsection shall be consistent with the provisions of 40 CFR 51, Subpart U and the U.S. Environmental Protection Agency's "Emission Trading Policy Statement," published December 4, 1986 (Federal Register, Volume 51, page 43814).

(4) The owner or operator of any affected facility using SO_2 allowances as a means of compliance with the provisions of this subsection and subsection (e)(4) of this section shall ensure that such allowances were originally issued by the Administrator to a Title IV source located in the state of Connecticut or in any affected state.

(5) The owner or operator of any affected unit that reduces SO_2 emissions for the purpose of generating early reduction credits or SO_2 DERCs may request that the commissioner approve such early reductions in writing by permit or order provided that such reductions are:

(A) Real, quantifiable, surplus, permanent and enforceable; and

(B) Based on an emissions rate that is the most stringent of:

(i) 0.3 pounds SO_2 per MMBtu, or

(ii) permitted allowable emissions of the affected unit.

(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.

(2) The owner or operator of an affected unit who demonstrates compliance with this section by meeting the average SO_2 emission rate limits of subsections (c)(2), (c)(3), (e)(2), (e)(3) or (e)(4) 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_2 emission rate values determined from data measured by a CEMS in accordance with the applicable provisions of 40 CFR Part 75;

(B) For affected units that are not Title IV sources:

(i) hourly SO_2 emission rate values determined from data measured by a CEMS in accordance with the applicable provisions of either 40 CFR Part 75 or 40 CFR Part 60, or

(ii) if any affected unit does not have a CEMS in accordance with either 40 CFR Parts 60 or 75, then hourly SO_2 emission rate values determined from data measured by a CEMS or other monitoring system approved by the commissioner; and

(C) For all affected units, quarterly facility SO_2 emission rate averages, determined by dividing total quarterly SO_2 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 above 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).

(j) Reporting requirements.

(1) The owner or operator of an affected unit for which the commissioner has issued a final Title V permit shall, as part of any compliance certification pursuant to section 22a-174-33(q)(2) of the Regulations of Connecticut State Agencies, certify in writing to the commissioner compliance with the applicable provisions of this section. Such certification shall include actual quarterly SO_2 emissions in tons and either average quarterly fuel sulfur content or average quarterly emission rate, whichever is applicable, for each affected unit.

(2) The owner or operator of an affected unit for which the commissioner has not issued a final Title V permit shall certify in writing to the commissioner that such owner or operator is in compliance with the applicable provisions of this section on or before March 1 of each year for the previous calendar year. Such certification shall include actual quarterly SO_2 emissions in tons and either average quarterly fuel sulfur content or average quarterly emission rate, whichever is applicable, for each affected unit.

(k) Duty to comply with the most stringent standards applicable to the affected units.

(1) Notwithstanding any provision of this section to the contrary, if the owner or operator of an affected unit is subject to a more stringent emission standard or limitation imposed by order, permit or other applicable law, such owner or operator shall comply with the most stringent emission limitation or standard.

(2) Notwithstanding any provision of this section to the contrary, if the owner or operator of an affected unit is subject to additional monitoring or reporting requirements imposed by order, permit or other applicable law, such owner or operator shall comply with the additional monitoring or reporting requirements.

Statement of Purpose: To control emissions of sulfur dioxide from power plants and other large stationary sources of air pollution in accordance with the requirements of Executive Order 19.

B. Section 22a-174-22 of the Regulations of Connecticut State Agencies are amended as follows:

Sec. 22a-174-22. Control of nitrogen oxides emissions

(a) Definitions

For purposes of this section, the following definitions shall apply:

(1) "Contract" means: (A) an agreement between a utility and a customer (or other person) to provide electricity; or (B) a change in any agreement between a utility and a customer (or other person) to provide electricity.

(2) "ELECTRICITY SUPPLIER" MEANS "ELECTRIC SUPPLIER" AS DEFINED IN SECTION 16-1(a)(30) OF THE CONNECTICUT GENERAL STATUTES, AND "MUNICIPAL ELECTRIC UTILITY" AS DEFINED IN SECTION 7-233b(8) OF THE CONNECTICUT GENERAL STATUTES.

[(2)] (3) "Emergency engine" means a stationary reciprocating engine or a turbine engine which is used as a means of providing mechanical or electrical power only during periods of testing and scheduled maintenance or during either an emergency or in accordance with a contract intended to ensure an adequate supply of electricity for use within the state of Connecticut during the loss of electrical power derived from nuclear facilities. The term does not include an engine for which the owner or operator of such engine is party to any other agreement to sell electrical power from such engine to [a utility] AN ELECTRICITY SUPPLIER, or otherwise receives any reduction in the cost of electrical power for agreeing to produce power during periods of reduced voltage or reduced power availability.

[(3)] (4) "Emergency" means an unforeseeable condition that is beyond the control of the owner or operator of an emergency engine and that:

(A) Results in an interruption of electrical power from the [utility] ELECTRICITY SUPPLIER to the [premise] PREMISES;

(B) Results in a deviation of voltage from the [utility] ELECTRICITY SUPPLIER to the [premise] PREMISES of three percent (3%) above or five percent (5%) below standard voltage in accordance with subsection (a) of section 16-11-115 of the Regulations of Connecticut State Agencies [(RCSA)];

(C) Requires an interruption of electrical power from the [utility] ELECTRICITY SUPPLIER to the [premise] PREMISES enabling the owner or operator to perform emergency repairs; or

(D) Requires operation of the emergency engine to minimize damage from fire, flood, or any other catastrophic event, natural or man-made.

[(4)] (5) "Gas" or "gaseous fuel" means natural gas, propane, or any other fuel that is in the gaseous state under standard conditions.

[(5)] (6) "gm/bk hp-hr" means grams per brake horsepower-hour.

[(6)] (7) "lb" means pound.

[(7)] (8) "MMBTU" means million BTU of heat input.

[(8)] (9) "MMBTU/hr" means million BTU of heat input per hour.

[(9)] (10) "MRC" means maximum rated capacity.

[(10)] (11) "Major stationary source of NOx" means [a premise] PREMISES with potential emissions of NOx equal to or greater than fifty (50) tons per year in a serious nonattainment area for ozone, or twenty-five (25) tons per year in a severe nonattainment area for ozone.

(12) "NOx BUDGET PROGRAM SOURCE" MEANS:

(A) A FOSSIL-FUEL-FIRED STATIONARY SOURCE THAT SERVES A GENERATOR WITH A NAMEPLATE CAPACITY OF FIFTEEN MEGAWATTS (15 MW) OR MORE; OR

(B) A FOSSIL-FUEL-FIRED BOILER OR INDIRECT HEAT EXCHANGER WITH A MAXIMUM HEAT INPUT CAPACITY OF 250 MMBTU OR MORE.

(13) "NOX DISCRETE EMISSION REDUCTION CREDIT" OR "NOX DERC" MEANS THE REDUCTION OF ONE TON OF NOX AT A SOURCE DURING A DISCRETE PERIOD OF TIME, WHICH THE COMMISSIONER HAS CERTIFIED AS REAL, QUANTIFIABLE, SURPLUS, PERMANENT, AND ENFORCEABLE.

[(11)] (14) "Other boiler" means a boiler that is not a cyclone furnace, fast-response double-furnace naval boiler, or fluidized-bed combustor.

[(12)] (15) "Other oil" means a fuel that is liquid at standard conditions and is not residual oil.

[(13)] (16) "ppmvd" means parts per million by volume on a dry basis.

[(14)] (17) ["Premise"] "PREMISES" has the same meaning as "PREMISE" IN section 22a-174-1 of the [RCSA] REGULATIONS OF CONNECTICUT STATE AGENCIES.

[(15)] (18) "Reciprocating engine" means a stationary internal combustion engine having a crankshaft turned by linearly reciprocating pistons.

[(16)] (19) "Selective noncatalytic reduction" means emission control technology [which] THAT involves the injection of a chemical reagent at high flue gas temperatures to selectively reduce NOx emissions to nitrogen and water.

[(17)] (20) "Turbine engine" means a stationary internal combustion engine [which] THAT continuously converts an air-fuel mixture into rotational mechanical energy through the use of moving vanes attached to a rotor.

[(18)"Utility" means any electric public service company as defined in section 16-1 of the General Statutes and any municipal electric utility company as defined in section 7-233b of the General Statutes.]

[(19)] (21) "Waste combustor" means an incinerator as defined in subsection 22a-174-18(c) of the REGULATIONS OF CONNECTICUT STATE AGENCIES [RCSA], a resources recovery facility as defined in section 22a-207 of the CONNECTICUT General Statutes, or a sewage sludge incinerator. The term does not include a flare or an industrial fume incinerator.

(b) Applicability

(1) This section [shall apply] APPLIES to the owner or operator of:

(A) Any of the following sources, PROVIDED SUCH SOURCES ARE LOCATED AT A MAJOR STATIONARY SOURCE OF NOx:

[(A)] (i) [Any] A reciprocating engine [which has] WITH a maximum rated capacity of three (3) MMBTU/hr or more [and which is located at a premise that is a major stationary source of NOx];

[(B)] (ii) [Any fuel-burning] FUEL-BURNING equipment, other than a reciprocating engine, [which has] WITH a maximum rated capacity of five (5) MMBTU/hr or more [and which is located at a premise that is a major stationary source of NOx];

[(C)] (iii) [Any equipment which burns] EQUIPMENT THAT COMBUSTS fuel for heating materials and [which] THAT has a maximum rated capacity of five (5) MMBTU/hr or more [and which is located at a premise that is a major stationary source of NOx];

[(D)] (iv) [Any] A waste combustor [which has] WITH a design capacity of two thousand (2000) pounds or more of waste per hour [and which is located at a premise that is a major stationary source of NOx]; or

[(E)] (B) [Any] fuel-burning equipment, A waste combustor, or A process source [which] THAT has potential emissions of NOx in excess of the following:

(i) One hundred thirty-seven (137) pounds during any day from May 1 through September 30 of any year, [for a] IF SUCH source IS located in a severe nonattainment area for ozone; or

(ii) Two hundred seventy-four (274) pounds during any day from May 1 through September 30 of any year, [for a] IF SUCH source IS located in a serious nonattainment area for ozone.

(2) [Subdivisions (d)(2) to (d)(5)] SUBSECTIONS (d)[, inclusive, and subsections (e) to] THROUGH (k), INCLUSIVE, of this section shall not apply to the owner or operator of a [premise] SOURCE if the actual emissions of NOx since January 1, 1990 from [such premise] THE PREMISES AT WHICH SUCH SOURCE IS LOCATED have not exceeded twenty-five (25) tons in any calendar year [for a premise] IF SUCH PREMISES ARE LOCATED in a severe nonattainment area for ozone, or fifty (50) tons in any calendar year [for a premise] IF SUCH PREMISES ARE LOCATED in a serious nonattainment area for ozone. Notwithstanding this provision, [subdivision (d)(2)] SUBSECTION (d) through subsection (k), inclusive, of this section shall apply TO SUCH OWNER OR OPERATOR if after May 31, 1995, [such owner or operator exceeds emissions of NOx as follows] ACTUAL EMISSIONS OF NOx FROM SUCH PREMISES EXCEED THE FOLLOWING:

(A) In any calendar year: twenty-five (25) tons for [a premise] PREMISES located in a severe nonattainment area for ozone, or fifty (50) tons for [a premise] PREMISES located in a serious nonattainment area for ozone; or

(B) On any day from May 1 through September 30 of any year: one hundred thirty-seven (137) pounds for [a premise] PREMISES located in a severe nonattainment area for ozone or two hundred seventy-four (274) pounds for [a premise] PREMISES located in a serious nonattainment area for ozone.

(3) Subsections (d) through (k) of this section shall not apply to THE OWNER OR OPERATOR OF an emergency engine. In addition, the actual emissions from emergency engines operating during an emergency shall not be included in the determination of the applicability of [subparagraph] SUBSECTION (b)(2)(B) of this section.

(4) The owner or operator of an emergency engine shall not include the actual emissions from any such engine for purposes of determining applicability in accordance with [subparagraph (B) of subdivision (2)] SUBSECTION (b)(2)(B) of this subsection, provided such emissions result from operation in accordance with a contract with a utility operating pursuant to a permit or order which:

(A) Requires the permittee to maintain a list which identifies all sources with whom the permittee has a contract;

(B) Requires either the permitee or the owner or operator of the emergency engine to record and submit to the Commissioner data on fuel consumption and hours of operation of any emergency engine operating under such contract; and

(C) Requires the permittee to obtain NOx emission reductions to offset the NOx emissions that result from the generation of customer-contracted electricity.

(6) Notwithstanding subdivision (3) of this subsection, subsections (d) through (k) of this section shall apply to the owner or operator of an emergency engine if, after May 1, 1997, such engine operates for routine, scheduled testing or maintenance on any day for which the Commissioner has forecast that ozone levels will be "moderate to unhealthful," "unhealthful," or "very unhealthful." The Commissioner may exempt, by permit or order, the owner or operator of an emergency engine from this subdivision, if such emergency engine is unattended, the testing is automated and cannot be modified from a remote location.

(c) Exemption.

This section shall not apply to THE OWNER OR OPERATOR OF A mobile [sources] SOURCE.

(d) General requirements.

[(1) Prior to May 31, 1995, the owner or operator of any source subject to this section shall not cause or allow emissions of NOx from such source in excess of the emission limitation specified in Table 22-1 of this section. The owner or operator of any source which is not subject to an emission limitation in Table 22-1 of this section shall not cause or allow emissions of NOx from such source in excess of seven hundred (700) ppmvd.

TABLE 22-1

NOX EMISSION LIMITATIONS PRIOR TO MAY 31, 1995
(IN POUNDS PER MMBTU OF HEAT INPUT)

	GAS-FIRED	OIL-FIRED	COAL-FIRED
Turbine engine	0.9	0.9	NA
Cyclone furnace	0.9	0.9	0.9
Fast-response double-furnace	0.5	0.5	0.9
Naval boiler			
Other boiler, with MRC of 250 MMBTU/hr or more	0.9	0.3	0.9
Other boiler, with MRC less than 250 MMBTU/hr]	0.2	0.3	0.9

[(2)] (1) On and after May 31, 1995, the owner or operator of [any] A STATIONARY source subject to this section shall:

(A) comply with all applicable emission limitations for such source in subsection (e) of this section;

(B) comply with the provisions for multi-fuel sources in subsection (f) of this section;

(C) reduce the NOx emission rate from such source by forty percent (40%), pursuant to subsection (g) of this section, in accordance with a permit issued by the Commissioner;

(D) [reconstruct the source, pursuant to subsection (h) of this section, in accordance with a permit issued by the Commissioner; or

(E)] FILE A PERMIT APPLICATION TO modify the schedule of operations at [the] SUCH source, pursuant to subsection (i) of this section, in accordance with a permit issued by the Commissioner.

(2) ON OCTOBER 1, 2003, AND DURING THE PERIOD FROM OCTOBER 1 THROUGH APRIL 30 EACH YEAR THEREAFTER, THE OWNER OR OPERATOR OF A STATIONARY SOURCE SUBJECT TO THIS SECTION THAT IS ALSO A NOx BUDGET PROGRAM SOURCE SHALL:

(A) COMPLY WITH THE EMISSION LIMITATION IN SUBSECTION (e)(3) OF THIS SECTION; OR

(B) USE NOX DERCs, OR NOX ALLOWANCES, OR BOTH, PURSUANT TO SUBSECTION (j) OF THIS SECTION, TO ACHIEVE ALL OR A PORTION OF THE NOX EMISSION REDUCTIONS REQUIRED BY THE EMISSION LIMITATION IN SUBSECTION (e)(3) OF THIS SECTION.

[(3) The owner or operator of a source subject to this section may apply in writing to the Commissioner for an extension to comply with subdivision (2) of this subsection. The Commissioner may grant such extension for a period not to exceed one (1) year, through a permit. Such permit shall meet the Administrator's requirements for "Phase-in of Controls Beyond May 1995" (Federal Register, Vol. 57, No. 228, Page 55623). The commissioner shall submit a permit or order providing for the use of NOx DERCs and NOx allowances to achieve all or a portion of the reductions required under this section, except the emission limitation in subsection (e)(3) of this section, to the Administrator for approval in accordance with the provision of 42 U.S.C. 7401-7671q.

[(4)] (3) The owner or operator OF A STATIONARY SOURCE SUBJECT TO THIS SECTION, in accordance with an order or permit issued by the Commissioner, may use [emission reduction trading] NOx DERCs AND NOx ALLOWANCES, pursuant to subsection (j) of this section, to achieve all or a portion of the reductions required by this section. The Commissioner shall submit such permit or order to the Administrator for approval in accordance with the provision of 42 U.S.C. 7401-7671q.

[(5)] (4) Nothing herein shall preclude the Commissioner from issuing an order to an owner or operator OF A STATIONARY SOURCE SUBJECT TO THIS SECTION to comply with the requirements of this subsection.

(e) Emission limitations.

(1) The owner or operator of a stationary source subject to this section may, in accordance with [subparagraph (A) of subdivision (d)(2)] SUBSECTION (d)(1)(A) of this section, comply with the requirements of this section by meeting applicable emission limitations specified in Table [22-2] 22-1 of this section. Emission limitations in Table [22-2] 22-1 for turbine engines that are quantified in units of ppmvd shall be corrected to fifteen percent (15%) oxygen.

(2) For any STATIONARY source for which there is no applicable emission limitation in Table [22-2] 22-1, the owner or operator of such source shall not cause or allow emissions of NOx therefrom in excess of the following:

(A) For fuel-burning equipment fired by a fuel other than those fuels cited in Table [22-2] 22-1: 0.3 pounds per MMBTU;

(B) For any waste combustor subject to the requirements of subdivision [(2)] (4) of this subsection: 0.38 pounds per MMBTU;

(C) For any waste combustor not subject to the requirements of [subparagraph (1)(B)] SUBDIVISION (2)(B) of this subsection which has a waterwall furnace: 0.38 pounds per MMBTU;

(D) For any other waste combustor: 0.33 pounds per MMBTU;

(E) For a glass melting furnace: 5.5 pounds of NOx per ton of glass produced;

(F) For a STATIONARY source, other than a glass melting furnace, [which burns] THAT COMBUSTS fuel for heating materials: 180 ppmvd, corrected to twelve percent (12%) carbon dioxide; or

(G) For any STATIONARY source not having an emission limitation in subparagraphs (A) through (F) of this subdivision: seven hundred (700) ppmvd.

(3) FOR A SOURCE SUBJECT TO THIS SECTION THAT IS ALSO A NOx BUDGET PROGRAM SOURCE: 0.15 POUNDS PER MMBTU DURING THE PERIOD FROM OCTOBER 1 THROUGH APRIL 30.

[(2)] (4) In addition to complying with the emission limitation in [subparagraph (1)(B)] SUBDIVISION (2)(B) of this subsection, by May 31, 1995 the owner or operator of any waste combustor [which] THAT combusts refuse derived fuel shall install and operate selective noncatalytic reduction or other NOx emissions control technology capable of reducing the NOx emission rate by at least thirty percent (30%) from the average emission rate in calendar year 1990 on one boiler unit at such facility. If the Commissioner determines that operations during 1990 were not representative of normal operations of the facility, the Commissioner may use another calendar period [which] THAT is more representative. In addition, actual annual average NOx emissions

from other boiler units at such facility shall each not exceed 420 tons per year. The Commissioner may consider, in the same manner as for other sources, any emission reduction below 0.38 pounds per MMBTU to be eligible as surplus emissions reductions for purposes of emission reduction credits pursuant to subsection (j) of this section until May 31, 1999.

TABLE [22-2] 22-1
[NOX EMISSION LIMITATION ON AND AFTER MAY 31, 1995]

	Gas-fired	**Residual-oil-fired**	**Other-oil-fired**	**Coal-fired**
Turbine engine with MRC ≥ 100 MMBTU/hr	55 ppmvd	not applicable	75 ppmvd	not applicable
Turbine engine with MRC < 100 MMBTU/hr	0.90 lb/MMBTU	not applicable	0.90 lb/MMBTU	not applicable
Cyclone furnace	0.43 lb/MMBTU	0.43 lb/MMBTU	0.43 lb/MMBTU	0.43 lb/MMBTU
Fast-response double-furnace Naval boiler	0.20 lb/MMBTU	0.30 lb/MMBTU	0.30 lb/MMBTU	0.30 lb/MMBTU
Fluidized bed combustor	not applicable	not applicable	not applicable	0.29 lb/MMBTU
Other boiler	0.20 lb/MMBTU	0.25 lb/MMBTU	0.20 lb/MMBTU	0.38 lb/MMBTU
Reciprocating engine	2.5 gm/bk hp-hr	not applicable	8 gm/bk hp-hr	not applicable

(f) Multi-fuel sources.

(1) When, pursuant to [subparagraph (B) of subdivision (d)(2)] SUBSECTION (d)(1)(B) of this section, the owner or operator of a STATIONARY source SUBJECT TO THIS SECTION switches the use of fuel, converts to a new fuel, or is capable of burning two or more different fuels, such owner or operator shall comply with the requirements of this subsection.

(2) The owner or operator of a STATIONARY source that is capable of firing two or more fuels shall not cause or allow emissions of NOx from such source, in excess of the following:

(A) For fuel-burning equipment that simultaneously fires two or more different fuels: an emission limitation calculated by 1) multiplying the heat input of each fuel combusted by the emission limitation established in this section for such fuel, 2) summing those products, and 3) dividing the sum by the total heat input; or

(B) For fuel-burning equipment that is capable of interchangeably firing two or more fuels: the emission limitation in Table [22-2] 22-1 for the particular equipment and fuel used. Notwithstanding this requirement, the owner or operator of a STATIONARY source that operates

exclusively on other oil or gas from May 1 through September 30 of any year and on another fuel during the remainder of the year shall not cause or allow emissions of NOx from such source in excess of 0.2 pounds per MMBTU from May 1 through September 30 and 0.29 pounds per MMBTU for the remainder of the year.

(3) The owner or operator of a STATIONARY source [which] THAT, on or after January 1, 1990, converts the fuel used at such source, shall not cause or allow emissions of NOx from such source in excess of the following:

(A) 0.29 pounds per MMBTU, when [the] SUCH source burned coal to provide more than fifty percent (50%) of its total heat input during the last full calendar year immediately prior to such conversion; or

(B) 0.225 pounds per MMBTU, if [the] SUCH source burned residual oil to provide more than fifty percent (50%) of its total heat input during the last full calendar year immediately prior to such conversion.

(g) Forty percent (40%) reduction.

(1) When the owner or operator of [any] A STATIONARY source SUBJECT TO THIS SECTION reduces the NOx emission rate from such source by forty percent (40%), as provided in [subparagraph (C) of subdivision (d)(2)] SUBSECTION (d)(1)(C) of this section, such owner or operator shall comply with the emission limitations of this section established in a permit issued by the Commissioner. Such permit shall specify such source's NOx emission limitation to be the more restrictive of:

(A) sixty percent (60%) of such source's emission rate at maximum capacity during calendar year 1990; or

(B) sixty percent (60%) of the emission limitation applicable to the source on January 1, 1990.

Such permit shall express the NOx emission limitation in the same units of measurement as the NOx emission limitation that would otherwise apply to such source in subsection (e) of this section.

(2) To determine the actual emission rate specified in [subparagraph] SUBDIVISION (1)(A) of this subsection, such owner or operator shall conduct an emission test at such source under operating conditions representative of those conditions in existence at the source in calendar year 1990, at the maximum capacity at which the source was operated during such calendar year.

(3) If the Commissioner determines that operations during calendar year 1990 were not representative of normal operations from such source, the Commissioner may use another calendar year which is more representative.

(h) Reconstruction or replacement. REPEALED.

[(1) If the owner or operator of a source proves, to the satisfaction of the Commissioner, that compliance with subsections (e) or (g) of this section is not technologically or economically feasible at such source, the Commissioner may allow the owner or operator, through a permit, to comply with this section by reconstructing the existing source, or replacing the existing source with a new source. Such reconstruction or replacement shall be completed no later than May 31, 1999.

(2) Such permit shall require that, prior to the completion of reconstruction or replacement of such source, the NOx emission rate from the existing source not exceed the more restrictive of:

(A) the emission limitation applicable to the source on January 1, 1990; or

(B) the emission limitation of any current permit or order issued by the Commissioner for such source.

(3) Such permit shall require the owner or operator, by May 31, 1995, to deposit into an escrow account an amount equal to $1,000 multiplied by the number of pounds per day of NOx emission reductions that would be needed by the existing source to achieve compliance with the emission limitations in subsection (e) of this section. The terms of such escrow account and escrow agent required by such permit shall be subject to the approval of the Commissioner. The Commissioner may require that such escrow account be established and properly insured against default at an institution authorized to operate in Connecticut by the State's Commissioner of Banking. In determining the acceptability of an escrow agent, the Commissioner shall consider the reliability and trustworthiness of the person acting as the escrow agent. The Commissioner shall also consider the escrow agent's ability to insure that any money deposited into such escrow account will be withdrawn upon written notification in accordance with such permit.

(4) After completion of such reconstruction or replacement, the owner or operator may, upon written notification by the Commissioner, withdraw funds from the escrow account in accordance with such permit described in subdivision (3) of this subsection. If the owner or operator fails to complete reconstruction or replacement by the date set forth in the permit, such owner or operator shall use such funds to acquire emission reduction credits upon written notice from the Commissioner.]

(i) Schedule modification.

(1) If the owner or operator of a STATIONARY source SUBJECT TO THIS SECTION proves to the satisfaction of the Commissioner that it is not technologically or economically feasible for such source to comply with the emission limitations in subsections (e) through (g) of this section, EXCEPT THE EMISSION LIMITATION IN SUBSECTION (e)(3) OF THIS SECTION, the Commissioner may by permit require NOx emission reductions through modifications of the schedule of

NOx-emitting activities and implementation of other measures to reduce NOx emissions at such source. Such permit may include restrictions on operations on any day for which the Commissioner has forecast that ozone levels will be "moderate to unhealthful," "unhealthful," or "very unhealthful."

(2) This subsection shall only apply to the following:

(A) Oil-fired turbine engines or fast-response double-furnace Naval boilers that generate power to create simulated high-altitude atmospheres for the testing of aircraft engines; [or]

(B) Testing of fuel-burning equipment undergoing research and development[.]; OR

(C) COMPRESSION-IGNITION RECIPROCATING ENGINES USED EXCLUSIVELY FOR THE TRAINING PERSONNEL IN THE OPERATION AND MAINTENANCE OF SUCH ENGINES ABOARD SUBMARINES.

(j) Emissions reduction trading.

(1) [When the] THE owner or operator of a STATIONARY source SUBJECT TO THIS SECTION [uses emission reduction trading] MAY USE NOx DERCs OR NOx ALLOWANCES OR BOTH to comply with THE APPLICABLE EMISSION LIMITATION CONTAINED IN SUBSECTION (e) OF this section[,]PURSUANT TO A PERMIT OR ORDER ISSUED BY THE COMMISSIONER. [such owner or operator shall achieve reductions in NOx emissions which, at a minimum, are equivalent to those emission reductions that would be achieved by complying with all applicable emission limitations in subsection (e) of this section. The Commissioner may allow the use of emission reduction trading through the issuance of a permit. Such permit shall require the owner or operator, by May 31, 1995, to perform emission trading or to deposit into an escrow account an amount equal to $2000 multiplied by the number of pounds per day of NOx emission reductions needed to achieve compliance with the emission limitations in subsection (e) of this section. Such order or permit also shall require the owner or operator to withdraw and use such funds to acquire ERCs upon written notice from the Commissioner. The terms of such escrow account and escrow agent required by such permit shall be subject to the approval of the Commissioner. The Commissioner shall require that such escrow account be established and properly insured against default at an institution authorized to operate in Connecticut by the State's Commissioner of Banking. In determining the acceptability of an escrow agent, the Commissioner shall consider the reliability and trustworthiness of the person acting as the escrow agent. The Commissioner shall also consider the escrow agent's ability to insure that any money deposited into such escrow account will be withdrawn upon written notification in accordance with such permit.]

(2) SUCH OWNER OR OPERATOR SHALL RETIRE ONE (1) NOx DERC OR ONE (1) NOx ALLOWANCE FOR EACH TON OF NOx EMITTED IN EXCESS OF THE APPLICABLE EMISSION LIMITATION IN SUBSECTION (e) OF THIS SECTION, AS CALCULATED PURSUANT TO A PERMIT OR ORDER ISSUED BY THE

COMMISSIONER. [In order to comply with subdivision (j)(1) of this subsection, such] SUCH owner or operator shall conduct an emission test or submit another method acceptable to the Commissioner to estimate the [NOx emission limitation shortfall] THE NUMBER OF TONS OF NOx EMITTED IN EXCESS OF SUCH APPLICABLE EMISSION LIMITATION. Such emission test shall be conducted under operating conditions [which] THAT demonstrate the maximum emission rate of such source. Such emission test shall be certified pursuant to subsection (k) of this section.

(3) Any creation or use of [ERCs] NOx DERCs OR NOx ALLOWANCES for the purpose of this subsection shall be consistent with the provisions of [the U.S. Environmental Protection Agency's "Economic Incentive Program Rules; Proposed Rules," published February 23, 1993 (Federal Register, Volume 58, Number 34),] 40 CFR 51, SUBPART U and the U.S. Environmental Protection Agency's "Emissions Trading Policy Statement," published December 4, 1986 (Federal Register, Volume 51, [Number 233] PAGE 43814). THE USE OF NOx ALLOWANCES PURSUANT TO THIS SUBSECTION SHALL ALSO BE CONSISTENT WITH THE PROVISIONS OF SECTION 22a-174-22a(f)(4) AND SECTION 22a-174-22b(i)(5) OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES.

(k) Emissions testing and monitoring.

(1) The owner or operator of [any] A STATIONARY source subject to an emission limitation under this section shall conduct an emission test to demonstrate compliance with this section no later than May 31, 1995. Any such owner or operator [which] THAT does not install or operate a continuous emissions monitor at such source shall also conduct emission tests at least once every five years. Compliance with the emission limitations of this section shall be determined based on the average of three (3) one-hour tests, each performed over a consecutive 60-minute period and performed in accordance with section 22a-174-5 of the [RCSA] REGULATIONS OF CONNECTICUT STATE AGENCIES. Any analysis of nitrogen content conducted as part of such emission testing shall be in accordance with Method D-3228 of the American Society for the Testing of Materials.

(2) The owner or operator shall demonstrate compliance with emission limitations of this section using sampling and analytical procedures approved under 40 CFR Part 60, Appendix A, or under procedures in subsection 22a-174-5(d) of the [RCSA] REGULATIONS OF CONNECTICUT STATE AGENCIES. Sampling shall be conducted when the source is at normal operating temperature and, unless allowed otherwise by the Commissioner in a permit or order, is operating at or above ninety percent (90%) of maximum rated capacity for a fuel-burning source or at or above ninety percent (90%) of design capacity for a waste combustor. Notwithstanding such requirement, any source which has operated in excess of one hundred percent (100%) of its maximum rated capacity at any time since January 1, 1990 shall be tested when the source is operating at or above ninety percent (90%) of its highest operating rate since January 1, 1990.

(3) On and after May 31, 1995, the owner or operator of any source that emitted more than one hundred (100) tons of NOx from a single stack during any calendar year beginning January 1, 1990, shall install, calibrate, maintain, operate, and certify a continuous emissions monitor for NOx for each such stack. The owner or operator shall notify the Commissioner in writing at least thirty (30) days prior to conducting any performance or quality assurance testing of any such monitor. Any such testing shall be conducted in accordance with a testing protocol approved by the Commissioner. Any continuous emission monitor for NOx shall be installed, calibrated and operated in accordance with the performance and quality assurance specifications contained in 40 CFR 60, Subpart A, Appendix B and Appendix F.

(4) [Unless otherwise specified by the Commissioner in a permit or order, the averaging times for the emission limitations in this section for a source that has, or is required to have, a continuous emissions monitor for NOx shall be twenty-four (24) hours, measured from midnight at the beginning of any day to midnight of the end of that day and shall include all periods of operation, including startup, shutdown, and malfunction.] UNLESS OTHERWISE SPECIFIED BY THE COMMISSIONER IN A PERMIT OR ORDER, THE AVERAGING TIMES FOR THE FOLLOWING EMISSION LIMITATIONS SHALL BE APPLICABLE TO A SOURCE THAT HAS OR IS REQUIRED TO HAVE A CONTINUOUS EMISSIONS MONITOR FOR NOX:

(A) FOR THE EMISSIONS LIMITATION IN SUBSECTION (e)(3), THE PERIOD FROM OCTOBER 1 THROUGH APRIL 30, INCLUDING ALL PERIODS OF OPERATION, INCLUDING STARTUP, SHUTDOWN, AND MALFUNCTION; AND

(B) FOR ANY OTHER EMISSION LIMITATION CONTAINED IN THIS SECTION, TWENTY-FOUR (24) HOURS, MEASURED FROM MIDNIGHT AT THE BEGINNING OF ANY DAY TO MIDNIGHT OF THE END OF THAT DAY, INCLUDING ALL PERIODS OF OPERATION, INCLUDING STARTUP, SHUTDOWN, AND MALFUNCTION.

[(5) The owner or operator of a source subject to this subsection may apply in writing to the Commissioner for an extension to comply with this subsection. The Commissioner may grant such extension for a period not to exceed one (1) year through a permit or order.]

(5) IF THE OWNER OR OPERATOR OF A SOURCE SUBJECT TO SUBDIVISION (1) OF THIS SUBSECTION DEMONSTRATES TO THE COMMISSIONER IN WRITING THAT (A) SUCH EMISSION TEST WOULD RESULT IN ACTUAL EMISSIONS GREATER THAN THOSE EMITTED DURING ANNUAL OPERATIONS OF THE SOURCE, OR (B) SUCH EMISSION TEST IS OTHERWISE ECONOMICALLY INFEASIBLE IN LIGHT OF ANY UNIQUE CHARACTERISTICS OF THE SOURCE OR ITS MANNER OF OPERATION, THE COMMISSIONER MAY REQUIRE SUCH OWNER OR OPERATOR TO DEMONSTRATE COMPLIANCE WITH THIS SECTION THROUGH ALTERNATE MEANS. SUCH ALTERNATE MEANS SHALL BE INCORPORATED INTO A PERMIT OR ORDER AND MAY PROVIDE FOR THE USE OF EMISSION REDUCTION TRADING, IN ACCORDANCE WITH THE PROVISIONS OF SUBSECTION (j) OF THIS SECTION. CALCULATIONS RESULTING IN A FRACTIONAL EMISSION REDUCTION CREDIT REQUIREMENTS SHALL BE ROUNDED UP TO THE NEXT WHOLE TON.

(l) Reporting and record keeping.

(1) The owner or operator of [any] A STATIONARY source subject to this section, shall keep the following records:

(A) For an emergency engine, daily records of operating hours of such engine, identifying the operating hours of emergency and non-emergency use;

(B) For any [premise] PREMISES for which [subdivision] SUBSECTIONS (b)(2) or (b)(3) of this section applies, records (e.g. fuel use, continuous emissions monitoring, operating hours) to determine whether the NOx emissions from such [premise] PREMISES on any day from May 1 through September 30, inclusive, are in excess of one hundred thirty-seven (137) pounds for [a premise] PREMISES located in a severe nonattainment area for ozone or two hundred seventy-four (274) pounds for [a premise] PREMISES located in a serious nonattainment area for ozone.

(C) Monthly and annual records (e.g. fuel use, continuous emissions monitoring, operating hours) to determine whether NOx emissions from such [premise] PREMISES in any calendar year are in excess of twenty-five (25) tons for [a premise] PREMISES located in a severe nonattainment area for ozone or fifty (50) tons for [a premise] PREMISES located in a serious nonattainment area for ozone;

(D) Records of all tune-ups, repairs, replacement of parts and other maintenance;

(E) Copies of all documents submitted to the Commissioner pursuant to this section;

(F) For any source required to install, calibrate, and operate a continuous emissions monitor for NOx under subdivision (k)(3), all charts, electronically stored data, and printed records produced by such continuous emissions monitor;

(G) Procedures for calculating NOx emission rates in (B) and (C) above;

(H) Records of the dates, times, and places of all emission testing required by this section, the persons performing the measurements, the testing methods used, the operating conditions at the time of testing, and the results of such testing;

(I) For any source required to install, calibrate, and operate a continuous emissions monitor for NOx under subdivision (k)(3) of this section, records of all performance evaluations, calibration checks and adjustments on such monitor; a record of maintenance procedures; and all data necessary to complete the quarterly reports required under subdivision (*l*)(4) of this section; and

(J) Any other records or reports required by an order or permit issued by the Commissioner pursuant to this section.

(2) Within thirty (30) days of the completion of emission tests conducted under the requirements of subdivision (k)(1) of this section, the owner or operator of such source shall submit a written report of the results of such testing to the Commissioner.

(3) Within sixty (60) days of the completion of certification tests conducted under the requirements of subdivision (k)(3) of this section, the owner or operator of such source shall submit a written report of the results of such testing to the Commissioner.

(4) The owner or operator of any source required to be equipped with a continuous emissions monitor for NOx under subdivision (k)(3) of this section shall submit to the Commissioner written quarterly reports of excess emissions and CEM malfunctions. Such reports shall be submitted to the Commissioner on or before January 30, April 30, July 30, and October 30 and shall include data for the three calendar month period ending the month before the due date of the report. For each period of excess emissions, such report shall include the date and time of commencement and completion of such period, the magnitude and suspected cause of the excess emissions and all actions taken to correct the excess emissions. For each malfunction of the CEM system, such report shall include the date and time of when the malfunction commenced and ended, and all actions taken to correct the malfunction.

(5) The owner or operator of [any] A STATIONARY source subject to this section shall retain all records and reports produced pursuant to the requirements of this section for five (5) years. Such records and reports shall be available for inspection at reasonable hours by the Commissioner or the Administrator. Such records and reports shall be retained at the source, unless the Commissioner approves in writing the use of another location in the State.

(6) On or before April 15 of each year, the owner or operator of [any] A STATIONARY source subject to this section shall submit a report on NOx emissions from such source, on a form provided by the Commissioner.

(7) The Commissioner may use data recorded by continuous emissions monitors for NOx and any other records and reports to determine compliance with applicable requirements of this section.

(m) Compliance plans.

(1) The owner or operator of [any] A STATIONARY source [that is] subject to this section shall submit a compliance plan to the Commissioner by September 1, 1994, on forms provided by the Commissioner. Such compliance plan shall document how [the] SUCH source will comply with all applicable requirements of this section. The owner or operator of [any] A STATIONARY source [which] THAT becomes subject to this section after May 1, 1994,

shall submit a compliance plan within four (4) months of the date on which [the] SUCH source becomes subject to this section.

(2) Any compliance plan submitted pursuant to this subsection shall include a certification signed by a responsible corporate officer or a duly authorized representative of such officer, as those terms are defined in subdivision 22a-430-3(b)(2) of the [RCSA] REGULATIONS OF CONNECTICUT STATE AGENCIES, and by the individual delegated by such officer with the responsibility of actually preparing the compliance plan. Such certification shall read as follows: "I have personally examined and am familiar with the information submitted in this [compliance plan] DOCUMENT and all attachments THERETO[.], AND I CERTIFY THAT [Based] BASED on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, [I certify that] the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in [this compliance plan or its attachments] THE SUBMITTED INFORMATION may be punishable as a criminal offense UNDER SECTION 22a-175 OF THE GENERAL STATUTES, UNDER SECTION 53a-157b OF THE GENERAL STATUTES, AND IN ACCORDANCE WITH ANY APPLICABLE STATUTE."

(3) If a compliance plan does not contain all measures necessary to comply with all requirements of this section, the Commissioner may notify the owner or operator of such source of the deficiency. Such owner or operator shall resubmit a revised compliance plan within thirty (30) days of receipt of such notice.

(4) NOTWITHSTANDING THE PROVISIONS OF SUBDIVISION (1) OF THIS SECTION, THE OWNER OR OPERATOR OF A NOx BUDGET PROGRAM SOURCE WHO IS SUBJECT TO A REVISED EMISSION STANDARD SHALL NOT BE REQUIRED TO SUBMIT A REVISED COMPLIANCE PLAN UNLESS THE COMMISSIONER REQUESTS SO IN WRITING.

STATEMENT OF PURPOSE: TO CONTROL EMISSONS OF NITROGEN OXIDES FROM POWER PLANTS AND OTHER LARGE SOURCES OF AIR POLLUTION IN ACCORDANCE WITH THE REQUIREMENTS OF EXECUTIVE ORDER NO. 19.

XI. Conclusion

Based upon the comments submitted by interested parties and addressed in this Hearing Report, we recommend the proposed final regulation, as contained herein, be submitted by the Commissioner of Environmental Protection for approval by the Attorney General and the Legislative Regulations Review Committee.

Carmine DiBattista
Hearing Officer

10/17/00
Date

Christopher James
Hearing Officer

17 Oct 2000
Date

Attachment 1 — List of Commentors

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