EXHIBIT E

HEARING REPORT

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

**Regarding Adoption of Section 22a-174-42 and
Amendment of Sections 22a-174-3b(e)(2), 22a-174-3a(a)(2)(B) and 22a-174-22(a)(4) of the
Regulations of Connecticut State Agencies**

Hearing Officer: Merrily A. Gere

Date of Hearing: April 7, 2004

On February 2, 2004, the Commissioner of the Department of Environmental Protection ("Commissioner" and "Department," respectively) signed a notice of intent to adopt section 22a-174-42 and amend sections 22a-174-3b(e)(2), 22a-174-3a(a)(2)(B) and 22a-174-22(a)(4) of the Regulations of Connecticut State Agencies ("R.C.S.A."). Pursuant to such notice, a public hearing was held on April 7, 2004, with the public comment period for the proposed adoption and amendment closing the same day.

I. Hearing Report Content

As required by section 4-168(d) of the Connecticut General Statutes ("C.G.S."), this report describes the adoption and amendment as proposed for hearing; the principal reasons in support of the Department's proposed adoption and amendment; the principal considerations presented in oral and written comments in opposition to the Department's proposed adoption and amendment; all comments made and responses thereto regarding the proposed adoption and amendment; and the final wording of the proposed adoption and amendment. Commenters are identified in Attachment 1.

This report also includes a statement in accordance with C.G.S. section 22a-6(h).

II. Federal Standards Analysis in Compliance with Section 22a-6(h) of the General Statutes

Pursuant to the provisions of C.G.S. section 22a-6(h) as amended by section 5 of Public Act 03-276,[1] the Commissioner is authorized to adopt regulations pertaining to activities for which the

1 Section 22a-6(h), as amended by section 5 of Public Act 03-276, states:

> The commissioner may adopt regulations pertaining to activities for which the federal

federal government has adopted standards or procedures. At the time of public notice, the Commissioner must distinguish clearly all provisions of a proposed regulation or amendment that differ from ***applicable*** federal standards or procedures (*i.e.*, federal standards and procedures that apply to ***the same persons*** under the proposed state regulation or amendment). The Commissioner must distinguish any such provisions either on the face of such proposed regulation or amendment or through supplemental documentation accompanying the proposed regulation or amendment. 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. and make such explanation publicly available at the time of the notice of public hearing required under C.G.S. section 4-168.

In accordance with the requirements of C.G.S. section 22a-6(h), at the time of public notice the following statement was entered into the public administrative record in the matter of the proposal to adopt R.C.S.A. section 22a-174-42 and amend R.C.S.A. sections 22a-174-3b(e)(2), 22a-174-3a(a)(2)(B) and 22a-174-22(a)(4):

The Department has performed a comparison of the proposed regulation adoption and amendment with applicable analogous federal provisions, namely the air quality regulations of the United States Environmental Protection Agency ("EPA"). Based on its review of these federal regulations, the Department has determined that the requirements of C.G.S. section 22a-6(h) do not apply to the proposed regulation adoption and amendment because there are no applicable analogous federal standards or procedures that apply to the persons potentially affected.

This proposed regulation adoption and amendment addresses the potential air quality impacts of smaller-scale electric system generating units distributed throughout an electrical system, referred to as "distributed generators." The proposed regulation adoption and amendment augments and updates existing air quality regulations to ensure that clean distributed generators become available in the future and to limit the adverse impacts from existing distributed generators. The proposed regulation adoption and amendment is composed of four sections. The proposed content of each section and the relationship of each section to any analogous federal standards and procedures are as follows:

Section 1 establishes a new section of the R.C.S.A., section 22a-174-42 ("Section 42"). Section 42 includes output-based standards for emissions of oxides of nitrogen, particulate matter,

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government has adopted standards or procedures. All provisions of such regulations which differ from the applicable federal standards or procedures shall be clearly distinguishable from such standards or procedures either on the face of the proposed regulation or through supplemental documentation accompanying the proposed regulation at the time of the notice concerning such regulation required under section 4-168. An explanation for all such provisions shall be included in the regulation-making record required under chapter 54 and shall be publicly available at the time of the notice concerning the regulation required under section 4-168. This subsection shall apply to any regulation for which a notice of intent to adopt is published on and after July 1, 1999.

carbon monoxide and carbon dioxide as well as fuel sulfur content requirements to control emissions of sulfur dioxide and, for new generators, a standard for ammonia emissions. The requirements restrict emissions to levels below the permit applicability thresholds for minor sources set forth in R.C.S.A. section 22a-174-3a ("Section 3a"). The federal government has not adopted distributed generator standards or procedures concerning the persons potentially affected by the adoption of Section 42.

Section 2 revises R.C.S.A. section 22a-174-3b ("Section 3b") to reduce the operating hours and fuel sulfur content requirements for emergency engines, consistent with the "Model Regulations for the Output of Emissions from Smaller-Scale Electric Generation Resources" issued by the Regulatory Assistance Project in 2002 ("RAP Model Rule")[2] and Section 42. The federal government has not adopted analogous standards or procedures applicable to the owners and operators of emergency generators. Section 3b is designed to limit the emissions to levels below the state's permit applicability threshold for minor sources. This revision further limits emissions from emergency engines.

Section 3 revises Section 3a to provide limited exemptions from the applicability requirements of that section for owners and operators of sources that are operated in compliance with Section 42. The federal government has not adopted similar requirements concerning the persons potentially affected by this revision to Section 3a but under certain circumstances requires the permitting of minor sources. Section 3a establishes the threshold for which a state minor source air pollution control permit is required at a level of 15 tons per year of potential emissions. The Section 3a revision recognizes that the operational restrictions of Section 42 restrict emissions to levels below this 15-ton minor source permitting threshold. Federal permit requirements under the federal prevention of significant deterioration and nonattainment new source review programs would still apply.

Section 4 revises the definition of "emergency" in R.C.S.A. section 22a-174-22 ("Section 22") to add a provision to address operation of an emergency generator when ISO New England, Inc. ("ISO-NE") has declared that there is a capacity deficiency of the New England electric system. Section 42 incorporates this same definition of "emergency." The federal government has not adopted similar requirements concerning the persons potentially affected by this revision.

III. Summary and Text of the Adoption and Amendment as Proposed

The regulatory changes made in this adoption and amendment are described in Section II of this report.

The text of the adoption and amendment as proposed is located in Attachment 2 to this report.

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2 This model rule development effort, completed in 2002, was a cooperative effort of state energy and environmental regulators, industry representatives, environmental advocates and federal officials. *See* www.raponline.org.

IV. Principal Reasons in Support of the Proposed Adoption and Amendment

The regulatory changes described in Section II address the potential air quality impacts of smaller-scale electric system generating units distributed throughout an electrical system, referred to as "distributed generators." The proposal augments and updates existing air quality regulations to ensure that clean distributed generators become available in the future and to limit the adverse impacts from existing distributed generators. Regulatory requirements applying to distributed generators are particularly important now because the number and use of such generators is anticipated to increase, particularly in southwest Connecticut where predicted electricity supply is insufficient to meet demand in summer months. The adoption of Section 42 includes the requirements necessary to control emissions from existing distributed generators; encourage technological improvement to reduce emissions from such generators; and regulate emissions from new distributed generators consistent with the Ozone Transport Commission recommendation in its March 28, 2001 "Resolution of the States of the Ozone Transport Commission Concerning the Creation of Incentives for Additional Clean Distributed Generation of Electric Power." The proposed amendments to existing regulations support the adoption of Section 42 and, in the case of the amendment to Section 3b(e)(2), revise requirements for emergency engines in a manner consistent with the regulation of distributed generators subject to Section 42.

V. Principal Considerations in Opposition to the Proposed Adoption and Amendment

Several comments opposed certain aspects of the proposal and suggested revision or the addition of provisions beyond those proposed. Such comments focused on the level of the proposed emissions standards and their technical feasibility and cost effectiveness; the proposal's effect on expansion of energy efficient and clean distributed generation in the state; the precise application of the certification compliance alternative; the availability of fuel for emergency generators meeting the proposed fuel sulfur limit; and the need for additional revision to the proposal to address the participation of emergency generators in the ISO-NE's Load Response Program.

All comments submitted are addressed in detail in Section VI of this report.

VI. Summary of Comments

All comments submitted are summarized below with the Department's responses. Comments are ordered by the regulation and subsection to which they apply. Commenters are identified by abbreviation in this section of this report and are identified fully in Attachment 1 to this report. When changes to the proposed text are indicated in response to comment, new text is in bold font and deleted text is in strikethrough font.

A. ADOPTION OF SECTION 42

General

1. Comment: Section 42 is proposed as a compliance alternative to individual source permitting under Section 3a for the owners and operators of certain distributed generators. To clarify that Section 42 functions as a compliance alternative, the Department should replace the use of the phrase "subject to" with "operating in accordance with" in each of the many places where the phrase is used in Section 42. (CBIA)

Response: The Department should replace the phrase "subject to" with the phrase "operating in accordance with" in the following subsections of Section 42: (d)(1), (d)(2), (d)(6), (d)(7), (d)(8), (e)(1), (f) and (g). For example, the implementation of this recommendation will revise subsections (d)(1) and (d)(2) as follows:

> (1) No owner or operator of any existing distributed generator ~~subject to~~ **operating in accordance with** this section shall cause or allow the emission of any air pollutant in excess of the emissions standards identified in Table 42-1 of this section.
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> (2) No owner or operator of any new distributed generator ~~subject to~~ **operating in accordance with** this section shall cause or allow the emission of any air pollutant in excess of the applicable emissions standards identified in Table 42-2 of this section. The applicable emissions standards are those standards in effect on the date that such generator is installed.

The other cited subsections will be revised in an identical fashion.

Subsection (a), definitions

2. Comment: In the definitions of "certifying entity," "supplier" and "system operator," the Department replace the phrase "a person" with "a person or entity." (EPA)

Response: The Department should make no change to the referenced definitions. The term "person" as applied in Section 42, is defined in R.C.S.A. section 22a-174-1 by reference to C.G.S. section 22a-170, to include businesses and other legal entities.

3. Comment: EPA suggests that the definition of "distributed generator" should be revised by deleting the phrase "for other than emergency use" since the definition allows for a distributed generator to generate some electricity for emergency use without being categorized as an emergency generator.

Response: The Department should make no change to the proposed definition in response to this comment since the proposed definition correctly categorizes a generator generating electricity for both emergency and non-emergency use as a distributed generator. The phrase referenced in the comment is necessary to specify that a generator may not generate electricity only for emergency use and be categorized as a distributed generator.

Subsection (b), applicability and exemptions

4. Comment: Subsections (b)(1)(D) and (b)(2)(D) provide equations to determine the allowable operating hours for distributed generators under the program. The intent of the equations is to ensure that distributed generators do not exceed the 15 ton per year potential emissions threshold of the regulation. The proposed method requires operators to use the carbon monoxide ("CO") emissions standards of subsection (d) to determine the hours of operation.

The above subsections should be revised to allow operators to use actual, demonstrated CO emissions rates in the calculation of allowable hours rather than the emission standard. The current proposal penalizes operators of distributed generators that actually emit lower CO emissions compared to the standard emissions limit. Furthermore, actual CO emissions from distributed generators may be considerably below the CO standard of 10 lbs/MWh of subsection (d). Consequently, the use of the CO emissions standards in the annual operation hours calculation may significantly underestimate the hours that a facility can operate and not exceed the 15 tons/year standard. (EMA)

Response: The Department should not revise Section 42 in response to this comment. To conform to the Department's requirements for minor source permitting in Section 3a, the requirements of Section 42 must limit its application to distributed generators with potential emissions of any air pollutant of 15 tons or more per year that may be operated to maintain actual emissions below 15 tons per year. The calculation in subsections (b)(1)(D) and (b)(2)(D) that determines the annual allowed operating hours has an environmental benefit margin built-in to ensure that the number of hours of operation will result in actual emissions below 15 tons per year for each regulated pollutant. CO was chosen as the determinant of operating hours because it was always the limiting pollutant when compared with the hours determined by nitrogen oxides ("NOx") and particulate matter ("PM"). Therefore, the use of CO to determine allowed operating hours maintained the actual emissions of NOx, PM and CO to levels less than 15 tons per year. If actual generator CO emissions were used, the consistent relationship among the proposed emissions standards, the determined operating hours and the actual emissions would be lost; the operating hours determined for any single generator could be such that an emissions limit for a pollutant other than CO is exceeded. Maintaining the proposed operating hour calculation also maintains the environmental benefit margin.

General regulatory requirements applicable to a range of sources are designed to address the needs of the group, not individual sources. If an owner or operator believes that the requirements of Section 42 are not suitable to the operating needs of a particular generator, then the owner or operator may apply for a permit under Section 3a and receive the individual consideration offered by that process.

Subsection (d), emissions requirements

5. Comment: The proposed emissions standards are too strict for most generators. (NECA, Blue Sky, CBIA, PJA) Specific comments include the following:

- NECA predicts that finalizing Section 42 with the proposed standards will result in the Department experiencing an increased workload from processing applications for individual permits under Section 3a.

- PJA believes that Section 42 sets standards that are so high they will discourage market entry and prevent market development.

- NECA realizes that under the proposed regulations an applicant has the option of obtaining an individual permit in lieu of the certification based on meeting the proposed emissions limits. However, the mere promulgation of a regulation listing the emissions standards will taint the best available control technology ("BACT") process required for an individual permit. Thus, while NECA is in favor of fuel neutral, output-based performance standards, such standards are not possible due to the inherent limitations of technology, which are reflected in the BACT-analysis process. In reality, the need for electric reliability and fuel diversification overrules the need for setting the extremely low emissions limits currently proposed by the Department.

Response: The Department should not revise Section 42 in response to these comments. In order of the comments above, the responses are as follows:

- The Department anticipates that it will be able to address any resulting increase in individual permit applications with existing staff.

- The cost of regulatory compliance alone is unlikely to stifle market development given the incentives for an increase in electricity production from distributed generators and the large number of other factors that affect the electricity market. Strict standards for NOx and other ozone precursors are necessary and appropriate given the state's nonattainment status for the ozone national ambient air quality standards. The Department has already limited emissions from large electric generators and other major stationary sources and must turn to other source categories, such as distributed generators, to reduce ozone precursor emissions and attain the national ambient air quality standards for ozone.

  Furthermore, while the Department understands that the proposed standards demand technological improvement, generators are available now that are capable of meeting the proposed 2008 NOx standards for new distributed generators. RAP Model Rule development focused on this issue and, therefore, involved an extensive review of available distributed generator technologies and standards applied by other regulatory agencies,[3] including information available from the U.S. Department of Energy and the California Air Resources Board ("CARB"). An increase in the number of generators capable of operation in compliance with Section 42's standards is likely,[4] resulting in part

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3 *See* Appendix B of the RAP Model Rule Supporting Documentation.

4 A recent report produced by DE Solutions, Inc. examined the performance, cost and timing of ultra-low emissions CHP technologies including natural gas fueled gas turbines, reciprocating engines and microturbines 75 kW to 10 MW. All the technologies considered in that report would meet the proposed initial 0.6 lb/MWh NOx standard, even without CHP credit. With the CHP credit, all the technologies except for 5 MW lean burn reciprocating engines with SCR also meet the 0.3 lb/MWh. (at 30.) That report indicates that lean burn reciprocating engines manufacturers face the biggest challenge to meet the 2008 NOx limit. *Clean Distributed Generation Performance and Cost Analysis*, DE Solutions, Inc. for Oak Ridge National Laboratory and the U.S. Department of

from the incentive created by Section 42 and similar state regulations based on the RAP Model Rule under development in Massachusetts, Maine, Rhode Island and Delaware. The three-step phase-in of the NOx standards in the RAP Model Rule was also developed to address the technological challenges of distributed generator manufacturers and provides specific emission levels and time goals to focus technological improvement. Finally, technology-forcing standards in other source sectors have been achieved at a lower cost than initially anticipated. The same may hold true for distributed generators.[5]

- By encouraging investment in alternative sources of fuel, Section 42 enhances fuel diversity. As noted in the comment, Section 42 is a compliance alternative to obtaining an individual permit. It should only be available to the owners and operators of sources able to comply with its requirements. Owners and operators choosing to operate generators in a manner that does not limit actual emissions below 15 tons per year will need to be prepared to allocate the time and money necessary to obtain an individual permit.

Finally, the level of the proposed standards received detailed consideration in both the RAP Model Rule development and the development of Section 42; the standards were developed to strike a balance among the need for air quality maintenance and improvement, electric supply considerations and emissions from current and developing distributed generator technology and control equipment. The basis for each standard is explained more fully in the responses to comments following in this report and in the technical support document for the RAP Model Rule.

6. Comment: Information in two recent reports concerning small generators in the Northeast[6,7] indicates that the emissions concerns in Connecticut from distributed generation are not significant at this time and are likely to remain small and that increased deployment of distributed generators can actually have a positive impact on emissions of criteria pollutants by eliminating the need for reserves and displacing higher emitting oil and gas fired central power plants. Given these facts, there is no justification for the state to adopt the emissions standards proposed in Section 42. Because the proposed Section 42 emissions standards would make distributed generators much more expensive to operate due to the need to add aftertreatment to all systems, the ultimate outcome of Section 42 will be to discourage the further deployment of new distributed generators that the above two reports indicate would have a positive effect on air quality. (EMA)

Response: The Department should not revise Section 42 in response to this comment.

Energy (April 2004).

5 RAP Model Rule Supporting Documentation (October 2002) at 31.

6 G. Keith and B. Biewald. 2003. *Results of Demand Response Emissions Modeling,* Synapse Energy Economics, Inc. June 18, 2003. At the Executive Summary.

7 Northeast States for Coordinated Air Use Management. 2003. *Stationary Diesel Engines in the Northeast: An Initial Assessment of the Regional Population, Control Technology Options, and Air Quality Policy Issues.* NESCAUM. Boston, MA.

While distributed generation now accounts for a small percent of overall emissions from electric generation, that percentage is likely to increase as demand increases, particularly in transmission constrained areas like southwest Connecticut where predicted electricity supply is insufficient to meet demand in summer months.[8] Furthermore, the emissions from the current population of distributed generators creates air quality concerns not due only to the quantity but to the timing and location of emissions. Operation of distributed generators is highest during May through September to supplement electricity supplies that are insufficient to meet demand. These months are also the "ozone season" when Connecticut is most likely to experience days with unhealthy air quality from exceedances of the 8-hour for ozone.[9] The particular days on which the ozone exceedances occur are often the hottest and therefore correspond to the highest electric demand days and heaviest operation of distributed generators. Compounding the air quality effects of the timing of distributed generator emissions is the location in urban areas from low smoke stacks, resulting in little dispersion.

See also the response to Comment 17 for additional explanation concerning the need for restrictions of NOx emissions from distributed generators in Connecticut.

7. Comment: Section 42 does not recognize the environmental differences between systems that operate frequently and those that only run occasionally. Cleaner systems should be encouraged to operate more frequently than dirtier systems. (NECA)

Response: The Department should not revise Section 42 in response to this comment. A general premise of Section 42 is that lower emitting generators will be able to operate for more hours than higher emitting generators. This concept is incorporated into the operating hour calculation that is one of the applicability requirements of subsection (b).

8. Comment: While the standards are proposed as "technology forcing," Connecticut is too small a market to force technology. (CBIA)

Response: The Department recognizes that Connecticut alone represents a small percent of the national distributed generator market. However, similar regulatory requirements are under development in a number of states in the Northeast region and elsewhere. Massachusetts, Rhode Island, Delaware and Maine are all developing regulations that rely significantly on the RAP Model Rule that may become effective as early as 2005. Vermont is considering initiating the regulatory development process for a regulation based on the RAP Model Rule. California and Texas have regulatory requirements that address distributed generation. Together, several states with distributed generator regulations will account for a market share sufficient to encourage manufacturers to develop additional, clean generation technologies.

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8 Regarding EMA's assertion that "emissions concerns in Connecticut from distributed generation are not significant at this time and are likely to remain small," the cited NESCAUM report indicates that increased reliance on distributed generation could grow if demand response programs are expanded and/or if large electric customers are exposed to real-time spot market prices. (at ES7.)

9 For example, in 2002, the Department recorded 36 days in the ozone season when ambient ozone levels exceeded the 8-hour national ambient air quality standard.

In addition to market share, Connecticut's high electricity prices combined with high congestion charges and value added by operation during peak demand periods will create an additional incentive for clean distributed generator development.

9. Comment: The proposed standards appear to be unachievable for any diesel reciprocating engine. Is the Department intending to prevent such engines from operating? (CBIA)

Response: Section 42 is a standardized exemption from the duty to obtain an individual permit under Section 3a for the owners and operators of distributed generators that are able to operate in compliance with its requirements. As such, Section 42 does not prevent the operation of any particular generator type. An owner or operator of a particular generator that cannot be operated or that the owner or operator does not choose to operate in compliance with Section 42's requirements may seek authorization to operate by applying for and obtaining an individual permit under Section 3a.

10. Comment: The Department should develop new fuel-specific standards for all fuels except natural gas, to which the first phase standards proposed for existing generators should apply. (NECA, Blue Sky)

Response: The Department should not revise Section 42 in response to this comment. The Department proposed technology-neutral standards based on those of the RAP Model Rule to allow owners and operators the flexibility to comply with the requirements of Section 42 using any engine technology, emissions control technology or operating practice, alone or in combination. The standards were finalized only after detailed consideration of the emissions resulting from a broad range of generator and control technologies. Furthermore, to a limited extent, Section 42 does recognize certain generator technologies by providing owners and operators of certain generators the option of obtaining credit against the emissions standards (*see* Section 42(f)).

11. Comment: NECA, PJA and Blue Sky recommend the Department immediately work to develop a market-based system based on the New Hampshire emissions fee system to replace the proposed emissions standards. Under such a system, distributed generators that exceed a certain annual emissions threshold would be subject to an emissions fee. The fee would not be required for generators that operate during periods of emergency, including periods when ISO-NE has implemented Action 12 and higher actions under NEPOOL Operating Procedure 4, "Action During a Capacity Deficiency" ("OP 4"). Generators with NOx emissions below five tons per year should also be exempt. Although New Hampshire exempts existing sources from this program for seven years, NECA recommends that existing sources be allowed to participate in such an emissions fee system in lieu of the proposed standards for existing generators.

NECA notes that charges under the New Hampshire emissions fee system range from $400 to $800 per ton of NOx emissions, depending on whether the emissions occur during the summer ozone season, and are scheduled to increase to $500 to $1,000 per ton, in 2006.

PJA adds that such a fee system could be implemented with relatively low administrative costs for the participants and the state and that a fee system would produce better results in the long term than those resulting from the proposed standards.

Response: The Department should not revise Section 42 in response to this comment. The Department does not currently have the statutory authority to adopt and implement such a fee system.

Carbon dioxide emission limits

12. Comment: The proposed regulation of carbon dioxide ("CO_2") contradicts the Department's existing regulations, which provide that CO_2 is a regulated "air pollutant" only in certain contexts not relevant to this rulemaking. In R.C.S.A. section 22a-174-1(5), the Department defines the term "air pollutant" to exclude CO_2 "except in accordance with regulations adopted pursuant to [C.G.S.] section 22a-174d or 22a-174j." The cited statutes refer to large-scale generator performance standards not relevant to the proposed rulemaking. (CBIA, ICPA)

CBIA adds that the inclusion of CO_2 emissions limits in Section 42 creates confusion concerning the applicability requirements of subsection (b), which refers to the sources with potential emissions of 15 tons or more per year of "an individual air pollutant." Is an individual air pollutant inclusive of CO_2? If so, it may expand the universe of sources potential subject to Section 42, since the CO_2 emissions from some sources are orders of magnitude higher than those of other regulated pollutants. In addition, the formula in Section 42(b)(1)(D) will not keep emissions of CO_2 below 15 tons per year.

Response: The Department has existing authority to regulate CO_2 emissions under the broad definition of "air pollution" in C.G.S. section 22a-170. The definition of "air pollutant" adopted in R.C.S.A. section 22a-174-1 is a narrower regulatory interpretation appropriate for most regulatory circumstances, but the broader authority in statute exceeds this regulatory definition.

Regarding the use of the phrase "individual air pollutant" in Section 42(b), the term is not defined in Section 42 and thus is defined as provided in R.C.S.A. section 22a-174-1. However, the use of the terms "air pollutant" and "emissions standards" in subsections (d)(1) and (d)(2), which are defined as in R.C.S.A. section 22a-174-1, is confusing given the proposed limit for CO_2 emissions in Tables 42-1 and 42-2. To clarify the use of the terms "air pollutant" and "emissions standards" in relation to the proposed regulation of CO_2 emissions, subsections (d)(1) and (d)(2) and Tables 42-1 and 42-2 should be revised as follows:

> (1) No owner or operator of any existing distributed generator subject to this section shall**:**
>
> **(A)** Cause or allow the emission of any air pollutant in excess of the emissions standards identified in Table 42-1 of this section**; and**
>
> **(B) Cause or allow the release of carbon dioxide into the ambient air from**

a stack in excess of 1900 lbs/MWh.

(2) No owner or operator of any new distributed generator subject to this section shall:

(A) Cause or allow the emission of any air pollutant in excess of the applicable emissions standards identified in Table 42-2 of this section. The applicable emissions standards are those standards in effect on the date that such generator is installed**; and**

(B) Cause or allow the release of carbon dioxide into the ambient air from a stack in excess of:

(i) 1900 lbs/MWh, if such generator is installed on or before April 30, 2012, or

(ii) 1650 lbs/MWh, if such generator is installed on or after May 1, 2012.

Table 42-1. Emissions standards for an existing distributed generator.

Oxides of nitrogen (lbs/MWh)	Particulate matter (lbs/MWh)	Carbon monoxide (lbs/MWh)	~~Carbon dioxide (lbs/MWh)~~
4.0	0.7	10	~~1,900~~

Table 42-2. Emissions standards for a new distributed generator.

Date of installation	Oxides of nitrogen (lbs/MWh)	Particulate matter (lbs/MWh)	Ammonia (ppm)	Carbon monoxide (lbs/MWh)	~~Carbon dioxide (lbs/MWh)~~
On or after January 1, 2005	0.6	0.7	2.0	10	~~1,900~~
On or after May 1, 2008	0.3	0.07	2.0	2	~~1,900~~
On or after May 1, 2012	0.15	0.03	2.0	1	~~1,650~~

The revision of subsections (d) and (e) included in the response to Comment 26 also includes minor revisions to clarify internal references to the standards.

13. Comment: The basis for the proposed CO_2 limit (1,900 lbs/MWh, phased down to 1650 lbs/MWh for new units beginning 2012) is unclear. In the absence of concerted international efforts, any emissions standard selected for distributed generation units would seem to have no

measurable impact with respect to global warming. This standard would also further discourage parties from utilizing Section 42 as an alternative to obtaining an individual permit, and thereby provide no administrative or other benefits from this proposed permit-by-rule. (ICPA)

Response: The Department should make no revision to Section 42 in response to this comment. Regarding the basis for the proposed standards, the standards are those of the RAP Model Rule, which were developed after a review of emissions from existing generators. The RAP Model Rule development process recognized that CO_2 production is a function of generator efficiency. Certain currently available turbines and reciprocating engines can meet the first and second phase CO_2 limit of 1900 lbs/MWh. The third phase of 1650 lbs/MWh assumes an efficiency among gas-fired technologies of at least 24% and will require improvements in some small turbine models. Since increases in efficiency reduce an operator's fuel costs, it is reasonable to expect the needed improvements will be largely market-driven.[10]

Reduction of carbon dioxide emissions from stationary sources is consistent with the recommendations made in a January 2004 final report of the Connecticut Climate Change Stakeholder Dialog to the Governor's Steering Committee on Climate Change, including promulgation of measures that increase the use of combined heat and power ("CHP") systems and that increase electricity generation by clean and "green" sources of electricity. The Department anticipates that a number of owners and operators will choose to operate under Section 42 in lieu of obtaining an individual permit, and Section 42 will thereby provide a beneficial alternative to individual permitting. Section 42, in conjunction with state regulations regulating emissions from distributed generators that are undergoing the adoption process in surrounding states, will encourage manufacturers of distributed generators and add-on controls to produce equipment capable of meeting the desired emissions characteristics.

14. Comment: For the first time, the Department is proposing to control CO_2 emissions from stationary sources. While NUSCO has supported climate change actions in the past, they have all been subject to a larger, overall plan. With the recent Climate Change Action Plan approved by Governor Rowland, NUSCO would like to know how Section 42 figures into the overall strategy of the State's climate change plans. We are concerned that significant changes adopted in piecemeal fashion could significantly disrupt the reliability of the transmission and distribution system. We would appreciate the Department's articulation of its larger plan. (NUSCO)

Response: The overall state climate change strategy is under development. The Governor's Steering Committee on Climate Change is preparing a climate change action plan for the state that will include recommended goals and actions to reduce emissions of greenhouse gases. That plan will rely on the recommendations made in a January 2004 final report of the Connecticut Climate Change Stakeholder Dialog; the reduction of CO_2 emissions proposed in Section 42 is consistent with the January 2004 recommendations. In addition, legislation adopted in the 2004 legislative session -- Public Act No. 04-252, An Act Concerning Climate Change -- will affect the timing and type of greenhouse gas reduction measures implemented. After adoption, Section

10 RAP Model Rule Supporting Documentation at 30.

42's CO_2 provisions will, if necessary, be amended in response to new information and changed circumstances to best protect the environment and public health.

15. Comment: The Department should delete the CO_2 standard from the regulation. Given the need to meet the other strict emissions standards of the proposed regulation, there is no way for engine or generator manufacturers to alter the inherent CO_2 emissions from a specific generator set. Considering that the priority to control emissions is properly placed on minimizing emissions of criteria pollutants, such as NOx, CO and PM, and that CO_2 emissions from stationary engines are minimal, there is little to be gained by adding additional constraints that only make compliance with the primary emissions standards more difficult. (EMA)

Response: The Department should not revise Section 42 in response to this comment. The proposed CO_2 standards will result in climate change benefits in support of the state's developing climate change action plan. *See* the response to Comment 14.

The multi-pollutant approach of Section 42 takes into account the relationships among the various substances regulated and the factors affecting their production such as combustion characteristics and generator efficiency. For example, significant reductions in NOx have been achieved through changes in combustion practices in reciprocating generators and turbines, but some thermal efficiency is sacrificed in so doing, which increases CO_2 output. The three-step phase-in of the standards recognizes these challenges and provides time and incentive for manufacturers of distributed generators and add-on controls to produce equipment that responds to such standards. *See also* the response to Comment 13.

16. Comment: Connecticut is too small a market to affect production decisions by equipment manufacturers, who may not be focused on the need to meet CO_2 standards. Therefore, regulatory measures designed to force technology in this area must be taken on a federal, or at least, a multi-state level. (CBIA)

Response: Connecticut in combination with other states with regulations requiring CO_2 standards for distributed generators based on the RAP Model Rule will represent a market share sufficient to influence manufacturing production decisions. *See also* the response to Comment 8.

NOx emission limits

17. Comment: The proposed NOx standards are too strict and will require all generators to be equipped with expensive NOx aftertreatment control equipment, even clean-burning natural gas units. (EMA) EMA recommends that the Department replace the proposed NOx standards for new generators with the following standards: 2.2 lbs/MWh as of May 2005; 1.0 lbs/MWh as of May 2008 and 0.3 lbs/MWh as of May 2012. Specifically, EMA notes:

- Compliance with the proposed NOx emissions levels may not be technically and economically feasible for internal combustion engines. The net effect of the proposed standards will be to eliminate natural gas engines, the predominant technology for distributed generation and CHP units from the distributed generator market in Connecticut.

- If the Department adopts the standards as proposed, we expect that no cost effective distributed generators will be certified in Connecticut, thus rendering the entire regulation and streamlining program moot. California offers an example of the effect of strict NOx standards on the distributed generator market; only four generator models have been certified by the CARB to meet California's NOx emissions standards. The Section 42 NOx standards will make the installation of distributed generators in the state infeasible from an economic standpoint, thereby curtailing any market growth prospects for distributed generators.

Response: The Department should not revise the proposed NOx standards in response to this comment.

It is crucial that Section 42's requirements, including the NOx emissions standards, be understood within the context of Connecticut's permitting program for sources of air pollution. Section 42 is not a series of mandatory requirements that apply to the owners and operators of all the distributed generators in the state. Section 42 is an optional "permit-by-rule" that provides a standardized exemption from the duty to obtain an individual permit pursuant to Section 3a -- for the owners and operators of distributed generators that are able to operate in compliance with its requirements. Section 42 applies to a generator that has potential emissions of any air pollutant greater than 15 tons per year and is thereby above the permit applicability threshold for minor sources set forth in Section 3a. By limiting a generator's actual emissions to less than 15 tons per year, the requirements of Section 42 ensure that the generator's impacts are not significant enough to merit the detailed individual permit review process. If a generator cannot be so operated, the review required in the individual permit process is necessary to address the Department's air quality goals and policies. However, for the owners and operators of generators that may operate in compliance with Section 42, it offers administrative simplicity and cost savings over obtaining an individual permit. In this context, EMA's concern that the standards are not suitable for all generator types is meaningless; Section 42's requirements are intended to only apply to a subset of distributed generators.

Furthermore, regarding EMA's two specific comments:

- The proposed standards are technically achievable. The proposed standards were developed with input from distributed generator manufacturers, in light of the emissions profiles of current distributed generator technologies and industry expectations for improvement over the next decade.

- Despite EMA's assertion concerning California's distributed generator requirements, CARB gives no indication of plans to make its required NOx standards for distributed generators less stringent. To the contrary, as of June 4, 2004, California's South Coast Air Quality Management District will require all distributed generator sources equal to or greater than 1.5 MW, except those fueled by digester or landfill gas, to meet a NOx BACT standard of 0.07 lb/MWhr.

18. Comment: Two comments were submitted addressing the use of selective catalytic reduction ("SCR") to control NOx emissions:

- The NOx limits for new distributed generators beginning in 2005 are likely only attainable with NOx controls, such as SCR. (CBIA)

- SCR technology is most cost effective when used on large engines that operate frequently. Less expensive controls provide more modest reductions. Thus, there are no cost effective controls available that will lower NOx emissions from smaller scale diesel engines or engines that operate frequently. The use of SCR does not guarantee that the proposed emissions limits will be met. (NECA)

Response: The Department should make no change to Section 42 in response to these comments.

As explained in the response to Comment 17, Section 42 is an optional compliance alternative to obtaining an individual permit under Section 3a for the owner or operator of a distributed generator with potential emissions greater than 15 tons per year of an air pollutant. The owner or operator of a generator that can achieve the emissions limitations with add-on control equipment will need to make a business decision, evaluating the cost of adding and maintaining such control equipment against the alternative of not adding such control equipment and incurring the costs and time to obtain an individual permit.

Ammonia emission limit

19. Comment: Commenters express several concerns related to the proposed ammonia limit for new distributed generators:

- Distributed generators will not be able to comply with the proposed 2 ppm limit, particularly those generators that use SCR to control NOx emissions, because there is no effective way to control ammonia "slip" from SCR to a 2 ppm level (EMA, CBIA, Solar). CBIA submitted emissions data to support this concern;

- Any SCR technology able to meet the proposed standard will add extra costs to an already very expensive control system when used on small generators (EMA);

- The priority to control emissions is properly placed on minimizing emissions of criteria pollutants, such as NOx, CO and PM, and, since ammonia emissions from stationary engines are minimal, there is little to be gained by adding additional constraints that only make compliance with the primary emissions standards more difficult (EMA); and

- A workgroup of the Bureau of Air Management's State Implementation Plan Revision Advisory Committee ("SIPRAC") should have the opportunity to discuss the proposed ammonia limit (NUSCO).

As a result of the expressed concerns, commenters recommend that the Department either delete the proposed standard or revise the proposed standard to a level no lower than 10 ppm. (Solar, EMA) Such a 10 ppm standard is supported by case studies and is considered BACT for small-scale generators by the South Coast Air Quality Management District in California. (EMA)

Response: The Department should delete the proposed ammonia standard for new generators in Table 42-2. After the conclusion of the Section 42 SIPRAC subcommittee process, the Department became aware that the state of Massachusetts planned to propose a 2.0 ppm ammonia standard for new turbines with a rated power output between 1 and 10 MW. (*See* proposed amendments to 310 CMR 7.00 and 310 CMR 70.00, May 2004.) The Department included an ammonia standard consistent with that proposed in Massachusetts to receive comment to assist the Department in evaluating the impacts associated with such a standard. Given the comment received and the lack of alternative information to support the finalization of such a standard at this time, the Department should delete the proposed standard and consider the addition of such a standard at a later date.

In the final version of Section 42, Table 42-2 should be revised as follows:

Table 42-2. Emissions standards for a new distributed generator.

Date of installation	Oxides of nitrogen (lbs/MWh)	Particulate matter (lbs/MWh)	~~Ammonia (ppm)~~	Carbon monoxide (lbs/MWh)	Carbon dioxide (lbs/MWh)
On or after January 1, 2005	0.6	0.7	~~2.0~~	10	1,900
On or after May 1, 2008	0.3	0.07	~~2.0~~	2	1,900
On or after May 1, 2012	0.15	0.03	~~2.0~~	1	1,650

Particulate matter emission limits

20. Comment: The particulate matter standards for new generators built after May 1, 2008 appear to be unachievable for oil and gas combustion turbines. Does section 22a-174-42(d)(3) indicate that the particulate matter standards do not apply to any combustion turbines? Are dual-fueled generators subject to the particulate matter standards when they burn oil? (CBIA)

Response: Subsection (d)(3) clearly states that the particulate matter standards for both new and existing distributed generators "only apply to a distributed generator with a reciprocating engine using liquid fuel." Dual-fuel generators are exempt from the particulate matter and all other emissions standards when they burn a liquid fuel. To clarify that during the period of time fueled by liquid fuel, the owner or operator of a dual-fuel generator must limit operation to a maximum of thirty days per year and use low-sulfur fuel complying with subsection (g) of Section 42, subsection (d)(4) should be revised as follows:

(4) The owner or operator of any distributed generator that is a dual-fuel generator

shall:

(A) When such generator is fueled by a gaseous fuel, operate such generator in compliance with all applicable requirements of this section; and

(B) When such generator is fueled by a liquid fuel:

(i) Be exempt from compliance with the requirements of subsections (d)(1) and (d)(2) of this section,

~~(i)~~**(ii)** Operate no more than a total of thirty (30) days per year, and

~~(ii)~~**(iii)** Use a fuel that complies with subsection (g) of this section.

Review of Emissions Limits

21. Comment: NUSCO and CBIA support the addition of a requirement for the Department to evaluate the availability of control equipment and generator technologies necessary for compliance with the proposed emissions standards. Such a review process was included in a previous draft of Section 42 and subject to review by the SIPRAC subcommittee. That subdivision directed the Department to evaluate emissions control technology developments, and by the end of 2010, determine if the third phase of emissions limitations, scheduled for implementation in 2012, could be met. CBIA recommends that such a Department review process should occur prior to May 2008 and May 2012. CBIA adds that if the proposed standards are not achievable at those target dates, Section 42 should specify that the Department may defer compliance with such standards.

Response: The Department should not add the review process recommended in the comment. The Department has all authority necessary to engage in such a review process and should follow developments in control technologies for distributed engines and consider the need to revise the proposed standards in light of new emerging control technologies.

Subsection (e), certification

22. Comment: EMA makes the following assertions with regard to the certification requirements:

- There is insufficient time to complete the required testing in order to meet the proposed certification requirements. If the standards were effective today and manufacturers were to start testing immediately, it would take until February 2005 to test a generator for 15,000 hours of operation. Since the normal practice of most manufacturers is to certify or warrant their products for one year, there would essentially be no certified generators available for installation in the state until after mid 2006. (EMA)

- The proposed emissions standards would require the use of aftertreatment devices to meet emissions limits, and engine and generator manufacturers must rely on the warranty conditions of the emissions control aftertreatment systems. Currently, these

manufacturers do not warrant their products for such a long time period. Generator manufacturers cannot certify that the emissions would meet the requirements of the proposed regulation when the manufacturers of the requisite emission control equipment are not likely to provide such a warranty. (EMA)

- As an alternative to certification, the Department should require the operator to maintain the generator and any emissions control equipment so that the proposed emission limits are met. (EMA)

- If any certification period is to be included in the final Section 42 regulation it should be reduced to a time period corresponding to current industry practice of offering a one year warranty. (EMA)

Response: The Department should not revise subsection (e) in response to EMA's comments. Taking each comment in the order presented, the Department responds as follows:

- Certification does not require that a generator manufacturer test each generator for the prescribed time period prior to issuing a certification. Rather, a manufacturer issues a certification for a generator model line by testing a sample of the generators of sufficient size to assure with a high probability that all generators of that make and model would perform as certified. Testing would not require operating a generator for three years or 15,000 hours. On the basis of more limited testing for shorter time periods, appropriate failure rates can be calculated for the required time period.

- The comment would apply to a distributed generation system designed and marketed as a package of prime mover, generator and emissions control equipment. No such systems are currently available. Given equipment now available, a generator manufacturer would not need to rely on the warranty of an add-on emissions control device manufacturer. A generator certification would apply to a generator's ability to meet the required standards, not the generator with the owner or operator's choice of emissions control devices. If a specific make and model of generator as manufactured were unable to be operated in compliance with the standards, it would not warrant certification. Add-on emissions control devices are an option available to the owner or operator of a generator that is not certified, that the owner or operator cannot otherwise operate in compliance with the requirements of the section and for which the owner or operator does not choose to obtain an individual permit.

- Maintaining a generator as recommended by a manufacturer is not an alternative to certification, but a necessary complementary requirement since operator maintenance and operating practices influence the actual emissions from any particular generator. Even a generator properly certified as capable of operating in compliance with the standards may not actually so operate if it is inadequately or inappropriately maintained.

- A reduction in the certification period is unnecessary. The certification requirement is

separate from the current warranty practices in the industry. When the three year or 15,000 hour certification of the RAP Model Rule is adopted in several states, it will serve as an incentive to manufacturers to issue conforming certifications. While Connecticut's certification is a compliance option, the incentive for manufacturers to issue such certifications is increased by state regulations that include mandatory certification requirements, such as the regulatory amendment for distributed generation proposed in May 2004 in Massachusetts.

23. Comment: Subsections (e)(3)(A), (e)(3)(D)(i) and (e)(4)(C)(iii) authorize the Commissioner unilaterally to approve alternative test methods and alternative documentation in support of a certification. If Connecticut intends to adopt Section 42 into the State Implementation Plan ("SIP") for enforceable emission reductions, these discretionary provisions must be qualified to ensure that any such alternatives will be submitted for EPA approval before they are authorized. (EPA)

Response: The Department will work cooperatively with EPA with regard to the consideration of any requests to use alternative test methods that may be submitted to the Commissioner and, if necessary, submit an appropriate enforceable mechanism (*e.g.*, a permit or an order) as a case specific SIP revision.

24. Comment: CBIA and EMA understand the proposed certification requirements to be mandatory. CBIA requests clarification if that is not the Department's intent.

Response: The certification provisions in subsection (e) are a compliance option signified by the verb "may" in subsection (e)(1). If an owner or operator chooses to comply with Section 42's standards through a certification, such owner or operator must satisfy the provisions in subsections (e)(2) through (e)(7) -- hence, the use of the verb "shall" in subsections (e)(2) through (e)(7).

25. Comment: A certification applies to the first 15,000 hours of operation or three years. Is the Department intending to require new certifications or stack tests if the operating life of a generator extends beyond 15,000 hours or three years?

Response: Section 42 includes no requirement on owners and operators to re-certify generators with an operating life extending beyond 15,000 hours or three years. If the Department has information suggesting that any particular generator subject to a certification is not operating in compliance with Section 42, the Commissioner has the authority to require that the owner or operator stack test the generator to determine its compliance status and, if necessary, to require the owner or operator to obtain an individual permit for the generator or take any other action necessary to protect public health and the environment.

26. Comment: Comments regarding the need to clarify the certification and emissions testing provisions include the following:

- Subsection (e)(1)(C) is not clear as to how self-certification should be accomplished. (CBIA)

- Subparagraph (e)(1) states that obtaining one of three types of certifications can satisfy the requirements of Section 42. In order to ensure that the generator is in compliance with the emissions standards, it is important that this certification process include some established and verifiable means of evaluating the generator's actual performance (*e.g.*, federally approved certification test procedures). While subsections (e)(1)(B) and (e)(1)(C) do not specify emissions test methods, subsection (e)(3) does include emissions test requirements necessary to ensure compliance. The Department should add language in subsection (e)(3) indicating that in order to obtain certifications, the generator must satisfy the elements identified in subsection (e)(3). To do so, subdivision (3) and (2) could be combined to state "A generator's compliance with the applicable emissions standards of this section when installed and operated for the lesser of the first 15,000 hours or three years of operation shall be [verifiable] VERIFIED IN ACCORDANCE WITH SUBSECTION (e)(2) BY THE CERTIFYING ENTITY PRIOR TO CERTIFICATION, by emission tests performed as follows: . . . ." (EPA)

- The certification option in (e)(1)(A) should be revised to cite Title 17, not Title 13, of the California Code of Regulations. (EPA)

Response: CBIA and EPA's comments highlight the need for a clear statement of the acceptable options available to demonstrate compliance with the standards. In particular, Section 42 should be clarified to state how an owner or operator of a distributed generator not certified by the supplier or CARB demonstrates compliance with the standards. Performance test results indicating compliance are implied in the "self certification" option of subsection (e). However, the absence of a clear duty on such a distributed generator owner or operator to perform an emissions test in proposed Section 42 eviscerates the certification option. Therefore, the Department should delete the "self certification" option in subsection (e) and revise subsection (d) to require a distributed generator owner or operator to demonstrate compliance by either performing emissions testing or obtaining certification for the generator from CARB or the supplier.

In response to EPA's comment that Section 42 should require all generator owners and operators to perform an emissions test, mandatory testing is only necessary for non-certified generators. Mandatory testing of CARB or supplier certified generators would defeat the purpose of the certification, which is intended to add administrative simplicity and provide an incentive for generator manufacturers to develop emissions-reducing technologies. Furthermore, the Department has the authority to order a stack test of a certified generator to determine whether or not such generator is performing as expected. This authority is particularly important if an owner or operator does not maintain and operate a generator as recommended by the manufacturer. Although a particular model generator may properly receive a manufacturer certification, operator maintenance and operating practices will influence the level of actual emissions.

To clearly require performance testing and revise the certification requirements as described above, the Department should revise subsections (d)(5) through (d)(8) and (e), as follows. In so doing, the Department should also revise the reference to the California Code of Regulations in subsection (e) to "Title 17":

(d) Emissions requirements.

. . . .

(5) ~~Compliance with the standards of this subsection shall be determined at full load design conditions or, for generators complying with the emissions standards of this subsection pursuant to subsection (e) for which a different load condition is specified by an applicable testing method provided in subsection (e), at such different load condition.~~ **To demonstrate compliance with the oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide standards of this subsection, an owner or operator shall either:**

(A) Obtain a certification pursuant to subsection (e) of this section; or

(B) Conduct an initial performance test as required by subdivision (d)(6) of this section.

(6) <u>Performance testing.</u> A distributed generator owner or operator who has not obtained a certification for such generator pursuant to subsection (e) of this section shall conduct an initial performance test for oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide, as follows:

(A) For an existing generator, an initial performance test for oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide shall be completed no later than 180 days after the effective date of this section;

(B) For a new generator, an initial performance test for oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide shall be completed no later than 180 days after installation;

(C) Each initial performance test shall be conducted at ISO full load operating conditions, unless alternative load conditions are specified by the applicable test method;

(D) Each initial performance test shall be conducted in accordance with the following methodologies:

(i) Applicable EPA Reference Methods, California Air Resources Board methods or equivalent methods approved by the commissioner, and

(ii) For a generator with a reciprocating engine using liquid fuel, particulate matter emissions shall be tested using ISO Method 8178; and

(E) If an owner or operator of a generator for which an initial performance test is conducted modifies such generator in a manner that increases emissions of oxides of nitrogen, particulate matter, carbon monoxide or carbon dioxide, the owner or operator shall, within 180 days of completing such modification, perform a test of the generator's emissions according to the requirements for an initial performance test in subparagraphs (C) and (D) of this subdivision.

~~(6)~~**(7)** Each owner or operator of an existing generator subject to this section shall achieve compliance with the applicable requirements of this section no later than 180 days after the effective date of this section. Any owner or operator of any existing generator who is unable to comply with the requirements of this section 180 days after the effective date of this section shall immediately cease operation.

~~(7)~~**(8)** Each owner or operator of a new generator subject to this section shall achieve compliance with the applicable requirements of this section ~~upon~~ **no later than 180 days after** installation.

~~(8)~~**(9)** The Commissioner may order emissions testing of a generator subject to this section to verify compliance with the applicable ~~emissions~~ **oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide** standards of this section. Such testing shall be performed using the applicable testing methods identified in this section or other methods identified by the commissioner.

(e) Distributed generator certification.

(1) An owner or operator of any new or existing distributed generator subject to this section may satisfy compliance with the applicable ~~emissions~~ **oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide** standards of this section by obtaining one of the following certifications:

(A) Certification by the California Air Resources Board pursuant to Title ~~13~~ **17**, sections 94200 through 94214 of the California Code of Regulations; **or**

(B) Certification by the generator supplier that satisfies the requirements of this subsection**.** ~~; or~~

~~(C) For an existing generator, certification by the owner or operator that satisfies the requirements of this subsection.~~

(2) A certification under subdivision (1)(B) ~~or (1)(C)~~ of this ~~section~~ **subsection** shall apply to a specific make and model of generator and shall include the certifying entity's statement that such make and model of generator has the ability to operate in compliance with the applicable ~~emissions~~ **oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide** standards of this section for the lesser of the first 15,000 hours of operation or three years, when such generator is installed, operated and maintained according to the manufacturer's instructions.

(3) A generator's compliance with the applicable ~~emissions~~ **oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide** standards of this section when installed and operated for the lesser of the first 15,000 hours or three years of operation shall be verifiable by emission tests performed as follows:

(A) Unless otherwise specified in this subsection, using EPA Reference Methods, California Air Resources Board methods or equivalent test methods approved by the Commissioner;

(B) At ISO full load ~~design~~ **operating** conditions unless alternative load conditions are specified by the applicable ~~testing~~ **test** methods;

(C) For a generator with a reciprocating engine using liquid fuel, particulate matter emissions shall be tested using ISO Method 8178; and

(D) If the owner or operator of a certified generator modifies such generator from the original design in a manner that will increase emissions **of oxides of nitrogen, particulate matter, carbon monoxide or carbon dioxide**, within 180 days of ~~the~~ **completing such** modification, the owner or operator shall either:

(i) Perform a test of the generator's emissions to demonstrate compliance with the ~~emissions~~ **applicable oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide** standards of this section ~~using a test method approved by the Commissioner~~ **according to the requirements for an initial performance test in subsections (d)(6)(C) and (d)(6)(D) of this section,** or

(ii) For a generator certified by the supplier, obtain from the supplier an amendment of the existing certification or a new certification of compliance of the modified generator.

(4) Documentation sufficient to demonstrate certification shall include:

(A) A valid supplier's certificate stating that the subject make and model of

generator is capable of compliance as provided in subdivision (2) of this subsection; **or**

(B) A valid and effective Executive Order issued by the executive officer of the California Air Resources Board certifying compliance as required by subdivision (1)(A) of this subsection**.** ~~; or~~

~~(C) Written documentation of the owner or operator sufficient to demonstrate compliance with the requirements of this subsection that may include, but is not limited to:~~

~~(i) Emissions test data of the subject generator from testing that occurred within the previous twelve (12) months that demonstrates compliance with the applicable emission standards of this section,~~

~~(ii) Emissions test data or other data obtained during the first 15,000 hours of operation or first three years of operation sufficient to demonstrate operation in compliance with the requirements of this section, or~~

~~(iii) Other documentation as approved by the Commissioner.~~

(5) Any owner or operator of a generator that is operating in compliance with the applicable ~~emissions~~ standards of this section pursuant to a certification shall maintain such generator as prescribed by the manufacturer.

(6) The owner or operator of any generator that is certified to operate in compliance with the applicable ~~emissions~~ standards of this section shall display the following statement on the nameplate of the generator or on a label in a conspicuous location attached to such generator with the following text:

"This generator is certified as meeting the applicable ~~emission~~ standards of R.C.S.A. section 22a-174-42 when maintained and operated in accordance with the manufacturer's instructions."

(7) An owner or operator of a generator that is operating in compliance with the ~~emissions~~ standards of this section pursuant to a certification shall comply with all other applicable requirements of this section including, but not limited to, fuel requirements, recordkeeping and reporting.

Also, a new subdivision (10) should be added to subsection (h) to specify that an owner or operator who conducts an initial performance test must maintain records related to the test, as follows:

(10) The test reports and supporting calculations documenting the results of any performance test to determine compliance with a standard in the section shall be recorded.

Finally, to conform the notification requirements of subsection (i)(3) to the revisions recommended above, the reference to subsection (e)(3)(D)(ii) should be deleted and a reference to subsection (d)(7)(D)(i) should be added as indicated below:

(3) At least ninety (90) days before any owner or operator plans to use a method or procedure pursuant to subsections ~~(e)(3)(D)(ii),~~ **(d)(7)(D)(i),** (f)(1)(B) or (f)(3) of this section, such owner or operator shall submit a request . . .

Subsection (f), credit for concurrent emissions reductions

27. Comment: Solar recommends that the emissions levels in Table 42-1 be considered the standard for flared fuels.

Because of the way in which the applicability section is drafted, the flared fuels allowance in Section 42(f)(1) may never have practical application since most applications that utilize flared fuels are continuous duty applications and do not run intermittently or seasonally. However, the standards in Table 42-2, especially in 2008 and 2012, represent dry-low-NOx or lean burn technologies plus SCR/CO catalyst emissions levels. Flared fuels, such as landfill gas, are very low BTU fuels and cannot be utilized in dry-low-NOx combustion systems. In addition, add-on controls are not technically feasible as fuel constituents generally will poison the catalyst systems. (Solar)

Response: As a matter of state policy Connecticut encourages electricity generation using landfill gas as fuel. *See, e.g.,* C.G.S. section 16-1 (energy derived from methane gas at a landfill is a "Class I renewable energy source"), C.G.S. section 16-245a (electricity generated by a Class I renewable energy source will satisfy renewable portfolio standards) and C.G.S. section 16-245n (landfill gas generation qualifies for funding from the Renewable Energy Investment Fund). To support this state policy, Section 42(d) should be revised as indicated below to apply the standards of Table 42-1 to all distributed generators fueled by flared fuel, which includes generators fueled by landfill gas, and therefore change the standards to which credits in subsection (f)(1) are applied for such generators:

(d) Emissions requirements.

(1) No owner or operator of any existing distributed generator subject to this section shall cause or allow the emission of any air pollutant in excess of the emissions standards identified in Table 42-1 of this section.

(2) **Except as provided in subsection (d)(4) of this section,** no owner or operator of any new distributed generator subject to this section shall cause or allow the emission of any air pollutant in excess of the applicable emissions standards identified in Table 42-2 of this section. The applicable emissions standards are those standards in effect on the

date that such generator is installed.

(3) The particulate matter standards of Tables 42-1 and 42-2 of this section shall apply only to a distributed generator with a reciprocating engine using liquid fuel.

(4) Notwithstanding subsection (d)(2) of this section, the owner or operator of any new distributed generator using flared fuel shall meet standards of subsection (d)(1) of this section.

. . . . .

The remaining subdivisions in subsection (d) should be re-numbered accordingly.

28. Comment: The proposed efficiency standard for calculating an emissions credit for CHP systems penalizes some efficient systems and allows some inefficient systems. CHP systems that save energy over conventional systems will meet the following formula: $E_{CHP} + (H_{CHP} *(E_{CONV}/H_{CONV})) > E_{CONV}$ where E_{CHP} and H_{CHP} are electrical and heating efficiencies of CHP and E_{CONV} and H_{CONV} are efficiencies of conventional systems displaced. E_{CONV} should be the marginal delivered efficiency for electricity with a likely value of between 0.30 and 0.40. (NECA)

Response: The Department should make no revision to Section 42 in response to this comment. The proposed 55% design system efficiency requirement was chosen as it is higher than that of combined cycle systems yet is achievable by a range of CHP technologies. NECA does not provide sufficient information to explain the derivation of its recommended alternative efficiency requirement or why that alternative is preferable to the proposed requirement.

29. Comment: It is not clear how the end-use efficiency and non-emitting resources identified in subsection (f)(3) would be calculated. The proposed regulations reference only "guidelines established by the commissioner." Has the Department issued such guidelines yet? If there is guidance, the Department should include it in the regulation. If no guidance has been established, CBIA suggests that a SIPRAC workgroup be established to develop guidance. (CBIA)

Response: At this time, the Department has not established guidelines to provide information to owners and operators concerning what resources or measures are potentially eligible for emissions credit and how the electricity saved or supplied would be calculated. However, the Department is interested in establishing such guidelines not only to provide a basis for the emissions credit provision in Section 42 but also because the Department is considering amending R.C.S.A. section 22a-174-22b to create a set aside of allowances for allocation to energy efficiency measures. Therefore, the Department announced the creation of a SIPRAC subcommittee in June 2004 to develop a list of eligible measures that could qualify for credits against standards under Section 42(f)(3) and be used to establish an allowance set aside under R.C.S.A. section 22a-174-22b.

The determinations made by that subcommittee will not be complete in a time period suitable for

incorporation into Section 42. Therefore, subsection (f)(3) should be revised as indicated below at this time, and the Department should consider additional revision to subsection (f)(3) following completion of the SIPRAC subcommittee process:

(3) End-use efficiency and non-emitting resources. ~~When~~ **If** an end-use energy efficiency and conservation measure or electricity generation that does not produce any of the emissions regulated by this section is installed and operated at a facility contemporaneous with ~~installation~~ **operation** of a distributed generator, then **the owner or operator may submit a written request to the commissioner to add** the electricity savings credited to the efficiency and conservation measure or supplied by the non-emitting electricity source ~~shall be added~~ to the electricity supplied by the **distributed** generator for the purposes of calculating compliance with the requirements of this section. ~~, subject to the approval of the Commissioner and in accordance with guidelines established by the Commissioner for determining such savings.~~ **In support of such a request, such owner or operator shall submit the requestor's contact information, a description of the measure that includes the installation date and the estimated lifetime, the calculation of the electricity saved or supplied, an explanation of the electricity monitoring and verification method, the amount of electricity generated by the distributed generator in the previous twelve (12) months of operation and any other information requested by the commissioner.**

Subsection (g), fuel requirements

30. Comment: In order to require that low sulfur diesel fuel be used in liquid fuel applications, Section 42(g) requires the use of "motor vehicle diesel fuel."

Motor vehicle diesel fuel and typical low sulfur diesel #2 are classified by different ASTM specifications. Solar's equipment utilizes a diesel #2 fuel containing less than 15 ppm sulfur. Solar's concern is that motor vehicle diesel fuel may not meet our fuel specification and thus cause damage to the turbine. Motor vehicle diesel fuel contains heavier elements and has an ash content, distillation curve and endpoint that may cause concerns if used. Each individual project's fuel specification will need to be evaluated to determine if motor vehicle diesel fuel would be acceptable.

Therefore, Solar recommends the following change to proposed subsections (g)(1) and (g)(4):

(1) Any generator powered by a diesel internal combustion engine shall combust only ***fuel with the same sulfur content as*** motor vehicle diesel fuel.

. . . .

(4) The owner or operator of any distributed generator that is dual-fuel generator shall combust only liquid fuel that complies with motor vehicle diesel fuel ***sulfur*** standards; and…." (Solar)

Response: The Department should revise subsections (g)(1) and (g)(4) as indicated below.

These revisions will achieve the desired sulfur content limitation and will be consistent with the fuel sulfur content required by EPA for diesel fuel used in motor vehicles:

> (1) Any generator powered by a diesel internal combustion engine shall combust only **liquid** ~~motor vehicle diesel~~ fuel **that does not exceed the sulfur content of motor vehicle diesel fuel**;
>
> (2) Any gaseous fossil fuel other than natural gas combusted shall contain no more than ten grains total sulfur per 100 dry standard cubic feet;
>
> (3) If the generator is supplied with fuel from more than one tank or if the generator and at least one other source are supplied fuel by a single fuel tank, the owner or operator shall install and operate a non-resettable fuel metering device to monitor continuously the fuel consumed by the generator's engine;
>
> (4) The owner or operator of any distributed generator that is a dual-fuel generator shall combust only liquid fuel that ~~complies with motor vehicle diesel fuel standards~~ **does not exceed the sulfur content of motor vehicle diesel fuel**; and

31. Comment: EPA comments that subsection (g)(4) should be clarified as follows:

> (4) The owner or operator of any distributed generator that is a dual-fuel generator AND THAT USES LIQUID FUEL shall combust only liquid fuel that complies with motor vehicle diesel fuel standards; and

Response: The Department should make no change in response to this comment as a dual-fuel generator by definition in Section 42(a) combusts liquid as well as gaseous fuel.

32. Comment: The reference to subsection (g) in subsection (d)(4)(B)(ii) should be changed to specify subsection (g)(4). (EPA)

Response: The Department should include the more specific reference to subsection (g)(4) in subsection (d)(4)(B)(ii), as follows:

> (ii) Use a fuel that complies with subsection (g)**(4)** of this section.

Subsection (h), records

33. Comment: NUSCO suggests that the Department revise subsection (h)(1) by deleting "as approved by the Commissioner" and adding "is provided by the applicant at the time of registration."

Many distributed generation facilities will be un-staffed and not have structures where records can be stored. NUSCO further believes that prior approval is unnecessary. For inspections at un-staffed facilities, the Department will need to contact the owner or operator of the distributed generator prior to the inspection, and records can be made available at the inspection. In addition, the Department has the authority to request records at any time regardless of where the

records are stored.

Response: The Department should revise subsection (h)(1) as follows to require that a distributed generator owner or operator maintain records at a location in the state:

> (1) The owner or operator of any distributed generator shall maintain records of the information necessary to determine compliance with the requirements of this section including, but not limited to, the information specified in this subsection, labeling each record with the calendar date on which the record is generated. Each record shall be maintained for a period of at least five (5) years from the date the record is created at **a** ~~the premises where the distributed generator is located or at such other~~ location in Connecticut ~~approved by the Commissioner in writing~~ **identified in the notification required pursuant to subsection (j)(1) of this section.**

Furthermore, the requirement to submit the location of records to the Commissioner should be added to the notification required by subsection (j)(1) as new subparagraph (H), as follows:

> (1) Any person intending to operate a distributed generator pursuant to this section shall submit a notification to the Commissioner including, but not limited to, the following information:
>
> (A) Legal name(s), address(es) and telephone number(s) of the generator owner and operator. If the owner or operator is a corporation or a limited partnership transacting business in Connecticut, provide the exact name as registered with the Secretary of State;
>
> (B) Location address of the premises where the generator is located;
>
> (C) Make and model of the generator;
>
> (D) Maximum design gross power output of the generator;
>
> (E) Actual dates of construction and installation of an existing generator and actual or intended dates of construction and intended date of installation of a new generator;
>
> (F) Each fuel type used or intended to be used, including the maximum sulfur content of such fuel; ~~and~~
>
> (G) Actual emissions data, if available, or the manufacturer's estimates of emissions, if available~~.~~; **and**
>
> **(H) The location address in Connecticut where records required to demonstrate compliance with this section are maintained.**

Subsection (i), reports and requests

34. Comment: Subsection (i)(2) refers to the water regulations, section 22a-430-3(b)(2), for certification requirements. Many of CBIA's members prefer the water certification requirements to those of section 22a-174-2a. Did the Department intend to refer to the water regulations, or is this an oversight? (CBIA)

Response: The Department intended to include the reference to certification requirements in R.C.S.A. section 22a-430-3(b)(2) rather than those of R.C.S.A. section 22a-174-2a. R.C.S.A. section 22a-174-2a is currently undergoing an amendment process to streamline the signatory requirements and make such requirements consistent with the provisions set forth in 40 CFR 70. At the completion of such amendment process, the Department may evaluate replacing the certification requirements of Section 42 with those of amended R.C.S.A. section 22a-174-2a.

Subsection (j), notification of operation

35. Comment: Subsection (j)(2) appears to limit the owners and operators of existing generators to a 60 day window beginning at the effective date of the amendment to submit a notification of operation. Since many members of the regulated community do not immediately become aware of new regulations, this window could inadvertently restrict the number of owners of existing sources that might want to operate under section 42. CBIA recommends that the Department revise subsection (j)(2) to require an existing generator to notify the Department "no later than thirty (30) days prior to operating under this section." (CBIA)

Response: The Department should revise subsection (j)(2) as follows:

> (2) For an existing generator, a notification pursuant to this subsection shall be submitted no later than ~~sixty (60)~~ **thirty (30)** days ~~from the effective of this section~~ **prior to operating under this section**. For a new generator, a notification under this section shall be submitted no later than thirty (30) days prior to installation.

36. Comment: The word "date" should be added after the word "effective" in subsection (j)(2). (EPA)

Response: The Department should make no change in response to this comment. The revision indicated in the response to comment 35 makes this change unnecessary.

B. AMENDMENT OF SECTION 3b(e)(2)

Subparagraph (C), operating hour reduction for emergency engines

1. Comment: The Department should not decrease the number of hours of operation of emergency engines from 500 to 300 hours. Many commercial and industrial customers depend on these engines not only in the event of a blackout, but also for grid support. Since these engines only operate during true emergency conditions and no one can predict how many hours in a year such conditions will occur, the commenters recommend maintaining the existing 500 hour limitation. (DoD, NECA, Blue Sky, SNET)

DoD comments in addition that:

- Section 3b was promulgated in March 2002 to give source owners some relief from the burden of permitting a source that by design does not operate to the maximum potential capacity of 8760 hours per year. Section 3b set limits to potential capacities that were "practically [*sic*] enforceable" as defined in R.C.S.A. section 22a-174-1(87). In the case of emergency generators, the practically enforceable limit followed EPA guidance (EPA Memorandum, September 6, 1995) by limiting the engines to 500 hours. By reducing this limit to 300 hours, a source owner who believes either from historical data or otherwise that an emergency generator has the potential to exceed 300 hours, would apply for an individual permit, which would constitute a return to the pre-March 2002 period when many emergency generators in the State were required to obtain permits. Many of the permits issued prior to the March 2002 regulation change did not restrict sources beyond the requirements of Section 3b. If this is true in the future, the proposed restriction will have no added benefit to the environment; and

- The proposed reduction in hours is inconsistent with the expanded definition of "emergency" under the proposed Section 22(a)(4) under which the proposal provides more qualifying uses but less time to take advantage of them.

Response: The Department should make no change in response to these comments. The reduction in hours was proposed for consistency with the RAP Model Rule, which includes provisions for both emergency and non-emergency generators. The RAP Model Rule working group found that the proposed 300 hours is unlikely to be exceeded given the level of electric system reliability in the United States. The proposed 300 operating hours limitation is also consistent with the 300 operating hours limit for emergency generators proposed by the state of Massachusetts in its May 2004 regulatory amendment for small stationary engines and turbines.

The Department believes the proposed reduction in hours is consistent with the change to the definition of "emergency" proposed in Section 22(a)(4). The new subparagraph describes the conditions under which ISO-NE declares Action 12 and higher actions under OP 4. In common usage, these are brownout conditions, which are followed, if necessary, by involuntary load shedding. OP 4 Action 12 is called infrequently. ISO-NE historical data indicate that from 1999 through 2003, OP 4 Action 12 was declared for a total of 15 hours, 40 minutes in 1999; a total of

six hours, 57 minutes in 2001; and a total of 16 hours, 32 minutes in 2003. OP 4 Action 12 was not declared in 2000 and 2002. Thus, the proposed amendment of Section 22(a)(4) adds very few hours to the total hours of operation of an emergency generator and only for owners and operators of generators supplying emergency supplemental capacity in southwest Connecticut. Assuming that the occurrence of OP 4 Action 12 in coming years is similar to that of the last five years, a generator that operated one hour per week for maintenance and also operated to supply electricity under OP 4 Action 12 conditions would have over 200 hours of operating time remaining in a 12-month period. However, an owner who believes 300 hours to be insufficient may apply for an individual permit under Section 3a.

2. Comment: Since emergency generators rarely, if ever, operate at full capacity even when providing distributed generation, the Department could achieve its goal limiting the amount of pollutants emitted from such facilities, yet give emergency generator operators the flexibility to use their generators in the event of unforeseen exigencies by limiting a generator's maximum fuel consumption to the equivalent of the fuel that would be consumed if the generator operated at full capacity for 300 hours during any given year. (SNET, NECA) SNET proposes that the Department modify subparagraph (C) to read as follows:

> (C) On and after the effective date of section 22a-174-42 of the Regulations of Connecticut State Agencies, operation of such engine shall not exceed the maximum fuel consumption equivalent to 300 hours of operation at the maximum operation capacity of the engine during an twelve (12) month rolling aggregate; and

Response: The Department should make no change in response to this comment. As an alternative to the proposed 300 hours of operation, SNET suggests an unnecessarily complex approach that will function to increase the allowed hours of operation for an emergency generator to more than the 300 hours proposed.

3. Comment: NUSCO recommends that the reduction in allowable operating hours for emergency generators should be deleted and carried out in a separate rulemaking to ensure that the appropriate stakeholders have input. Many operators of emergency generators would not think a rulemaking for “distributed generators” would apply to them.

Response: As the change in operating hours was subject to all notice and hearing processes required by statute as a part of this rulemaking, the Department should not take the recommended action. The public notice for the proposal clearly stated that the rulemaking included revision to requirements for emergency engines, as follows:

> "**R.C.S.A. section 22a-174-3b(e)(2) -- Emergency engines:** Section 2 revises R.C.S.A. section 22a-174-3b to reduce the operating hours and fuel sulfur content requirements for emergency engines, ... "

Furthermore, the Department exceeded the legally required level of interaction with stakeholders and gave ample opportunity to all interested parties to become aware of and to participate in the

rulemaking process through the SIPRAC process. Once the Department satisfies legally required notice and hearing processes, the duty to be aware of applicable laws and regulations and choice of whether to comment on any of the Department's proposed regulatory amendments falls on all owners and operators of regulated sources.

Subparagraph (D), fuel sulfur limit for emergency engines

4. Comment: Because the proposed 30 ppm fuel sulfur limit for emergency generators differs from any current or forthcoming federal or state standards for sulfur in diesel or fuel oil, such fuel may not be available in sufficient quantities at a reasonable cost. Lack of fuel availability could impact the dependability of supply of electricity from emergency generators. (SNET, DoD, ICPA, NUSCO, CBIA) In addition to the availability and cost problems associated with using fuel meeting the proposed sulfur limit, the proposed fuel sulfur limit introduces an inconsistency between the fuel sulfur content required for distributed generators and emergency engines. For distributed generators, Section 42(g)(1) specifies the use of motor vehicle diesel fuel. (NUSCO, EMA) There is no logical reason to have a stricter fuel requirement for emergency engines that will operate less frequently than non-emergency engines. (EMA)

To address these concerns, commenters recommend that the Department not adopt the proposed 30 ppm fuel sulfur limit and replace it with one of the following alternatives:

- 0.05% sulfur, by weight. (ICPA, DoD) ICPA recommends this limit because it corresponds to legislation proposed [but not adopted] in the General Assembly this session that would lower sulfur limits in #2 heating oil from the current 3000 ppm (0.3%) to 500 ppm (0.05%) on and after July 1, 2007 in a regionally coordinated fashion with New York, Massachusetts and Rhode Island. *See* SB 219, An Act Reducing the Sulfur Content of Home Heating Oil and Off-Road Diesel Fuel. DoD recommends this limit because it corresponds to the limit currently imposed for "on-road" diesel fuel and is the typical fuel currently used in many emergency generators.

- The use of motor vehicle diesel fuel or gasoline for liquid-fueled engines, rather than defining specific sulfur limits. (NUSCO) The federal rules on diesel fuel will require a reduction of sulfur in transportation grade fuels to less than 30 ppm by 2010. By adopting the federal standard and using the wording "transportation grade" or "motor vehicle grade," any future changes to fuel sulfur limits will be met. Moreover, this will not significantly increase the costs and management of ultra-low sulfur fuel prior to implementation of the federal rules.

Rather than revise the fuel sulfur limit, CBIA recommends that the Department revise the effective date to be consistent with EPA's low sulfur fuel requirement for on-road diesel, which takes effect in mid-2006.

Response: The Department should revise Section 3b(e)(2)(D) in response to the comments to address the expressed fuel availability and cost concerns and the inconsistency with the fuel sulfur requirement for distributed generators.

Specifically, the Department should adopt the recommendation to require the use of fuel consistent with the federal fuel sulfur standards for motor vehicle diesel fuel and consistent with the effective date of such federal standards. This change will not only address fuel availability and cost concerns but will also make the fuel requirements for emergency generators and distributed generators consistent. *See* the response to Comment 30 regarding Section 42. Pursuant to 40 CFR 80.520(a) and 80.500, EPA will require all retail suppliers of motor vehicle diesel fuel to supply fuel with a maximum sulfur content limit of 15 ppm as of September 1, 2006. Therefore, the Department should revise Section 3b(e)(2)(D) as follows:

(D) ON AND AFTER THE EFFECTIVE DATE OF SECTION 22a-174-42 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES, ANY NONGASEOUS FUEL CONSUMED BY SUCH ENGINE SHALL NOT EXCEED ~~A SULFUR CONTENT OF 30 PPM~~ **THE SULFUR CONTENT OF MOTOR VEHICLE DIESEL FUEL WHERE "MOTOR VEHICLE DIESEL FUEL" IS DEFINED AS IN SECTION 22a-174-42 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES.**

C. AMENDMENT OF SECTION 22(a)(4)

1. Comment: A high level of positive comment was submitted regarding the proposed revision to Section 22(a)(4) to allow the owners and operators of emergency generators to supply emergency supplemental capacity for southwest Connecticut and maintain such generators' emergency status for air permitting purposes. (UI, Milford Hospital, CMEEC, ISO-NE, DoD, Pinpoint, SNET, Danbury, Blue Sky, NECA, EMA) Some examples of such comment include:

- CMEEC commends the Department's efforts to make the Connecticut air quality regulation's definition of "emergency" consistent with that employed by ISO-NE and the New England Power Pool. Emergency generators protect the health and welfare of the general public and business communities. Allowing such generators to operate when the electric grid is facing possible collapse is good public policy and represents a conservation of resources though minimization of development and prudent use of infrastructure investment.

- ISO-NE asserts that the environmental impacts associated with pushing the electric grid to the point where involuntary load shedding is needed are more severe than allowing limited use of emergency generation to avoid -- and recover from -- such conditions. It would seem from the perspective of environmental protection, public safety and electric system reliability that operation of a limited number of emergency generators for a limited number of hours would be preferable to widespread use of emergency generators under "lights out" conditions and the subsequent recovery and restoration time.

- Pinpoint notes the need for immediate action to ensure the continued reliability of power supply in the southwest Connecticut area. A strong Connecticut economy and business climate depend on this reliability. Fortunately, the Department's recommendation to amend the definition of "emergency" to allow customers' back-up generators to participate in ISO-NE's 30 minute real-time demand response program is exactly the kind of action required.

- The proposed definition of "emergency" is very important to keeping the lights on in Connecticut, particularly southwest Connecticut. Blue Sky commends the Department for including language in the definition that will allow emergency engines to operate during OP 4 Action 12 conditions. These conditions are very rarely called by ISO-NE; they are reserved for real emergencies. (Blue Sky)

Response: The Department notes the general comment in favor of the amendment of Section 22(a)(4).

2. Comment: NUSCO believes the proposed amendment of Section 22(a)(4) is unnecessary. The proposed rulemaking Statement of Purpose states that this provision was added "to address operation of a distributed generator to recognize situations under which ISO-NE has declared that there is a capacity deficiency of the New England electric system." However, a distributed generator is not constrained to operating during an "emergency" and may operate at any time.

Thus, it would appear that this change is superfluous for purposes of Section 42.

Response: The Department should not revise Section 42 or Section 22 in response to this comment.

The proposed amendment of Section 22(a)(4) is necessary to apply Sections 42, 3a, 3b and 3c to the operation of both emergency generators and distributed generators. To clarify the Statement of Purpose, the amendment of Section 22(a)(4) revises the definition of "emergency" to include within that definition the periods of time when the ISO-NE calls for the operation of emergency generators to supply emergency supplemental capacity to southwest Connecticut. This change is pertinent to Section 42 since the owner or operator of a generator operated only during the periods of time specified in Section 22(a)(4) is exempt from choosing Section 42 as a compliance alternative and must operate under Section 3b, Section 3c or a permit issued under Section 3a. A distributed generator may also operate during the periods of time specified in Section 22(a)(4). However, a distributed generator will also operate at times not within the definition of emergency in Section 22(a) and may do so under either Section 42 or a permit issued under Section 3a.

3. Comment: UI, CBIA, Sci-Tech and NUSCO comment on the conflict between the intent of the revised definition of "emergency" in Section 22(a)(4) and the definition of "emergency engine" in Section 22(a)(3). The revised definition of "emergency" adds situations when ISO-NE declares a capacity deficiency to the periods of time that qualify as an emergency. The intent of this revision is to allow an emergency generator operating under Section 3b to supply emergency supplemental capacity in southwest Connecticut under agreement with ISO-NE and still maintain its ability to operate under Section 3b in lieu of obtaining a permit under Section 3a, as long as the conditions in section 22a-174-3b(e) are met. Companies that participate in the ISO-NE program are compensated by ISO-NE, as well as the utility.

The permit exemption in Section 3b applies to "emergency generators" as defined in Section 22(a)(3). However, because the owner or operator an emergency generator supplying emergency supplemental capacity receives compensation for such operation, the second sentence in Section 22(a)(3), which does not allow emergency engine operators to enter into any agreement to sell power or receive a discount in electricity from a supplier, would prevent the owner of an emergency engine from operating such engine in accordance with subparagraph (E) of the revised definition of "emergency." This inconsistency can be remedied by revising the definition of "emergency engine" in Section 22(a)(3) by deleting the second sentence. In addition, CBIA and UI recommend that the first sentence in that definition could be further clarified by inserting the words "as defined in section 22a-174-22(a)(4)" after the word "emergency."

Response: The Department should clarify the proposal to address the apparent conflict between Section 22(a)(3) and the intent of the proposed amendment of Section 22(a)(4). To preserve the intent of the proposal and the Department's basic distinction of emergency generators from distributed generators, under which emergency generators are those whose owners do not receive compensation for operating the generator while distributed generators are those whose owners do receive such compensation, Section 22(a)(3) should not be revised. The proposed amendment of

Section 22(a)(4) should be revised as follows:

> (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 electricity supplier to the premises;
>
> (B) Results in a deviation of voltage from the electricity supplier to the 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;
>
> (C) Requires an interruption of electrical power from the electricity supplier to the 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[.]; OR
>
> (E) **NOTWITHSTANDING SECTION 22a-174-22(a)(3) OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES,** REQUIRES OPERATION OF THE EMERGENCY ENGINE **UNDER AN AGREEMENT WITH THE NEW ENGLAND REGION SYSTEM OPERATOR** DURING THE PERIOD OF TIME IN WHICH THE NEW ENGLAND REGION SYSTEM OPERATOR BEGINS VOLTAGE REDUCTIONS OR INVOLUNTARY LOAD INTERRUPTIONS WITHIN THE CONNECTICUT LOAD ZONE.

This revision will preserve the basic distinction of distributed generators and emergency generators while allowing the owners of emergency generators to operate such generators and receive compensation only under the limited circumstance described in Section 22(a)(4)(E).

4. Comment: The Department should make the revision of Section 22(a)(4) effective as soon as the regulation adoption process is complete rather than delaying to January 1, 2005 or a later date. Immediate effectiveness may achieve both (1) increased reliability in southwest Connecticut and (2) improved air quality in the region as early as the summer of 2004. (NECA, Blue Sky, Danbury, Pinpoint)

Response: The Department does not anticipate that the regulation adoption process for this proposal will be completed before the end of summer 2004, the ozone season months in which ISO-NE is most likely to experience a capacity deficiency. Therefore, an effective date earlier than January 1, 2005 would not offer any benefits. If the process is completed earlier than anticipated, the Department should consider an earlier effective date.

5. Comment: Proposed subsection 22(a)(4)(E) should be revised as follows to clarify the duration of an emergency situation:

> "Requires operation of the emergency engine during the period of time WHEN the New England Region system operator [begins] IS IMPLEMENTING voltage reductions or involuntary load interruptions within the Connecticut load zone DUE TO A CAPACITY DEFICIENCY." (EPA)

Response: In addition to the revisions indicated in the response to Comment 3 on Section 22(a)(4), the Department should clarify Section 22(a)(4)(E) as follows:

> (E) REQUIRES OPERATION OF THE EMERGENCY ENGINE DURING THE PERIOD OF TIME ~~IN WHICH~~ THE NEW ENGLAND REGION SYSTEM OPERATOR ~~BEGINS~~ **IS IMPLEMENTING** VOLTAGE REDUCTIONS OR INVOLUNTARY LOAD INTERRUPTIONS WITHIN THE CONNECTICUT LOAD ZONE **DUE TO A CAPACITY DEFICIENCY**.

VII. Additional Comment by Hearing Officer

The Department should make the following technical corrections to the identified sections of the proposed adoption and amendment:

- Section 42(a): The abbreviation "CHP" should be deleted from the definition of "combined heat and power system" as indicated below because CHP is not used in the text of Section 42:

  "Combined heat and power system~~,~~" **or** "CHP system" ~~or "CHP"~~ means a distributed generator that sequentially produces both electric power and thermal energy from a single source.

- Section 42(a): The definition of "other gaseous fuel" should be deleted as indicated below as the term is not used in the text of Section 42:

  ~~"Other gaseous fuel" means any gaseous fuel that is not natural gas, including, but not limited to, landfill gas, waste gas and anaerobic digester gas.~~

- Section 42(a): The definition of "landfill gas" should be deleted as indicated below as the term is not used in the text of Section 42 given the deletion of "other gaseous fuels:"

  ~~"Landfill gas" means gas generated by the decomposition of organic waste deposited in a landfill, including a municipal solid waste landfill, or derived from the evolution of organic compounds in the waste.~~

- Section 42(a): The term "power to heat ratio" should include hyphens as indicated below for consistency with the use in the text of Section 42:

"Power-to-heat ratio" means, for a CHP system, the design electrical output divided by the design recovered thermal output, where both outputs are measured in consistent units.

- Section 42(a): The definition of "turbine engine" should be deleted as indicated below as the term is not used in the text of Section 42:

  ~~"Turbine engine" means a stationary internal combustion engine that continuously converts an air-fuel mixture into rotational mechanical energy through the use of moving vanes attached to a rotor.~~

- Section 42(a): The definition of "waste gas" should be deleted as indicated below as the term is not used in the text of Section 42 given the deletion of "other gaseous fuels:"

  ~~"Waste gas" means a manufacturing or mining byproduct gas that is flared or incinerated.~~

- Sections 42(b)(1) and 42(b)(2): The reference to a general permit "issued pursuant to section 22a-174(*l*) of the Connecticut General Statutes" should be revised as indicated because the reference is not necessary and creates confusion given the amendment of section 22a-174 by Public Act 04-151:

  (1) The owner or operator of a distributed generator may operate such generator without obtaining a **new source review** general permit for such generator ~~issued pursuant to section 22a-174(*l*) of the Connecticut General Statutes~~ or . . .
  ******

  (2) The owner or operator of a distributed generator may modify such generator without obtaining a **new source review** general permit for such generator ~~issued pursuant to section 22a-174(*l*) of the Connecticut General Statutes~~ or . . .

- Section 42(d)(6): The use of "any" two times in the second sentence is redundant, and the second use should be replaced with "an" as follows:

  (6) Each owner or operator of an existing generator subject to this section shall achieve compliance with the applicable requirements of this section no later than 180 days after the effective date of this section. Any owner or operator of ~~any~~ **an** existing generator who is unable to comply with the requirements of this section 180 days after the effective date of this section shall immediately cease operation.

- Section 42(f): The word "fuels" should be replaced by "fuel" in the first sentence.

- Section 42(f)(1): The term "emissions standards" should be replaced as indicated below to conform to the revision described in the response to Comment 12:

(f) Credit for concurrent emissions reductions. The owner or operator of a distributed generator using flared fuel or combined heat and power, or that uses an end-use efficiency measure or operates a non-emitting resource at the same facility as a generator operating in accordance with this section may receive credit on a per pollutant basis towards compliance with the applicable ~~emissions~~ **oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide** standards of this section according to the requirements of this subsection.

(1) Flared fuels. If a generator uses fuel that would otherwise be flared, the owner or operator may deduct the emissions that were or would have been produced through the fuel flaring from the actual emissions of the generator on a per pollutant basis, for the purposes of calculating compliance with the applicable ~~emissions~~ **oxides of nitrogen, particulate matter, carbon monoxide and carbon dioxide** standards of this section, according to the following:

- Section 42(g)(1): The word "a" should be inserted as follows:

  (1) Any generator powered by **a** diesel internal combustion engine shall combust only motor vehicle diesel fuel;

- Section 42(h)(4): The phrase "with any emissions limitations" should be deleted as it is not necessary, and the phrase "used to determine the credit" should be added for specificity, as follows:

  (4) For the owner or operator of a distributed generator receiving credit towards compliance ~~with any emissions limitations of this section~~ pursuant to subsection (f) of this section, data **used to determine the credit** and calculations of the credit shall be recorded.

- Section 42(i)(3): The reference to subsection (e)(1)(A) should be deleted since that subsection does not specify the need to obtain the Commissioner's approval, as follows:

  (3) At least ninety (90) days before any owner or operator plans to use a method or procedure pursuant to subsections ~~(e)(1)(A),~~ (e)(3)(D)(ii), (f)(1)(B) or (f)(3) of this section, such owner or operator shall submit a request for such use to the commissioner for review and written determination to grant or deny. Such request shall . . .

- Section 42(j)(4): The address to which a notification of operation under Section 42 shall be directed should be changed from the Division of Planning and Standards to the Division of Compliance and Field Operations.

- Section 3a(a)(2)(B)(i): The reference to a general permit "issued pursuant to section 22a-174(*l*) of the Connecticut General Statutes" should be deleted as indicated because the reference is not necessary and creates confusion given the amendment of section 22a-174

by Public Act 04-151:

(i) registered under and is in compliance with any new source review general permit to construct and operate a new or existing stationary source ~~issued pursuant to section 22a-174(*l*) of the Connecticut General Statutes~~,

- Section 3a(a)(2)(B)(iii): The brackets around "or" at the end of the subparagraph should be deleted as follows as the word should remain in the final text:

(iii) a portable engine or boiler temporarily replacing an existing engine or boiler, provided the replacement units have a combined emissions rate equal to or less than the existing units and that the number of days total that any and all such portable engines or boilers may be used does not exceed ninety (90) days in any calendar year, ~~[~~or~~]~~

- The term "commissioner" should appear in lower case wherever it is used in the proposal adoption and amendment for consistency with current Department format.

- Where recommended changes to the proposal made later in this report affect the text or numbering/lettering of recommendations made earlier in this report, the final version of the text should include technical changes to the text; re-designation of numbers and letters; and revisions to internal citations, as necessary, to incorporate all the recommended changes in a logical and consistent format.

VIII. Final Text of Proposed Adoption and Amendment

The final text of the adoption and amendment, inclusive of the changes recommended in this report, is located at Attachment 3 to this report.

IX. Conclusion

Based upon the comments submitted by interested parties and addressed in this Hearing Report, I recommend the final adoption and amendment, as contained in Attachment 3 to this report, be submitted by the Commissioner for approval by the Attorney General and the Legislative Regulations Review Committee. Based upon the same considerations, I also recommend that, upon promulgation, this proposed adoption and amendment be submitted to EPA as a revision to the SIP pursuant to the Clean Air Act Amendments of 1990.

/s/Merrily A. Gere
Hearing Officer

September 13, 2004
Date

Attachment 1
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Attachment 2

Text of Proposed Adoption of R.C.S.A. Section 22a-174-42 and Amendment of R.C.S.A. Sections 22a-174-3b(e)(2), 22a-174-3a(a)(2)(B) and 22a-174-22(a)(4)

Attachment 3

Final Text of Adoption of R.C.S.A. Section 22a-174-42 and Amendment of R.C.S.A. Sections 22a-174-3b(e)(2), 22a-174-3a(a)(2)(B) and 22a-174-22(a)(4)