Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Protection

Bureau of Waste Prevention
Business Compliance Division

Background Information Document
And
Proposed Amendments to 310 CMR 7.00 et seq.
Regulations for the Control of Air Pollution in the
Berkshire Air pollution Control District
Pioneer Valley Air Pollution Control District
Merrimack Valley Air Pollution Control District
Metropolitan Boston Air Pollution Control District
Central Massachusetts Air Pollution Control District
Southeastern Massachusetts Air Pollution Control District

And 310 CMR 70.00
Environmental Results Program Certification

For Public Comment and Hearings

Engines and Combustion Turbines

Regulatory Authority:
M.G.L. Chapter 111, §§ 142A through 142N;
c.21§§ 26 through 53; c.21A§§2, 13 and 16; and c.21C

May 2004

I. BACKGROUND

The Massachusetts Department of Environmental Protection (DEP), Bureau of Waste Prevention is proposing additions and revisions to the Commonwealth's Air Pollution Control Regulations - 310 CMR 7.00 and Environmental Results Program Certification Regulations – 310 CMR 70.00 to further regulate emissions from stationary engines and combustion turbines.

Stationary engine and combustion turbine emissions contain particulate matter (PM), oxides of nitrogen (NOx), carbon monoxide (CO), sulfur dioxide (SO2), and other air toxics. Improperly located and designed units can potentially cause localized health impacts from emissions or nuisances from emissions or noise.

Stationary engines and turbines are used as emergency and non-emergency, electrical or mechanical power sources. Emergency units produce electricity when the lights are out at facilities such as hospitals, nursing homes, supermarkets, warehouses, high rise buildings, telecommunications, financial institutions, etc. Examples of mechanical power emergency use include pumping storm water and pressurizing water mains for fire fighting. Non-emergency units are used to generate electricity for the facility itself or sale to the electric grid, or to produce mechanical power for internal use. Non-emergency installations include the same type of facilities that have emergency units. Other non-emergency units include, burning landfill gas or digester gas, producing power for utilities, saw mills, ski areas, natural gas pipeline compressor stations and industry in general.

A recent study[1] indicates that there have been significant increases in the number of stationary diesel engines to over 5000 in Massachusetts. Of that total, approximately 79 % are emergency engines and approximately 70 % are smaller than current permitting thresholds. In recent years, the number of permit applications for engines has increased significantly as companies and institutions need to ensure an uninterrupted supply of electrical power. New combustion turbine installations represent a small share of this growing market.

As part of its ongoing streamlining efforts, DEP proposes to expand the use of Environmental Results Program (ERP) tools by applying them to the oversight of stationary engines and turbines.

II. Summary of Proposed Regulations

New sections to the Air Pollution Control Regulations, 310 CMR 7.26(40) through (44), are proposed for new engines and turbines installed six months after promulgation of these proposed regulations. Revisions to 310 CMR 7.02(8)(i) and 310 CMR 7.03(10) are proposed for existing emergency engines. To implement these requirements, minor revisions are proposed to 310

[1] "Stationary Diesels in the Northeast," Northeast States for Coordinated Air Use Management, June 2003 (www.nescaum.org). Go to "resources."

CMR 7.02 Plan Approval and Emission Limitations, 310 CMR 7.05 Fuels, and 310 CMR 70.00 Environmental Results Program Certification.

General requirements for new stationary engines and turbines:

- Each time a new engine or turbine is installed, the owner will be required to certify to compliance with all standards and requirements. The certification will include a manufacturer's certificate of emission performance. This will replace the currently required case-by-case permit review for those over current permit threshold levels.
- Exception to certification. Engines or turbines to be operated as peaking power production units, load shaving units, units in an energy assistance program, units that produce mechanical power to run pumps, units to compress natural gas at a pipeline compressor station, and units burning landfill, digester or other biogas may file a traditional application for approval (permit). These operations can have specific technical or economic considerations that should be considered in a case-by-case review. If a traditional approval is requested, Best Available Control Technology will be required by DEP.
- All proposed emission limitations are output based and expressed in pounds of emission per mega watt-hour of electrical energy or its mechanical equivalent as applicable. Output standards promote efficiency improvements.
- All new liquid fueled engines and turbines will be required to burn Ultra Low Sulfur Diesel (ULSD) (15 ppm) when it is required and becomes available for on road vehicles in 2006 (40 CFR 80). This fuel will reduce sulfur dioxide emissions from these sources by 99.5 % from the current sulfur in distillate fuel requirement of no more than 0.3%.
- New emergency and non-emergency turbines will be required to comply with emission standards based on DEP's evaluation of vendor information and recent agency permit determinations of Best Available Control Technology.
- Requirements for stack height/emission dispersion, noise, operation and maintenance, record keeping, reporting, monitoring, testing, and visible emissions are proposed for all new engine and turbine installations.

*Requirements for new **emergency** engines rated at 37 kw and greater and **emergency** turbines rated less than 1 MW:*

- New emergency engines that are installed for emergency backup power only will be required to comply with the emission standards based on EPA's non-road engine program. (40 CFR 89) Under EPA's program, manufacturers are required to certify that engine "families" meet standards that become more stringent over time, similar to the auto industry. This regulatory strategy was a recommendation of the Regulatory Assistance Project (RAP) in its "Model Rule for the Output Specified Air Emissions from Smaller-Scale Electric Generation Resources." [2] Subsequent to publication of the RAP Model Rule, EPA has proposed "Tier 4" non-road engine standards. Upon promulgation

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

by EPA, DEP will review the technical feasibility of the Tier 4 standards for emergency engine applications and propose adoption in a future rulemaking if appropriate.
- The threshold for regulation applicability for emergency engines is being lowered from 300 kw to 37 kw, assuring more new engine installations meet the up-to-date standards.
- The current requirement that emergency engines operation be limited to 300 hours per 12 month rolling period will be maintained.

*Requirements new **non-emergency** engines rated greater than 50 kw and **non-emergency** turbines rated less than or equal to 10 MW:*

- New non-emergency engines will require manufacturer certification based on standards set forth in the RAP Model Rule.
- The RAP Model Rule for non-emergency engines phases in increasingly stringent standards between 2004 and 2012. The timing of the phase-in periods is designed to accommodate manufacturers research and development cycles – 2004, 2008, and 2012. Because of uncertainty regarding future technology advances, a technology review is required to be completed one year prior to the 2012 standards becoming effective.

For existing engines and turbines:

- In addition to existing regulatory requirements, currently regulated existing liquid fueled emergency engines and turbines will be required to receive for use ULSD when available in 2006. After ULSD is available, owners and operators will be allowed to burn their existing supply of higher sulfur fuel at their facility until it runs out.

In summary, the regulation package is designed to:
- Assure installation of engines and turbines that meet up to date emission standards,
- Require new and existing liquid fueled units to burn clean fuel,
- Prevent nuisances, and
- Be implemented using the DEP's Environmental Results Program tools.

Comments Requested The RAP Model Rule (www.raponline.org) allows credits for Combined Heat and Power (CHP) projects where waste heat from the engine or turbine exhaust is put to productive thermal use, such as heating or cooling. The Model Rule regulatory scheme would allow an emission credit against the emission limitation based on the emissions that would have been created by a conventional separate system (e.g. boiler) used to generate the same thermal output. DEP has not proposed this scheme as it would allow a project to "net out" of Best Available Control Technology (BACT), the consequence being a "dirtier", non state-of-the-art engine or combustion turbine could be installed.

DEP favors and encourages the installation of CHP systems. DEP seeks comments on this issue and the identification of any alternative appropriate incentives.

III. Air Quality Impacts

The proposed regulations will have a positive impact upon air quality. New engines and turbines will be required to meet up-to-date technology standards. Existing emergency diesel engines and all new liquid fueled engines and turbines will be required to burn ULSD fuel. As a cleaner fuel, reductions of emissions such as sulfur dioxide, particulates, and carbon monoxide, will be realized. It is expected that market forces will cause ULSD to become the fuel of use for those units below existing regulatory thresholds.

IV. Savings Clause

Any regulatory amendments that affect regulations and programs that are part of the Massachusetts State Implementation Plan (SIP) must demonstrate that they are no less stringent than the existing SIP and that any projected increases in emissions that result from the amendments are offset by equal or greater predicted emission decreases.

As there are no emission increases or adverse air quality impacts projected as a result of these proposed amendments, there are no compensatory emission decreases that need to be made. It is noteworthy, however that the proposed amendments may result in some ancillary emission decreases.

V. Economic Impacts

The economic impacts can be divided into two categories: administrative costs to the Commonwealth and costs for those who own/operate engines and turbines.

First, this regulation uses DEP's Environmental Results Program (ERP) to certify compliance with standards versus the traditional case-by-case permit review. As such the DEP will not need to review individual applications nor will companies need to prepare applications and pay permit review fees. Because standards are set in the regulations, companies have certainty regarding what is required and can implement projects more quickly thus saving time and money. The DEP will need to review submitted certifications; however, this is much less time intensive than individual permit applications.

In general, the cost of compliance will be no greater as projects will need to meet up-to -date technology standards whether under the existing permit review process or the proposed ERP method. Costs for those burning liquid fuel will increase by 4 to 5 cents per gallon. However, as most diesel engine installations are emergency units and are limited to 300 hours per year, increased costs should be minimal. As ULSD fuel will be required of all on road vehicles (trucks and buses) the increased cost may in the future be further reduced.

VI. Impact on Small Business

The impacts upon small business are the same as detailed above.

VII. Agricultural Impacts

Pursuant to the intent of Massachusetts General Laws, Chapter 30A, Section 18, state agencies should evaluate the impact of proposed programs on agricultural resources within the Commonwealth.

As there are no air quality impacts or emission increases associated with these amendments, the proposed amendments are not expected to have any impact on agricultural production in Massachusetts.

VIII. Toxics Use Reduction

Implementation of toxics use reduction is a Department-wide priority. Toxics use reduction is defined as in-plant practices that reduce or eliminate the total mass of contaminants discharged to the environment. These proposed regulations are not expected to impact the Departments efforts.

IX. Impacts on Cities and Towns

Pursuant to Executive Order 145, the Department must assess the fiscal impact of new regulations on the Commonwealth's municipalities. The Executive Order was issued in response to Proposition 2 ½.

These regulations do not require that communities install engines or turbines. Some communities do have existing units that are typically emergency diesel engines. These units will be required to burn ULSD that is expected to cost approximately an additional five cents per gallon. As ULSD is required for on road and off-road vehicles, ULSD will displace traditional diesel fuel and be the only diesel fuel available. Because ULSD is a more refined product and burns cleaner, some costs will be offset by reduced maintenance costs. Overall costs will be small as emergency engines are restricted to 300 hours per year maximum usage.

X. MEPA

This proposed action is "categorically exempt" from the "Regulations Governing the Preparation of Environmental Impact Reports", 301 CMR 11.00, because the proposed amendments will result in an overall increase in emissions controls. All reasonable measures have been taken to minimize adverse impacts.

XI. Request For Comments

Comments on these proposed regulations should be sent to:

Mr. Robert T. Donaldson, Associate Director
Business Compliance Division
Bureau of Waste Prevention
Department of Environmental Protection
One Winter Street Eighth Floor
Boston, Massachusetts 02108

XII. PUBLIC PARTICIPATION

In developing these amendments, the Department has consulted with other northeastern states air pollution control agencies, the engine and turbine manufacturing industry, the environmental community, and proponents of distributed electrical and mechanical power.

These proposed regulations will be subject to further public review and comment prior to promulgation. Public hearings to collect comments on the proposed amendments will be conducted under the provisions of Chapter 30A of the Massachusetts General Laws on:

Tuesday June 22, 2004 – 9:30 AM	Wednesday June 23, 2004 – 9:30 AM
Department of Environmental Protection One Winter Street, Second Floor Boston, Massachusetts	Department of Environmental Protection 436 Dwight Street, Room 3003 Springfield, Massachusetts

Testimony may be presented orally or in writing at the public hearings. Written comments will be accepted until 5pm Eastern Standard Time on Wednesday June 30, 2004 at the Business Compliance Division, Department of Environmental Protection, One Winter Street, 8th Floor, Boston, MA 02108.

After public review and Department evaluation and response to comments, the final amendments will be submitted to the Secretary of State for promulgation. The amendments will also be submitted to the US Environmental Protection Agency for approval as a revision to the Massachusetts State Implementation Plan.

If there are any questions regarding the proposed amendments or this document, please contact Bob Donaldson at (617) 292-5619.

310 CMR 7.02 U Plan Approval and Emission Limitations

(2) Exemptions from Plan Approval

Amend 310 CMR 7.02(2)(b)29. to read as follows:

(b) Exemptions

29. Turbines and Reciprocating Engines An individual internal combustion engine such as a combustion turbine or reciprocating engine installed and operated in compliance with 310 CMR 7.26(40) through (44), or an internal combustion engine regulated by EPA as a non-road engine pursuant to 42 U.S.C. § 7543(e) and § 7547.

(5) Comprehensive Plan Application

Amend 310 CMR 7.02(5)(a)3. to read as follows:

(a) Applicability

3. Internal Combustion Engines Any individual internal combustion engine, such as a stationary combustion turbine or stationary reciprocating engine, shall comply with the requirements of 310 CMR 7.26(40) through (44), Engines and Combustion Turbines, except as provided by 310 CMR 7.26(42)(a)1. and 310 CMR 7.26(43)(a)3. An application is not required pursuant to this paragraph if the internal combustion engine is regulated by EPA as a non-road engine pursuant to 42 U.S.C. § 7543(e) and § 7457.

(8) Emission Limitations

Amend 310 CMR 7.02(8)(i) to read as follows:

(i) U Emergency or Standby Engine(s).

1. Applicability On and after **[SIX MONTHS AFTER THE EFFECTIVE DATE]** the construction, substantial reconstruction, or alteration of any emergency or standby engine shall be governed by the requirements of 310 CMR 7.26(40) through (44), Engines and Combustion Turbines.

a. Persons owning, operating or controlling an emergency or standby engine(s) constructed, substantially reconstructed, or altered prior to June 1, 1990, having an energy input capacity equal or greater than 3,000,000 Btu per hour individually shall operate said engine(s) in compliance with 310 CMR 7.02(8)(i)2. through 4. Notwithstanding the previous sentence, an operator or owner of an emergency or standby engine(s) constructed, substantially reconstructed or altered prior to June 1, 1990 and having an energy input capacity equal to or greater than 3,000,000 Btu per hour individually may apply for alternative operating and reporting requirements under 310 CMR7.02(5)(a)3.

b. Persons owning, operating or controlling an emergency or standby engine having an energy input capacity less than 3,000,000 Btu per hour per engine, electing to establish limits on the hours of operations of said engine(s) shall comply with 310 CMR 7.02(8)(i)2. through 5., or 310 CMR 7.02(11).

2.Limits of Operation The engine(s) may be operated no more than 300 hours each per any rolling 12 month period, including:

a. The normal maintenance and testing procedure as recommended by the manufacturer, and

b. Periods when the primary power source for a facility has been lost during an emergency, such as a power outage, an on-site disaster, an act of God, and

c. When the imminent threat of a power outage is likely due to failure of the electrical supply or when capacity deficiencies result in a deviation of voltage from the electrical supplier to the premises of three percent (3%) above or five percent (5%) below standard voltage.

3.Record Keeping The owner or operator shall establish and maintain the following records for each engine:

a. Information on equipment type, make and model, and maximum power input/output; and

b. A monthly log(s) of hours of operation, gallons of fuel used, fuel type and heating value, and a monthly calculation of the total hours operated and gallons of fuel used in the previous 12 months shall be kept on site; and

c. Purchase orders, invoices, and other documents to support information in the monthly log.

4.Availability of Records Monthly log(s) and records established under 310 CMR 7.02(8)(i)3. shall be made available to the Department or its designee upon request. The owner or operator shall certify that the log is accurate and true in accordance with 310 CMR 7.01(2).

5. Fuel Requirements On and after **[SIX MONTHS AFTER THE EFFECTIVE DATE]**, no person shall accept for delivery for burning in any engine subject to 310 CMR 7.02(8)(i), diesel fuel that does not meet the applicable U.S. Environmental Protection Agency sulfur limits for fuel pursuant to 40 CFR 80.29, 40 CFR 80.500(a), and 40 CFR 80.520(a) and (b) as in effect January 18, 2001.

7.03 U Plan Approval Exemption: Construction Requirements

Amend 310 CMR 7.03(10) to read as follows:

(10) Emergency or Standby Engine.

(a) On or after June 1, 1990, but prior to **[SIX MONTHS AFTER THE EFFECTIVE DATE]**, construction, substantial reconstruction or alteration of any emergency or standby engine shall comply with 310 CMR 7.03(10)(a) through (c). All such emergency or standby engines shall:

1.have an energy input capacity of equal to or greater than 3,000,000 Btu per hour and less than or equal to 10,000,000 Btu per hour; and

2.be equipped with an exhaust gas silencer so that sound emissions from the generator will not cause or contribute to a condition of air pollution; and

3.utilize an exhaust stack that discharges so as to not cause or contribute to a condition of air pollution, and

4.not operate more than 300 hours per rolling 12 month period, including:

a. The normal maintenance and testing procedure as recommended by the manufacturer and

b.Periods during which the primary power source for a facility has been lost due to an emergency, such as a power outage, an on-site disaster, an act of God, and

c. When the imminent threat of a power outage is likely due to a failure of the electrical supply or when capacity deficiencies result in a deviation of voltage from the electrical supplier to the premises of three percent (3%) above or five percent (5%) below standard voltage; and

(b) On and after **[SIX MONTHS AFTER THE EFFECTIVE DATE]**, no person shall accept for delivery for burning in any engine subject to 310 CMR 7.03(10), diesel fuel that does not meet the applicable U.S. Environmental Protection Agency sulfur limits for fuel pursuant to 40 CFR 80.29, 40 CFR 80.500(a), and 40 CFR 80.520(a) and (b) as in effect January 18, 2001.

(c) Reporting and record keeping requirements for 310 CMR 7.03(10), as required by 310 CMR 7.03(5) and (6), shall be in accordance with 310 CMR 7.02(8)(i)3. through 5.

310 CMR 7.05 U Fuels All Districts

(1) Sulfur Content of Fuels. Except natural gas

(a) Maximum Sulfur Content of Fuel

Add 310 CMR 7.05(1)(a)3. to read as follows:

3. Stationary Engines and Turbines – Diesel Fuel On and after **[SIX MONTHS AFTER THE EFFECTIVE DATE]**, no person owning, leasing or controlling a stationary engine or turbine subject to the requirements of 310 CMR 7.02(8)(i), 310 CMR 7.03(10), or 310 CMR 7.26(40) through (44) shall accept for delivery for burning any diesel fuel unless said fuel complies with the applicable U.S. Environmental Protection Agency sulfur limits for fuel pursuant to 40 CFR 80.29, 40 CFR 80.500, and 40 CFR 80.520(a) and (b) as in effect January 18, 2001.

310 CMR 7.26 Industry Performance Standards

After (16) add ((17)-(19) RESERVED)

After (37) add ((38)-(39) RESERVED)

Add Sections (40) through (44) as follows:

(40) Engines and Combustion Turbines - Applicability

(a) 310 CMR 7.26(40) through (44) in its entirety shall apply to engines and combustion turbines that are installed on and after **[SIX MONTHS AFTER THE EFFECTIVE DATE]** and that are not subject to Prevention of Significant Deterioration (40 CFR 52.21) or Non-Attainment Review at 310 CMR 7.00: Appendix A.
(b) Engines that operate in a manner subject to 40 CFR 89, 90, 91, and 92 are exempt from the requirements of 310 CMR 7.26(40) through (44) in its entirety.

(41) Definitions Terms used in 310 CMR 7.26(40) through (44) are defined in 310 CMR 7.00 and 310 CMR 7.26(41). When a term is defined in both 310 CMR 7.00 and 310 CMR 7.26(41), the definition in 310 CMR 7.26(41) shall govern.

Emergency means an electric power outage due to failure of the grid, on-site disaster, local equipment failure, flood, fire, or natural disaster. Emergency shall also mean when the imminent threat of a power outage is likely due to failure of the electrical supply or when capacity deficiencies result in a deviation of voltage from the electrical supplier to the premises of three percent (3%) above or five percent (5%) below standard voltage.

Engines mean spark ignition and compression ignition stationary reciprocating internal combustion engines.

Rated Power Output means the maximum electrical or equivalent mechanical power output stated on the nameplate affixed to the engine or turbine by the manufacturer.

Supplier means a person that manufactures, assembles, or otherwise supplies engines or turbines.

Turbine means a stationary combustion turbine.

(42) Emergency Engines and Turbines

(a) Applicability 310 CMR 7.26(42) shall apply to all emergency engines with a rated power output equal to or greater than 37kW and emergency turbines with a rated power output less than 1 MW that are constructed, substantially reconstructed or altered after **[SIX MONTHS AFTER THE EFFECTIVE DATE]**. Peaking power units, load shaving units or units in an energy assistance program are subject to the requirements of 310 CMR 7.26(43).

1. Emergency turbines with a rated power output equal to or greater than 1 MW shall comply with the provisions of 310 CMR 7.02(5).
2. Emergency engines and turbines that are subject to 310 CMR 7.02(8)(i) or 310 CMR 7.03(10) shall continue to be subject to such requirements.
3. Emergency engines and turbines subject to 310 CMR 7.26(42) are not subject to the requirements of 310 CMR 7.02(5).

(b) Emission Limitations Emergency engines and turbines must comply with the emission limitations set forth in this section.

1. Emergency engines with a rated power output equal to or greater than 37 kW must comply with the applicable emission limitations set by the US EPA for non-road engines (40 CFR 89 as in effect October 23, 1998) at the time of installation. The owner or operator of an emergency engine subject to the requirements of 310 CMR 7.26(42)(b)1. shall obtain from the supplier a statement that a certificate of conformity has been obtained from the Administrator pursuant to 40 CFR 89.105 as in effect October 23, 1998. Any engine certified under the US EPA non-road standards is automatically certified to operate as an emergency engine pursuant to 310 CMR 7.26(42). For units that burn natural gas exclusively, a letter or other documentation from the supplier stating that the engine meets the applicable non-road emission limitation will satisfy the certificate of conformity requirement.

2. All emergency turbines with a rated power output less than 1 MW shall comply with the emission limitations contained in Table 1.

Table 1
Emission Limitations – Emergency Turbines

Rated Power Output	Oxides of Nitrogen
< 1 MW	0.60 pounds/MW - hr

(c) Fuel Requirements No person shall accept delivery for burning in any emergency engine or turbine subject to 310 CMR 7.26(42) diesel fuel that does not meet the applicable U.S. Environmental Protection Agency sulfur limits for fuel pursuant to 40 CFR 80.29, 40 CFR 80.500(a), and 40 CFR 80.520(a) and (b) as in effect January 18, 2001.

(d) Operational Requirements

1. Hours of Operation The emergency engine(s) or turbine(s) shall not be operated more than 300 hours during any rolling 12-month period. This operating restriction includes normal maintenance and testing procedures as recommended by the manufacturer. A non-turn back hour counter shall be installed, operated and maintained in good working order on each unit.
2. Operation and Maintenance The emergency engine(s) or turbine(s) shall be operated and maintained in accordance with the manufacturer's recommended operating and maintenance procedures.
3. Sound Emergency engines, turbines and associated equipment shall be constructed, located, operated and maintained in a manner to comply with the requirements of 310 CMR 7.10 Noise.
4. Stack Height and Emission Dispersion
    a. All emergency engines or turbines shall utilize an exhaust stack that discharges so as to not cause a condition of air pollution (310 CMR 7.01(1)). Exhaust stacks shall be configured to discharge the combustion gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted combustion gases, including but not limited to rain protection devices "shanty caps" and "egg beaters". Any emission impacts of exhaust stacks upon sensitive receptors including, but not limited to, people, windows and doors that open, and building fresh air intakes shall be minimized by employing good air pollution control engineering practices. Such practices include without limitation:
        i. Avoiding locations that may be subject to downwash of the exhaust; and
        ii. installing stack(s) of sufficient height in locations that will prevent and minimize flue gas impacts upon sensitive receptors.

b. Emergency engines or turbines with a rated power output equal to or greater than 300 kw, but less than 1 MW, shall have a minimum stack height of ten feet above the facility rooftop or the emergency engine or turbine enclosure, whichever is lower.
c. Emergency engines with a rated power output equal to or greater than one MW shall be equipped with a stack with a minimum stack height of 1.5 times the height of the building on which the stack is located. If the stack is lower than 1.5 times the building height or lower than the height of a structure that is within 5L of the stack (5L being five times the lesser of the height or maximum projected width of the structure), an EPA Guideline air quality model shall be run to document that the operation of the applicable emergency engine or turbine will not cause an exceedance of any National Ambient Air Quality Standard.

5. Visible Emissions Emergency engines and turbines shall comply with all the requirements of 310 CMR 7.06(1) (a) & (b).

(e) Emission Certification, Monitoring and Testing

1. Certification No person shall cause, suffer, allow, or permit the installation and subsequent operation of an emergency engine or emergency turbine unless said person has certified compliance with the requirements of 310 CMR 7.26(42) in its entirety in accordance with the provisions of 310 CMR 70.00- Environmental Results Program Certification. Certification shall include a statement that the installed emergency engine or turbine is capable of complying with the emission limitations for the first three years of operation. Certification shall be made to the Department within 60 days of commencement of operation; annual certification is not required.
2. Monitoring The Department may require emission or other monitoring to assure compliance with the requirements of 310 CMR 7.26(42).
3. Testing
    a. Tests to certify compliance with emission limitations must be performed in accordance with EPA reference Methods, California Air Resources Board Methods, or equivalent methods as approved by the Department.
    b. Particulate matter from liquid fuel reciprocating engines shall be determined using Method 8178 of the International Organization for Standardization.
    c. Testing shall be conducted at full the design load of the emergency engine or turbine.
    d. The Department may require emission or other testing to assure compliance with the emission limitations or fuel requirements.

(f) Record Keeping and Reporting The owner or operator shall maintain records described in 310 CMR 7.26(42)(f)1. through 4. Such records shall be made available to the Department or its designee upon request. The owner or operator shall certify that records are accurate and true in accordance with 310 CMR 70.03 Compliance Certification Requirements.

1. Information on equipment type, make and model, and rated power output; and
2. A monthly log of hours of operation, fuel type, heating value and sulfur content for fuel oil. A monthly calculation of the total hours operated in the previous 12 months shall be kept on site; and
3. Purchase orders, invoices, and other documents to support information in the monthly log.
4. Copies of certificates and documents from the manufacturer related to certificates.

(43) Engines and Turbines

(a) Applicability 310 CMR 7.26(43) in its entirety shall apply to engines with a rated power output equal to or greater than 50kW and to turbines with a rated power output less than or equal to 10 MW that are constructed, substantially reconstructed, or altered on or after **[SIX MONTHS AFTER THE EFFECTIVE DATE].**

1. Engines and turbines subject to 310 CMR 7.26(42) are not subject to the requirements of 310 CMR 7.26(43).
2. The owner or operator of any engine or turbine subject to 310 CMR 7.26(43) to be operated as a peaking power production unit, a load shaving unit, a unit in an energy assistance program, a unit that produces mechanical power to run pumps, a unit used to compress natural gas at a pipeline compressor station, a unit burning landfill, digester, or other biogas, may file a Comprehensive Plan Application pursuant to 310 CMR 7.02(5) for approval of such unit in lieu of complying with the requirements of 310 CMR 7.26(43).
3. Turbines with a rated output of less than 1 MW burning fuel oil, or greater than 10 MW burning any fuel shall comply with the requirements of 310 CMR 7.02(5). Application must be made and written approval granted by the Department prior to construction, substantial reconstruction, or alteration of such turbines.

(b) Emission Limitations Engines or turbines subject to 310 CMR 7.26(43) shall comply with the emission limitations established in Table 2 and 3 below.

1. A supplier of an engine or turbine may seek to certify that an engine or turbine meet the emission limitations established in Tables 2 and 3. All such certifications shall specify the make and model number of the engine or turbine. Certification means that the engine or turbine is capable of meeting the emission limitations for the lesser of 15,000 hours of operation or the first three years of operation. Supplier certification shall be on forms provided by the Department.
2. On or before December 31, 2010, the Department will complete a review of the state of, and expected changes in, technology and emission rates. The purpose of this review will be to determine whether the Table 2 emission limitations for engines to be installed on and after January 1, 2012, should be amended.

3. Beginning in 2017 and every five years thereafter, the Department will review the state of technology and emission rates and determine whether the emission limits defined in Tables 2 and 3 should be amended.
4. The Department may at other times review the state of technology and emission rates to determine whether the emission limits defined in Table 3 should be amended.

Table 2
Emission Limitations – Engines

Installation Date	OXIDES OF NITROGEN	Particulate Matter **(**Liquid Fuel *Only*)	Carbon Monoxide	Carbon Dioxide
[SIX MONTHS AFTER THE EFFECTIVE DATE]	0.6 lbs/MWh	≤ 1MW 0.7 lbs/MWh; ≥ 1 MW 0.09 lbs/MW	10 lbs/MWh	1900 lbs/MWh
On and after 1/1/08	0.3 lbs/MWh	0.07 lbs/MWh	2 lbs/MWh	1900 lbs/MWh
On and after 1/1/12	0.15 lbs/MWh	0.03 lbs/MWh	1 lb/MWh	1650 lbs/MWh

Table 3

Emission Limitations – Turbines

Rated Power Output	Oxides of Nitrogen	Ammonia	Particulate Matter	Carbon Monoxide
Less than 1 MW	0.47 lbs/MW-hr Gas	N/A	N/A	0.47 lbs/MW-hr Gas
1 to 10 MW	0.14 lbs/MW-hr Gas 0.34 lbs/MW-hr Oil	2.0 ppm	0.10 lbs/MW-hr Oil	0.09 lbs/MW-hr Gas 0.18 lbs/MW-hr Oil

(c) Fuel Requirements No person shall accept delivery for burning in any engine or turbine subject to 310 CMR 7.26(43) diesel fuel that does not meet the applicable U.S. Environmental Protection Agency sulfur limits for fuel pursuant to 40 CFR 80.29, 40 CFR 80.500(a), and 40 CFR 80.520(a) and (b) as in effect January 18, 2001.

(d) Operational Requirements

1. Operation and Maintenance The engine(s) and turbine(s) shall be operated and maintained in accordance with the manufacturers recommended operating and maintenance procedures.

2. Sound Engines, turbines and associated equipment shall be constructed, located, operated and maintained in a manner to comply with the requirements of 310 CMR 7.10 Noise.

3. Stack Height and Emission Dispersion
   a. All engines or turbines shall utilize an exhaust stack that discharges so as to not cause a condition of air pollution (310 CMR 7.01(1)). Exhaust stacks shall be configured to discharge the combustion gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted combustion gases, including but limited to, rain protection devices "shanty caps" and "egg beaters". Any emission impacts exhaust stacks upon sensitive receptors such as people, windows and doors that open, and building fresh air intakes shall be minimized by employing good air pollution control engineering practices. Such practices include without limitation:
      i. Avoiding locations that may be subject to downwash of the exhaust; and
      ii. installing stack(s) of sufficient height in locations that will prevent and minimize flue gas impacts upon sensitive receptors.
   b. Engines and turbines burning liquid fuel and with a rated power output of less than 300 kw shall be equipped with an exhaust stack with a minimum stack height of five feet above the rooftop or the engine or turbine enclosure, whichever is lower.
   c. Engines and turbines with a rated power output equal to or greater than 300kw, but less than one MW shall be equipped with an exhaust stack with a minimum stack height of ten feet above the rooftop or the engine or turbine enclosure, whichever is lower.
   d. Engines and turbines with a rated power output equal to or greater than one MW shall be equipped with a stack with a minimum stack height of 1.5 times the height of the building on which the stack is located. If the stack is lower than 1.5 times the building height or lower than the height of a structure that is within 5L of the stack (5L being five times the lesser of the height or maximum projected width of the structure), an EPA Guideline air quality model shall be run to document that the operation of the applicable engine or turbine will not cause an exceedance of any National Ambient Air Quality Standard.

4. Visible Emissions Engines and turbines must comply with all the requirements of 310 CMR 7.06(1) (a) & (b).

(e) Emission Certification, Monitoring and Testing

1.Certification No person shall cause, suffer, allow, or permit the installation and subsequent operation of an engine or turbine unless said person has certified compliance with the requirements of 310 CMR 7.26(43) in its entirety in accordance with the provisions of 310 CMR 70.00-Environment Results Program Certification. Certification shall include a statement from the manufacturer that the installed engine or turbine is capable of complying with the emission limitations for the lesser of 15,000 hours of operation or the first three years of operation.

2.Monitoring The Department may require emission or other monitoring to assure compliance with the requirements of 310 CMR 7.26(43).

3.Testing

a. Tests to certify compliance with emission limitations must be performed in accordance with EPA reference Methods, California Air Resources Board Methods, or equivalent methods as approved by the Department.

b. Particulate matter, from liquid fuel reciprocating engines, shall be determined using Method 8178 of the International Organization for Standardization.

c. Testing shall be conducted at full design load of the engine or turbine.

d. The Department may require emission or other testing to assure compliance with the emission limitations or fuel requirements.

(f) Record Keeping and Reporting The owner or operator shall maintain records described in 310 CMR 7.26(43)(f)1. through 4. Such records shall be made available to the Department or its designee upon request. The owner or operator shall certify that records are accurate and true in accordance with 310 CMR 70.03 Compliance Certification Requirements.

1. Information on equipment type, make and model, and maximum power output; and
2. A monthly log of hours of operation, gallons of fuel used, fuel type and heating value, and a monthly calculation of the total hours operated and gallons of fuel used in the previous 12 months shall be kept on site; and
3. Purchase orders, invoices, and other documents to support information in the monthly log.
4. Copies of certificates and related documents from the manufacturer.

(44) Change in Operational Status An owner or operator of an engine or turbine subject to the requirements of 310 CMR 7.26(42) Emergency Engines and Turbines may elect to remove the hours of operation restriction to operate in a non-emergency by complying with either of the two following methods.

(a) Submit an application for approval and receive approval under the requirements of 310 CMR 7.02(5); or

(b) Certify to the Department that the engine or turbine meets all applicable requirements of 310 CMR 7.26(43).

Add ((45)-(49) RESERVED)

310 CMR 70.00 Environmental Results Program Certification

310 CMR 70.02: Definitions

Add to the definition of **Environmental Results Facility or ERP Facility** the following:

(f) an engine or combustion turbine subject to 310 CMR 7.26(40) through (44).