



DIESEL EMISSION CONTROLS IN CONSTRUCTION PROJECTS

MODEL CONTRACT SPECIFICATION

December 2010

Introduction

The model contract specification outlined below offers guidance to private institutions and public entities interested in addressing pollution from construction sources through future construction contracts. The goal of this model document is to encourage institutions and agencies to adopt contract language which will help to reduce the impact of diesel emissions from construction equipment and promote the widespread use of emission controls in the construction sector.

The **Northeast Diesel Collaborative (NEDC)**, a regionally coordinated initiative to reduce diesel emissions, improve public health, and promote clean diesel technology, includes the NEDC Construction Workgroup. The Workgroup - comprised of a diverse set of stakeholders representing government agencies, private sector firms, trade organizations and others involved in construction related activities - works to advance cost-effective strategies to improve air quality and reduce diesel emissions from construction projects in the northeast states and Caribbean territories. The NEDC Construction Workgroup recently reached consensus in revising the following model contract specification – originally established in 2008 - to make them more practical and user friendly, with the goal of broadening their use and ultimately help in reaching the goal of improving air quality through reduction of diesel emissions from construction equipment.

The contract specification below provides a comprehensive model that is technically sound and grounded in field experience. It addresses not only the level of emission control, but also key considerations such as idling, exemptions, and compliance. It incorporates improvements in retrofit technology already underway to meet both market demand and tighter federal standards for new engines.

This model specification recommends that institutions and agencies (“developer” in the text below) undertaking large construction projects:

- **Require the highest level of emission control available**
- **Include the widest range of diesel onroad vehicles, nonroad equipment, and generators**
- **Implement and/or enforce idle-reduction policies**
- **Require the use of ultra-low sulfur diesel fuel**

NEDC acknowledges that existing contract requirements, policy adoption processes, procurement rules, and financial resources differ considerably among the institutions, municipalities, and state agencies in the region and therefore affect options for developing or amending a retrofit program. For example, those with successful clean construction initiatives may revise or expand them only through a stakeholder process. In creating a new program, some may need to adopt a narrower scope (e.g., picking a higher project dollar threshold or initially targeting particular horsepower ranges) while others opt for broader or more aggressive coverage (e.g., requiring retrofits in all projects regardless of their budget). The model contract specification provides a robust standard and an implementation

framework that can be adapted for consistency with established contract specifications or protocols and does not preclude or override existing, state-specific models.

NEDC recommends that contracts for all construction projects require the diesel control measures outlined in the following pages. As the public health risks from exposure to diesel exhaust are of paramount concern, institutions, municipalities, agencies and private contractors that want a phased adoption of contract requirements could focus *initially* on projects including, but not limited to, those located (1) in urban areas, (2) within 500 feet of a school, hospital, daycare facility, elderly housing, convalescent facility, or similar facility, (3) in poor air quality areas, (4) in densely populated areas or (5) in any other areas which receive a disproportionate quantity of air pollution from diesel fleets.

The NEDC Steering Committee wishes to thank the representatives from the emission control manufacturers, environmental organizations, private companies, construction industry, state agencies, and U.S. EPA who contributed to the development of this document, either by fully participating in the work of the task force for the initial development of the model, being an active member of NEDC's Construction Workgroup which has successfully revised and refined the model or by offering valuable perspective on key elements in any other capacity throughout this process.

MODEL CONTRACT SPECIFICATION

1. Diesel Emission Control Technology¹

a. Diesel Onroad Vehicles

All diesel onroad vehicles on site for more than 10 total days must have either (1) engines that meet U.S. Environmental Protection Agency (EPA) 2007 onroad emissions standards or (2) emission control technology verified by EPA or the California Air Resources Board (CARB) to reduce PM emissions by a minimum of 85%.²

b. Diesel Generators

- i. All diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.

c. Diesel Nonroad Construction Equipment

- i. All nonroad diesel engines on site must be Tier 2 or higher. Tier 0 and Tier 1 engines³ are not allowed on site.
 - ii. All diesel nonroad construction equipment on site for more than 10 total days must have either (1) engines meeting EPA Tier 4 nonroad emission standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85% for engines 50hp and greater and by a minimum of 20% for engines less than 50hp.
- d. Upon confirming that the diesel vehicle, construction equipment, or generator has either an engine meeting Tier 4 non road emissions standards or emission control technology, as specified above, installed and functioning, the developer will issue a compliance sticker. All diesel vehicles, construction equipment, and generators on site shall display the compliance sticker in a visible, external location as designated by the developer.
- e. Emission control technology shall be operated, maintained, and serviced as recommended by the emission control technology manufacturer.

¹ Diesel emission control technology requirements apply to all equipment onsite powered by diesel engines, whether owned, leased or rented by the contractor.

² In all instances “verified” means verified for use with the specific onroad, nonroad, or generator engine. For EPA’s list of verified technology: <http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm>. For CARB’s list of verified technology: <http://www.arb.ca.gov/diesel/verdev/verifiedtechnologies/vt.htm>.

³ Machines with engines which have been repowered by Tier 2 engines, or engines upgraded from Tier 0 or 1 to Tier 2 using original equipment manufacturers approved conversion kit and certified by the original equipment manufacturer to Tier 2 standard performance are acceptable.

- f. All diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a biodiesel blend⁴ approved by the original engine manufacturer with sulfur content of 15 ppm or less.

2. Idling Requirements

- a. During periods of inactivity, idling of diesel onroad vehicles and nonroad equipment shall be minimized and shall not exceed the time allowed under state and local laws.⁵ In the absence of state or local idling regulations, idling shall not exceed three minutes in any sixty-minute period.
- b. Exemptions, if any, from state or local idling laws are specified by those laws, which shall be enforced on site. In locations without prevailing state or local idling regulations, idling for more than three minutes over a sixty-minute period is permitted only under the following circumstances:
 - i. When an onroad diesel vehicle or nonroad construction equipment is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control;
 - ii. To bring the onroad diesel vehicle, nonroad construction equipment, or generator to the manufacturer's recommended operating temperature;
 - iii. When there are regulations requiring temperature control for driver or passenger comfort and there are no auxiliary power sources available to provide temperature control;
 - iv. When it is necessary to operate auxiliary equipment that is located in or on the diesel vehicle or construction equipment, to accomplish the intended use of the vehicle or equipment (for example, cranes and cement mixers);
 - v. When the onroad diesel vehicle, nonroad construction equipment, or generator is being repaired, if idling is necessary for such repair; and/or
 - vi. When the onroad diesel vehicle, nonroad construction equipment, or generator is queued for inspection, if idling is necessary for such inspection.

3. Exemptions⁶

- i. Onroad diesel vehicles, nonroad construction equipment, and generators on site for 10 working days or less over the life of the project need not install emission control technology. This equipment must be included on

⁴ Biodiesel blends are only to be used in conjunction with the technologies which have been verified for use with biodiesel blends and are subject to the following requirements
<http://www.arb.ca.gov/diesel/verdev/reg/biodieselcompliance.pdf>.

⁵ Idling regulations for the Northeast states are available on the NEDC website at www.northeastdiesel.org.

⁶ Exemptions in this section apply only to emission control technology requirements and do not in any way exempt the contractor from meeting the requirement that all engines onsite must be Tier 2 or higher as specified in section 1.c.

the equipment list submitted by the contractor and approved by the developer.

- ii. Until December 31, 2012, if the contractor can prove to the developer's satisfaction that a piece of nonroad construction equipment planned for use on site had been retrofitted with emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 20% prior to the award of this contract and provided that the emission control technology is in working order and within its useful life, the contractor need not install additional or alternative emission control technology on the specified piece of nonroad construction equipment.
- iii. If the contractor can prove to the developer's satisfaction that for a particular class of onroad diesel vehicle, nonroad construction equipment, or generator, (1) no alternative equipment with a Tier 4 engine is available, (2) it is not technically feasible to meet the control level specified above with a verified device, or (3) installing the control device would create a safety hazard or impaired visibility for the operator, then the contractor may, with the developer's written approval, drop down to a lower level of control.
- iv. The developer's representative may create an exemption when there is a compelling emergency need to use diesel vehicles or engines that do not meet the contract conditions for emission controls. An example would be the need for rescue vehicles or other equipment to prevent or remedy harm to human beings or nearby property. Meeting contract deadlines, failure to rent equipment in a timely manner, planned unavailability, or lack of advance planning are not considered compelling emergencies.
- v. The developer may provide an exemption lasting no more than 30 days to a contractor, if the contractor can prove with valid documentation and to the developer's satisfaction that the appropriate emission control equipment has been ordered in a timely manner after the bid was awarded, but has yet to be installed due to delays attributable to the equipment manufacturer and beyond the control of the contractor. The contractor must install the retrofit as soon as practicable once it has been delivered, and shall submit proof thereof when installation is complete. Provided, however, that such exemption shall not be available to a contractor who already owns an equivalent piece of equipment that meets the engine requirements for the project, as the contractor may use that piece of equipment.

4. Additional Diesel Requirements

- a. Construction shall not proceed until the contractor submits a certified list of all diesel vehicles, construction equipment, and generators to be used on site. The list shall include the following⁷:
 - i. Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment.
 - ii. Equipment type, equipment manufacturer, equipment serial number, engine manufacturer, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation.
 - iii. For the emission control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date and hour-meter reading on installation date.
 - iv. The Certification Statement⁸ signed and printed on the contractor's letterhead.
- b. If the contractor subsequently needs to bring on site equipment not on the list, the contractor shall submit written notification within 24 hours that attests the equipment complies with all contract conditions and provide information asked for in 4(a).
- c. All diesel equipment shall comply with all pertinent local, state, and federal regulations relative to exhaust emission controls and safety.
- d. The contractor shall establish generator sites and truck-staging zones for vehicles waiting to load or unload material on site. Such zones shall be located where diesel emissions have the least impact on abutters, the general public, and especially sensitive receptors such as hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.

5. Reporting

- a. The contractor shall submit to the developer's representative a monthly report that, for each onroad diesel vehicle, nonroad construction equipment, or generator onsite, includes:
 - i. Hour-meter readings on arrival on-site, the first and last day of every month, and on off-site date
 - ii. Any problems with the equipment or emission controls.
 - iii. Certified copies of fuel deliveries for the time period that identify:
 1. Source of supply
 2. Quantity of fuel
 3. Quality of fuel, including sulfur content (percent by weight).

⁷ USEPA's Construction Fleet Inventory Guide is a useful tool in identifying the information required: <http://www.epa.gov/cleandiesel/documents/420b10025.pdf>.

⁸ The NEDC Model Certification Statement can be found in Appendix A.

6. Compliance

All onroad diesel vehicles, nonroad construction equipment, and generators must be compliant with these provisions whenever they are present on the project site. The contractor's compliance with this notice shall not be grounds for claims as outlined in Section _____. *[developer inserts reference to appropriate section in its standard contract]*

7. Non-Compliance

- a. If any onroad diesel vehicle, nonroad construction equipment, or generator is found to be in non-compliance with the contract terms, the equipment will be immediately removed from the job site and *[developer inserts penalties consistent with others specified in contract]*.
- b. Once the contractor has brought previously non-compliant machinery into compliance, the developer's representative shall promptly issue the contractor a written acknowledgment of compliance.

8. Costs *[developer chooses one of the following options]*

[Option 1]

- a. All costs associated with the acquisition and installation of emission control technology shall be fully funded by the developer, provided that the contractor submits documentation, as outlined in Section 4(a) and Section 5(a) above, provided that that the technology was installed **specifically for this project** and certifying that the expenditure for installation was not previously reimbursed by any public agency or public contract.
- b. Retrofits installed with the developer's funds from this project, shall remain on the onroad vehicle, nonroad construction equipment, or generator for the useful life of the emission control device or the machine.

[Option 2]

- a. Any and all costs associated with the acquisition and installation of emission control technology is not to be included in the total project cost and shall not be considered a factor in the competitive bidding process.
- b. All costs associated with the acquisition and installation of emission control technology shall be fully funded by the developer, provided that the contractor submits documentation, as outlined in Section 4(a) and Section 5(a) above, provided that that the technology was installed **specifically for this project** and certifying that the expenditure for installation was not previously reimbursed by any public agency or public contract.
- c. Retrofits installed with the developer's funds from this project, shall remain on the onroad vehicle, nonroad construction equipment, or generator for the useful life of the emission control device or the machine.

[Option 3]

All costs associated with the acquisition and installation of emission control technology are considered incidental to the cost of the project; no additional compensation will be provided.

Appendix A:

Model Certification Statement

**Northeast Diesel Collaborative Clean Construction Workgroup
MODEL CERTIFICATION STATEMENT**

I hereby certify:

1. That the vehicle(s) identified in the attached spreadsheet that will be retrofitted are essential to the construction activities I have agreed to perform under contract with Organization/Company Name.
2. That I am fully aware that some Authorized Installers require the vehicle(s) to be retrofitted be brought to their shop to install the approved retrofits, and that this cost is not covered by either this program or the Authorized Installer, but instead is the responsibility of the vehicle owner(s).
3. That the retrofit device(s) will remain on the vehicle, and in working order, for a minimum of 3 years after installation. [*Note: This does not apply to rental retrofit device(s)*]
4. That any discrepancy to the above will be reported to Organization/ Company Name point of contact within 10 business days.
5. That all of the above conditions will be followed. Any deviation will be considered a breach in the agreement.

I understand that my vehicle(s) are subject to random and scheduled inspections to verify that the device(s) are installed and operating properly.

APPLICANT CERTIFICATION

I certify to the best of my knowledge that I will comply with the items listed above and that I am a legally authorized signatory or designee for the applicant.

Signature Title

(Print Name) Date

Company Name Phone Number

Company Address

Please return the completed application to:

Organization/Company Name
Organization/Company Address
Attn: Organization/Company Contact Name
Organization/Company Contact Email