



NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Diesel Retrofit Program
Guidance Document
For
Diesel-Powered School Buses

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A. Purpose

This document provides general guidance to assist school bus owners in complying with the requirements established in the Diesel Retrofit Program rules at N.J.A.C. 7:27-32 et seq. This guidance document describes the basic steps to ensure compliance with the regulatory requirements such as the necessary information and forms to be submitted to the Department of Environmental Protection (Department), submittal timeframes, recordkeeping and reporting, applicable technology, and vehicle inspection requirements.

B. Overview

The Diesel Retrofit Law (N.J.S.A. 26:2C-8.26) was signed in September 2005 by then Governor Richard Codey to protect New Jersey residents from the harmful effects of diesel particulate pollution. Studies have shown that exposure to diesel exhaust can aggravate asthma, contribute to cardiopulmonary distress and result in premature death. The law targets diesel-powered on-road vehicles, such as school buses, and off-road equipment that regularly expose the public to diesel exhaust. Specifically, all regulated diesel-powered school buses (as defined on page 4 of this document) must have closed crankcase ventilation systems (CCVSs) installed pursuant to these regulations.

A CCVS is designed to capture and filter diesel engine crankcase emissions and redirect those emissions into the combustion process. CCVSs have been shown to prevent the intrusion of diesel emissions into the cabins of school buses and thus reduce the exposure of children to the diesel particulate pollution. The Department with Rowan University is conducting a study of the effects of tailpipe emissions on the in-cabin air quality of school buses. Based on the results of the study, the Department will determine if tailpipe retrofits on school buses are needed to further reduce the in-cabin levels of diesel particulate pollution. If necessary the Department may issue new rules to require tailpipe retrofits on school buses.

The Diesel Retrofit Law provides funding for the installation and purchase costs associated with the CCVSs on diesel-powered school buses. In accordance with the Diesel Retrofit Program rules at N.J.A.C. 7:27-32.24, the authorized installer of the device will be required to incur these costs and seek reimbursement from the Department after the installation is complete. Therefore there are no initial out-of-pocket costs associated with the device for the vehicle owner. The CCVS must be installed by an authorized installer listed on a State Contract specifically issued for the purposes of the Diesel Retrofit Program rules.

The Department certified the availability of funds for the reimbursement of costs associated with the installation of CCVS on all regulated school buses. This certification was published in the July 7, 2008 New Jersey Register. Owners of regulated school buses have two years from the date of this notice to complete the installation of the closed crankcase ventilation systems on their regulated school buses. This deadline is particularly critical since, in accordance with N.J.A.C. 7:27-32.4(b), no school bus may transport children after this date without a CCVS. However, there may be cases where it may not be feasible to install a CCVS on certain school buses or where the bus is exempt from installing the device. Therefore, the first step a regulated school bus owner must take is to assess his or her fleet with the applicable requirements of the Diesel Retrofit Rule (N.J.A.C. 7:27-32).

C. Steps to Compliance with the Diesel Retrofit Program Rule N.J.A.C. 7:27-32

The complete rule text can be obtained online at <http://www.state.nj.us/dep/aqm/rules.html>. These rules include requirements for submitting vehicle information, identifying the retrofits to be installed and providing associated cost estimates, installation deadlines, recordkeeping and reporting, and vehicle inspection.

1) School Bus Fleet Assessment

To comply with the Diesel Retrofit Program Rule a school bus owner must first determine which vehicles in the fleet are regulated (see following definition of a “regulated school bus”). The regulated status, the scheduled retirement date and the model year of the vehicle’s engine define which vehicles in a fleet are required to install retrofit devices.

Pursuant to N.J.A.C. 7:27-32.1, the definition of “regulated school bus” is:

- An in-service school bus that is originally designed to carry 10 or more passengers;
- Powered by a diesel engine;
- Owned by a school district, nonpublic school, or school bus contractor who has entered into a contract with a school district or a nonpublic school to transport children to and from a primary or secondary school.

Generally, diesel-powered vehicles with “S1” or “S2” license plates that carry at least 10 passengers are considered regulated school buses.

Any regulated school bus that meets the following criteria is not required to install a CCVS device:

School buses that meet the following criteria are not required to be retrofit:

- In accordance with N.J.A.C. 7:27-32.3(c), the provisions of N.J.A.C. 7:27-32 et seq. do not apply to a regulated school bus with a 2007 model year or newer engine that is certified by the U.S. Environmental Protection Agency (USEPA) or the California Air Resources Board (CARB) to meet a particulate emissions standard of 0.01 grams per brake-horsepower hour. The Diesel Retrofit Rule does not apply to these buses and they should not to be included in either the BART or CCVS Inventory/Cost Estimate form.
- Regulated school buses scheduled for retirement before July 7, 2010 are not required to be retrofit; pursuant to N.J.A.C. 7:27-32.4(a). The retirement date for school buses is determined at N.J.S.A. 39:3B-5.1 and 5.2 of the Motor Vehicle Code. Depending on certain school bus characteristics, the vehicle must be retired from student transport either 12 or 20 years after the vehicle model year or at the end of the school year, whichever is later.

School Buses Exempt from Retrofitting due to Retirement		
Bus Type	Mandatory Retirement Regulation	Chassis Years exempt from retrofits
12-Year retirement	N.J.S.A. 39:3B-5.1	1998 and older
20-Year retirement	N.J.S.A. 39:3B-5.2	1990 and older

2) Selecting a CCVS

Before selecting a CCVS, it is important to understand the general operation of the device. The CCVS is designed to capture and filter diesel engine crankcase emissions and redirect those emissions into the combustion process. Open or partially open systems are not permitted. Most CCVS devices have a filter located between the crankcase vent and the engine air intake system to allow for the removal of impurities and any engine oil that may be in the crankcase fumes. The residual liquids are typically returned to the oil pan or a collection device. Some regular maintenance of the system is required to ensure optimal operation of the device. An example of maintenance includes routine replacement of the filter or disposal of the collected engine oil.

Pursuant to N.J.A.C. 7:27-32.3(d)1, each retrofit must be installed by an authorized installer that is listed on the State Contract awarded specifically for the purposes of the Diesel Retrofit Law. A copy of the contract and the authorized installers can be found at <http://www.state.nj.us/treasury/purchase/boa/contracts/t2541.shtml>.

What to Consider

To assess the available CCVS for the regulated school buses within one's fleet, the owner can conduct some general research to ascertain the appropriate CCVS for their buses. This research can include obtaining information from the authorized installers' websites for the CCVS products offered or contacting authorized installers directly. Some criteria for determining compatible CCVS device for a school bus may include engine brake horsepower, blow-by volume, or available space within engine compartment. The regulated school bus owner may want to consider the costs associated with the required maintenance needs as these costs are not reimbursable. Other criteria for consideration may include the general availability of replacement filters, and any associated maintenance.

Once a CCVS device is chosen for each school bus, the owner must obtain a cost estimate from an authorized installer of each selected CCVS for each school bus. Please note that more than one authorized installer may need to be used to ensure each regulated school bus in the fleet has a CCVS installed. Therefore, if one authorized installer does not have a suitable CCVS device for a particular school bus, the school bus owner must determine if another CCVS is feasible by contacting other available authorized installers.

Exemption Requests

The Department is aware that there may be situations where it is not technically feasible to install a CCVS device. The regulated school bus owner may request an exemption for a specific vehicle from the Department pursuant to N.J.A.C. 7:27-32.4(c). If after assessing the CCVS devices on the state contract, the school bus owner determines the school bus is eligible for an exemption, the owner, with input from the installers, must provide a detailed description of the problem with supporting documentation. The exemption request's supporting documentation, should consist of; letters justifying the exemption from CCVS installation from at least two authorized installers with photographs, and technical reports. If the Department determines that the owner's documentation does not support the exemption, the Department will issue a final determination requiring the installation of the CCVS.

Please note that poor engine condition due to inadequate maintenance does not constitute a reason for an exemption. The school bus owner must, at their own cost, repair the school bus to a condition where the CCVS can be successfully installed and effectively operated.

3) Completing and Submitting the Cost Estimate-CCVS Form

When the school bus owner has determined how each school bus will comply with the Diesel Retrofit Program rules, the owner must electronically complete and submit the Cost Estimate-CCVS Form to the Department for review and approval before any installation can occur.

The Cost Estimate-CCVS Form and complete instructions are available from the Department's website at www.stopthesoot.org. The Department requires that the regulated vehicle owner include a listing of the basic information identifying each regulated school bus in the fleet. The CCVS installation cost estimate data such as the selected CCVS devices and the cost estimate for each CCVS installation from the authorized installer is required pursuant to N.J.A.C. 7:27-32.4(d) and must be supplied on the submitted form. The Department requires the submittal of the Cost Estimate-CCVS Form through online services at the New Jersey Department of Environmental Protection's Online Business Portal at <http://www.nj.gov/dep/online/>.

Regulated school bus owners may already manage some of this information on a similar spreadsheet. The Cost Estimate-CCVS Form was specifically designed to accommodate the copying and pasting of data from multiple versions of Microsoft Excel, including Excel '97, 2000 and 2003. Additionally, some fleet management software is designed to export to spreadsheets such as Excel. If you use fleet management software, consider exporting data to a blank copy of an excel spreadsheet to prepare it for pasting into the Cost Estimate-CCVS spreadsheet. Instructions for the use of Excel 2007 are also available at www.stopthesoot.org.

When completing the cost estimate form, please note the following:

- i) A school bus that has an existing CCVS installed should indicate "exempt" as the "Compliance Method" on the Cost Estimate-CCVS Form and provide documentation demonstrating the existing CCVS.
- ii) If it is not possible to install a CCVS on the regulated school bus due to mechanical incompatibility, the owner must submit an exemption request to the Department for approval, and provide hardcopies of the supporting documentation. Approval of an exemption is subject to the Department's review.
- iii) A school bus with a retirement date on or before the installation deadline should indicate "retirement" as the Compliance method on the form, as well as, indicate the actual retirement date in the area provided.
- iv) In accordance with N.J.A.C. 7:27-32.3(c), the provisions of N.J.A.C. 7:27-32 *et seq.* do not apply to a regulated school bus with a 2007 or later model year engine that is certified by the U.S. Environmental Protection Agency (USEPA) or the California Air Resources Board (CARB) to meet a particulate emissions standard of 0.01 grams per brake-horsepower hour. The Diesel Retrofit Rule does not apply to these buses and they should not to be included in the CCVS Cost Estimate form.

Upon receipt of the Cost Estimate-CCVS Form the Department will conduct an administrative and technical review for completeness. An administrative review ensures that the required information is included in the submittal. A technical review by the Department includes, but is not limited to; ensuring the reasonableness of the cost estimates in comparison to the State Contract and other cost estimates submitted for like CCVS devices. Vehicle information such as VIN and license plate numbers are verified according to State records prior to CCVS installation approval. All final determinations will be made in writing by the Department. Once a vehicle has had its cost estimate approved, the owner may initiate the installation of the CCVS device. The Department will approve submittals on a vehicle-by-vehicle basis; while a particular vehicle's installation cost estimate may be rejected within a fleet, installation of CCVS devices on vehicles the fleet with approved cost estimates may occur..

For vehicles with rejected cost estimates, the Department will work with the school bus owner to resolve any deficiencies and determine a mutually acceptable alternative CCVS device. Reasons for rejecting cost estimates may include excessive labor charges or the inclusion of an authorized installer not on the state contract. If an agreeable resolution cannot be reached, the Department will make a final determination such as identifying a CCVS of reasonable cost.

4) Installation Process and Compliance Form

The Department's issuance of the approval letter of the submitted Cost Estimate-CCVS Form is the school bus owner's notice to begin the CCVS installation process. All CCVS installations must be performed by an authorized installer on a state contract for CCVS installations. All authorized installers must satisfy the warranty provisions at N.J.A.C. 7:27-32.9.

The owner will receive the approval letter indicating the buses approved for installation and also notifying the fleet owner of the availability of Compliance Forms for each approved school bus. The Compliance Form must be completed by the fleet owner and submitted to the Department within 5 business days of completion of the installation. The school bus Compliance Form is completed by noting the date that the CCVS installation was finished and certifying the form by signature. An example of the Compliance Form is included as Attachment 3 of this document. Submit the signed compliance forms to: NJ Department of Environmental Protection, Diesel Risk Reduction Program, 401 East State Street P.O. Box 418, Trenton, New Jersey 08625-0418. One Compliance Form must be completed for each regulated school bus within the fleet. A copy of the most updated Compliance Form is to be retained on the vehicle for the vehicle's lifetime.

Please note that there are two separate occasions when the school bus owner is responsible for submitting a copy of the Compliance Form to the Department in accordance with N.J.A.C. 7-27-20. The first instance occurs no later than 5 days after installation of the CCVS. The second submittal date is contingent on completion of the one-time compliance inspection as described in Section 6 of this document.

5) Reimbursement Process

In accordance with N.J.A.C. 7:27-32.24(b), an authorized installer of a CCVS device is responsible for incurring the costs associated with the purchase and installation associated with the device, and therefore, is responsible for seeking reimbursement of these costs. Likewise, N.J.A.C. 7:27-32.3(d) requires that any authorized installer wishing to seek reimbursement of these costs must be on a state contract specifically for such a purpose. Any public entity may also seek to be an authorized installer to perform installations on their fleet. In this instance, the public entity must have a grant agreement in place with the Department for reimbursing costs associated with complying with N.J.A.C. 7:27-32 et seq. See Section D for details on public entities performing self-installation of CCVS devices.

An authorized installer may seek reimbursement for the purchase and installation of a CCVS on a school bus once the installation is complete. The authorized installer must complete and submit to the Department a Reimbursement Application and provide proof of the purchase and completed work. The signed school bus Compliance Form indicating that the CCVS installation was completed is included as a portion of the support documentation.

The authorized installer on the State Contract will request reimbursement from the Department and provide information identifying the retrofitted vehicles associated with the invoice. The State Treasurer will directly reimburse the authorized installer through payment procedures established within the State Contract. Vehicle owners will not pay for the CCVS installation and therefore do not receive any reimbursement unless that entity is also an authorized installer and performs the CCVS installation pursuant to an agreement with the Department, using a CCVS obtained through the State contract.

6) One Time Compliance Inspection and Compliance Form

After the installation is completed, a one-time compliance inspection (OTCI) of the CCVS device on each school bus must be performed. The inspection of the CCVS installations must be done within one year of CCVS installation at a regularly scheduled in-terminal inspection by the Motor Vehicle Commission's (MVC) School Bus Inspection. A separate appointment does not need to be scheduled. The vehicle owner must present the compliance form to the MVC inspector and identify the corresponding vehicles. Upon the completion of the OTCI, the inspector will sign the compliance form and indicate whether the CCVS was observed.

In some cases, the inspector may be unable to visually inspect the CCVS retrofit and will indicate on the form that the CCVS was "Uninspectable." For example, in certain buses due to chassis configurations, the bus would need to be partially disassembled to view the CCVS. As dismantling a vehicle is outside the scope of the inspections, the inspector will indicate on the form that the bus is "Uninspectable" and then sign the form. An "Uninspectable" bus is deemed compliant with the OTCI requirements and no additional compliance inspections would be needed.

If the inspector determines that the installation does not meet the minimum standard requirements established at N.J.A.C. 7:27-32.5, he or she will not sign the form. Reasons for this may include unconnected hoses or oil residue found around the CCVS. If installation is not

acceptable, the owner must correct the problems and have the CCVS installation reinspected at the next semi-annual in-terminal inspection by the Motor Vehicle Commission's School Bus Inspection Unit.

Once the inspector has completed and certified the Compliance Form, the school bus owner must submit the updated compliance form to the Department within 30 days of the OTCI. A copy of the updated Compliance Form must be kept in the vehicle for which it was issued. The original updated compliance forms shall also be kept in one location at the owner's place of business.

D. A Special Case: Fleet Self-Installers

Public owners of school buses, such as State, County, or Municipal entities or political subdivisions thereof, may wish to perform their own CCVS installations and seek reimbursement for the associated labor costs. In this instance, the public entity must become an authorized installer as defined at N.J.A.C. 7:27-32.1 for each type of CCVS to be installed; as well have a written grant agreement with the Department specifically for reimbursement of costs associated with complying with N.J.A.C. 7:27-32. The CCVS device must be obtained from the State Contract, where the hardware costs are directly reimbursed through the contract. Self-installers must be authorized by the manufacturer of the CCVS device and are required to provide a warranty as set forth at N.J.A.C. 7:27-32.9 et seq. The State lacks authority to provide a reimbursement grant to a private owner outside of the State Contract mechanism.

E. Maintenance of CCVS

The owner is responsible for maintaining the CCVS device in accordance with the CCVS manufacturer's specifications. Typical maintenance includes periodic filter changes, checking all hose connections, and, in certain cases, proper disposal of used oil collected in drip bottles. Please note that the CCVS on any school bus may only be removed for testing and bus maintenance purposes. During these times that the CCVS device has been disconnected or is not properly functioning due to maintenance, the school bus cannot be used to transport children in accordance with N.J.A.C. 7:27-14.4(a)5. All closed crankcase filtering and venting equipment, whether original equipment or installed as part of this retrofit program, must be maintained and operational at all times.

F. Warranty

Under the Diesel Retrofit Program rules, all CCVS devices must be covered by a warranty from the manufacturer and the authorized installer for the following:

- 1) Full repair and replacement cost, including parts and labor if the CCVS contains defects in material or workmanship;
- 2) The cost to repair or replace engine components if the CCVS causes damage to the engine so as to return the engine to the condition it was in prior to the damage caused by the CCVS.

This warranty is required to be effective for a minimum period as shown in Table 1. The CCVS manufacturer and installer must provide to the school bus owner a manual that provides a detailed description of the warranty including any exclusion due to abuse, neglect, or improper maintenance.

Table 1-Warranty Periods

Engine Size & Vehicle Use (HP = Horsepower)	Minimum Warranty Period
70-170 HP; GVWR <19,500 pounds	Five years or 60,000 miles
170-250 HP; GVWR ≥19,500 pounds and ≤33,000 pounds	Five years or 100,000 miles
>250 HP; GVWR >33,000 pounds	Five years or 150,000 miles
>250 HP; GVWR >33,000 pounds; typically driven >100,000 miles per year, and; <300,000 miles on odometer at time of installation	Two years, unlimited mileage

G. Adding Vehicles to the Fleet

If a regulated school bus is added to the fleet at any time in the future, the vehicle will need to conform to the Diesel Retrofit Program Rules as described in this guidance document. If the school bus is obtained prior to the installation deadline, then the school bus owner must submit an application for the school bus(es) in question to the Department for the installation of CCVS devices.

Any regulated school bus obtained after the installation deadline has passed cannot be used to transport children without a CCVS installed. Therefore the owner of the school bus must follow the steps described in section C to determine the necessary compliance with the Diesel Retrofit Program rules. For example, the first step is to determine if Diesel Retrofit Program rules are applicable to the school bus in question. If the new school bus meets the definition of a “regulated school bus” but is equipped with a USEPA-certified 2007 or newer engine then this school bus is deemed in compliance with the regulations and no further action is needed by the owner. If the new school bus meets the definition and has 2006 or older engine, then the school bus owner must follow the procedures and submittal requirements pursuant to the Diesel Retrofit Program rules for installing a CCVS. This school bus cannot be used to transport children until the CCVS installation is completed.

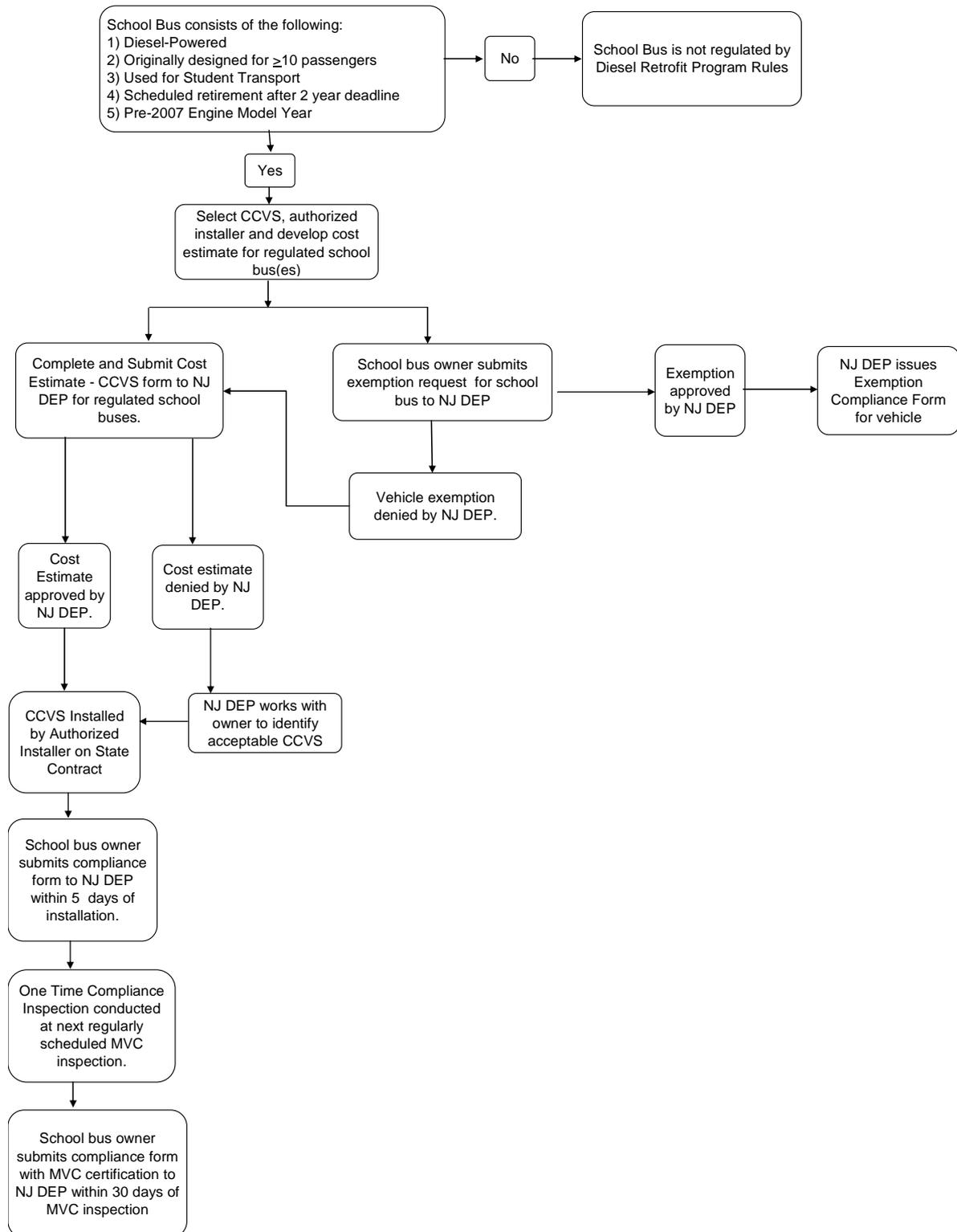
H. Penalties

Failure to comply with the Diesel Retrofit Program rules carries monetary penalties, many in the form of fines of up to \$1,000 for the first offense. A full list of penalties related to the Diesel Retrofit Program rules can be found at N.J.A.C. 7:27A-3.10.

I. Contact Information

Information related to the Diesel Retrofit Program such as forms, guidance documents, state contracts and links to related information can be found online at www.stopthesoot.org. You may also contact the Diesel Risk Reduction Program directly at (609) 292-7953 or by mail at Diesel Retrofit Program, 401 East State Street, P.O. Box 418, Trenton, NJ 08625-0418

Appendix 1: Process Flow Chart: Complying with the Diesel Retrofit Program – CCVS



Appendix 2 – Sample of On-Line Cost Estimate - CCVS Form

This is a sample of the Cost Estimate-CCVS Form for use through the online portal. Some of the required fields include: name of owner, address, telephone number, VIN, license plate number, model year of chassis, USEPA engine family, engine manufacturer, model year of engine, engine brake horse power, and information regarding the CCVS.

Version: 1.00.00 Alpha
Currently logged in: Jeremy Cunningham (JEREMY)

INVENTORY / COST ESTIMATE - CCVS

Note: The Applicant does not need to complete the all fields but must fill out all required designations and descriptions. Required fields are indicated by an asterisk (*).

Vehicle Equipment Number*	VIN / Serial Number*	Retrofit Make*	Retrofit Model*	Retrofit Manufacturer*
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Legend
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 Clickable Tab

Appendix 3 – Sample of Compliance Form

DERP0001

**NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIESEL RISK REDUCTION PROGRAM
COMPLIANCE FORM - CCVS**

Vehicle Owner: _____
 Telephone No.: _____
 Address: _____

School Bus Type: _____

VIN/Serial Number: _____

Vehicle License Plate State & Number: _____

Engine Manufacturer and Model Year: _____

EPA Engine Family: _____

CCVS Design Option: _____

CCVS Make & Model: _____

CCVS Cost (incl. Installation): _____

Installation Certification:
 I hereby certify that the required retrofit devices have been installed on the aforementioned vehicle on the following Date: _____

I certify under penalty of law that I believe the information provided in this document is true, accurate and complete. I am aware that there are significant civil and criminal penalties, including the possibility of fine or imprisonment or both, for submitting false, inaccurate or incomplete information.

 (Vehicle Owner)

 (Date)

Vehicle Inspector:
 I hereby certify that the retrofit requirement has been met in accordance with the inspection procedure at N.J.A.C. 7:27-32.21 unless the vehicle is uninspectable as indicated below. I believe that the submitted information is true, accurate and complete.

Uninspectable

 (Print Inspector Name)

 (Inspector Signature)

 (Inspector ID #)

 (Date)

NJDEP Diesel Risk Reduction General Contact – (609) 292-7953
 Before 8 am – (609) 530-4107