U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF INSPECTOR GENERAL

Catalyst for Improving the Environment

Evaluation Report

EPA Should Improve Guidance and Oversight to Ensure Effective Recovery Act-Funded Diesel Emissions Reduction Act Activities

Report No. 11-R-0141

March 1, 2011

Report Contributors: Rick Beusse
Chris Dunlap
James Hatfield
Erica Hauck
Geoff Pierce
Michael Young

Abbreviations

ARRA	American Recovery and Reinvestment Act of 2009
DEQ	Diesel Emissions Quantifier
DERA	Diesel Emissions Reductions Act
DOC	Diesel oxidation catalyst
EPA	U.S. Environmental Protection Agency
FTE	Full-time equivalent
FY	Fiscal year
NOx	Nitrogen oxides
OAR	Office of Air and Radiation
OIG	Office of Inspector General
OMB	Office of Management and Budget
OTAQ	Office of Transportation and Air Quality
PM 2.5	Fine particulate matter

Cover photos: *Left to right*: Verification of the installation of a diesel oxidation catalyst on an existing school bus; verification of a new (cleaner operating) replacement bus; and verification of a new diesel engine installed in a marine vessel. (EPA OIG photos taken during onsite visits to ARRA DERA projects.)

U.S. Environmental Protection Agency
Office of Inspector General

11-R-0141
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At a Glance

Catalyst for Improving the Environment

Why We Did This Review

The American Recovery and Reinvestment Act of 2009 (ARRA) provided the U.S. Environmental Protection Agency (EPA) with $300 million in grant funds for diesel emissions reduction activities. We conducted our review to determine whether these funds were effective in obtaining diesel retrofits and emissions reductions.

Background

In fiscal year 2008, EPA began funding projects through grants authorized by the Energy Policy Act of 2005, Title VII, Subtitle G, also known as the Diesel Emissions Reduction Act (DERA). Under this authority, EPA competitively awards grants for projects to achieve significant reductions in diesel emissions that improve air quality and protect public health. In addition, EPA awards grants to support state diesel emissions reduction programs.

For further information, contact our Office of Congressional, Public Affairs and Management at (202) 566-2391.

The full report is at:
www.epa.gov/oig/reports/2011/20110301-11-R-0141.pdf

EPA Should Improve Guidance and Oversight to Ensure Effective Recovery Act-Funded Diesel Emissions Reduction Act Activities

What We Found

Documentation of grant activities did not always demonstrate that funded DERA work achieved the desired emissions reductions. For two subgrants involving 13 completed engine replacements costing $343,753, supporting documentation did not clearly indicate the emissions certification level of the new engines. Also, for three subgrants to replace six vehicles costing $268,000 in DERA funds, the engine model year was different from the vehicle model year. These documentation errors could result in EPA overestimating emissions reductions for these projects. Additionally, two subgrantees installed unverified technology costing $15,900 on 15 buses. Further, quarterly reports included errors on specific project details that could affect the accuracy of EPA's final emissions reduction projections for these grants. Additional EPA guidance and oversight is needed to ensure that projects achieve the planned emissions reductions and that activities are reported accurately.

For the state DERA grant reviewed, two subgrantees replaced three vehicles costing $108,425 even though they planned to replace these vehicles in 2010. EPA grant conditions stipulate that grantees must use funds for early replacements, not to replace vehicles or engines that would have been replaced due to normal attrition. However, neither the grant conditions nor EPA guidance explains how to determine normal attrition. We believe these expenditures do not meet the intent of DERA, and that EPA should better define early replacement for its state grant awards.

The methodology used by prime grantees to report the number of jobs funded by ARRA appeared reasonable. However, for one grant the prime grantee did not adjust job hours to account for cost sharing by the subgrantee. As a result, the job hours reported as funded by ARRA were slightly overstated.

What We Recommend

We recommend that the Assistant Administrator for Air and Radiation require the Director, Office of Transportation and Air Quality, to (1) develop oversight procedures to provide reasonable assurance that grantee progress reports are accurate and that emissions certification levels are verified, (2) require that DERA grant and subgrant agreements specify the emissions certification level or year of new engines installed as part of vehicle replacement and engine repower projects, (3) issue guidance clearly defining eligible costs for early replacements of vehicles and engines for state grants, and (4) recoup unsupported expenditures of funds. The Office of Air and Radiation agreed with our recommendations and is taking actions to implement them.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

March 1, 2011

MEMORANDUM

SUBJECT: EPA Should Improve Guidance and Oversight to Ensure Effective Recovery Act-Funded Diesel Emissions Reduction Act Activities
Report No. 11-R-0141

FROM: Arthur A. Elkins, Jr.
Inspector General

TO: Gina McCarthy
Assistant Administrator for Air and Radiation

This is our report on the subject evaluation conducted by the Office of Inspector General (OIG) of the U.S. Environmental Protection Agency (EPA). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. This report represents the opinion of the OIG and does not necessarily represent the final EPA position. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The estimated direct labor and travel costs for this report are $358,741.

Action Required

In response to the draft report, the Office of Air and Radiation provided a corrective action plan on January 14, 2011, that sufficiently addressed all recommendations. We believe that the Office of Air and Radiation's proposed, ongoing, and completed actions for those recommendations meet the intent of these recommendations, and we are closing all recommendations in our tracking system upon issuance of this report. No further response is required for those recommendations. The Office of Air and Radiation needs to track these closed recommendations to completion in the Agency's tracking system.

We have no objections to the further release of this report to the public. This report will be available at http://www.epa.gov/oig.

If you or your staff have any questions regarding this report, please contact Wade Najjum, Assistant Inspector General for Program Evaluation, at (202) 566-0832 or najjum.wade@epa.gov; or Rick Beusse at (919) 541-5747 or beusse.rick@epa.gov.

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Introduction

Purpose

Under the American Recovery and Reinvestment Act of 2009 (ARRA), Congress appropriated $300 million to the U.S. Environmental Protection Agency (EPA) to award as grants to states, local governments, and nonprofit organizations to reduce emissions from diesel engines. We conducted this evaluation to determine whether selected ARRA grants were effective in obtaining diesel retrofits and the intended diesel emissions reductions. Specifically, we addressed the following objectives:

- Were claimed project activities and emissions reductions accurate?
- Were funds used to retrofit or replace engines that would have been scrapped or retrofitted anyway?
- Is the methodology used to report the number of jobs created/saved reasonable?

Background

Diesel engines power a wide variety of vehicles and equipment, such as heavy-duty trucks and buses, nonroad agricultural and industrial equipment, locomotives, and marine vessels. Although EPA has issued a number of standards over the past decade to control emissions from new diesel engines,[1] older engines continue to emit significant amounts of pollutants such as nitrogen oxides (NOx), fine particulate matter (PM 2.5), and cancer-causing air toxics such as benzene.[2] NOx contributes to ozone, a major component of smog and a health risk to many Americans, and PM 2.5 has been linked to heart disease, respiratory ailments, and premature death. In addition, EPA has concluded that diesel exhaust is a likely human carcinogen that can cause lung cancer.

Reducing emissions from diesel engines is essential to improving air quality across the nation. In 2008, over half of the U.S. population lived in areas that exceeded air quality standards for ozone and/or PM 2.5, pollution problems to which diesel engines contribute significantly. Because diesel engines have a long useful life—often up to 20 or 30 years—millions of diesel engines built prior to the more stringent emission standards will remain in use for years to come. EPA estimates that engines built prior to 1990 are up to 60 times dirtier than new engines.

[1] These standards include the 2001 heavy-duty highway diesel engine rule, the 2004 nonroad diesel engine rule, the 2008 locomotive and marine diesel engine rule, and the 2009 Category 3 marine diesel engine rule.
[2] Long-term exposure to high levels of benzene in the air can cause leukemia, particularly acute myelogenous leukemia, a cancer of the bloodforming organs. EPA has determined that benzene is carcinogenic to humans.

In 2005, Congress passed the Energy Policy Act, of which Title VII, Subtitle G established a program commonly referred to as the Diesel Emissions Reduction Act (DERA) program. Under DERA, EPA provides grants and loans to states, local governments, and nonprofit organizations, particularly in areas with poor air quality, to reduce diesel emissions through various emissions reduction strategies. These reduction strategies include retrofitting older engines with emission control devices; repowering or replacing older engines with newer, cleaner engines; reducing engine idling; and switching to cleaner alternative fuels. Congress first appropriated funds for DERA in fiscal year (FY) 2008. In that year, EPA awarded approximately $49 million in grants for diesel reduction programs.

DERA Grants Funded Under the Recovery Act

Congress appropriated $300 million[3] for EPA to award as ARRA DERA grants and loans in FY 2009,[4] approximately 6 times the amount of DERA funding in FY 2008. In addition to the environmental goals of DERA—to reduce diesel emissions and improve air quality—the grants awarded with ARRA funds were also intended to promote economic recovery and create or retain jobs. EPA was to consider these economic factors in awarding competitive grants and fund projects that could be undertaken quickly. Table 1 shows how EPA allocated the FY 2009 ARRA funds among four DERA programs.

Table 1: FY 2009 DERA grants funded by the Recovery Act

DERA program	Program description	Amount allocated ($ in millions)[a]	Number of grants awarded
National Clean Diesel Funding Assistance Program	Grants awarded competitively to states, local agencies, and nonprofit organizations to reduce diesel emissions through verified technologies.	$156	90
State Clean Diesel Program	Grants allotted to states on a noncompetitive basis to fund state diesel emissions reduction programs.	88	51
SmartWay Clean Diesel Finance Program	Grants awarded competitively to state, local, private, and nonprofit entities to establish innovative finance programs that help fleets reduce diesel emissions.	30	5
National Clean Diesel Emerging Technologies Program	Grants awarded to state, local, private, and nonprofit entities to support the development of diesel emissions reduction technologies.	20	14
Total		**$294** [a]	**160**

Source: OIG-created table from analysis of EPA DERA information.

[a] The Recovery Act allows 2 percent of the total funds—or $6 million—to be used for management and oversight of the grants.

[3] Per ARRA, up to 2 percent of the $300 million may be reserved for EPA management and oversight of the grants.
[4] The DERA program was also appropriated $60 million in non-ARRA funds in FY 2009.

DERA strictly defines eligible emissions reduction solutions for the competitive National Clean Diesel Funding Assistance Program grants. Eligible projects are limited to the use of one or more of the following solutions:

- Retrofit technologies—including exhaust controls, engine upgrades, and cleaner fuels use—that have been verified by EPA or the California Air Resources Board
- Idle reduction technologies that have been verified by EPA
- Aerodynamic technologies that have been verified by EPA
- Low rolling resistance tires that have been verified by EPA
- Engine repowers, which involve replacing old engines with new engines that are certified to meet stricter emission standards
- Replacing vehicles and equipment with newer models with engines certified to meet stricter emission standards

EPA grants to states allow the states more leeway in what types of reduction activities they can fund. For state grants, EPA does not require verified technologies but encourages the states to use verified technologies and reduction strategies to the greatest extent possible.

Grant Reporting Requirements

At the end of each quarter, grantees are required to submit quarterly reports with information on expenditures, progress, problems, and terms and conditions met. These reports include fleet description spreadsheets that contain details about the grant activities completed, including the types of vehicles impacted, the type of retrofit or replacement that occurred, and usage information such as annual miles traveled.

Grantees are also required to submit final technical reports when their projects are complete. The final reports include fleet spreadsheets that are identical to the quarterly fleet sheet reports, except that they also include information about the specific type of retrofit technology used (such as manufacturer and model), and details about the new engines for engine repowers and replacements (such as model and year of the new engine). EPA will use the information from the grantees' final fleet spreadsheets as inputs into the Diesel Emissions Quantifier (DEQ)[5] to estimate final emissions reductions for all the ARRA DERA projects. Because the Office of Transportation and Air Quality (OTAQ) will rely on the data provided by the grantees to calculate the final DEQ emissions reductions, it is essential that the information reported by the grantees be complete and accurate.

[5] DEQ is an EPA-developed model for estimating emissions reductions under specific retrofit scenarios, including retrofitting, repowering, replacing, or adding devices that reduce pollution, reduce idling time, or improve mileage.

In addition to EPA's required grants reporting, ARRA grant recipients must submit quarterly reports to the Office of Management and Budget (OMB) through an online reporting system. These reports include information on jobs funded by ARRA. OMB's December 2009 revised guidance[6] for reporting ARRA-funded jobs defined jobs to be reported as "those funded in the quarter by the Recovery Act." The guidance did not establish specific requirements for documentation or other written proof to support reported job estimates. Instead, the guidance required that recipients of ARRA funds be prepared to justify their estimates. The revised guidance differed from OMB's initial guidance in that recipients of ARRA funding are no longer required to make a subjective judgment on whether a given job would have existed were it not for the Recovery Act. With respect to grant agreements, which include cost-sharing requirements, OMB's revised guidance states, "Jobs funded partially with Recovery Act funds will only be counted based on the proportion funded by the Recovery Act."

Noteworthy Achievements

In FY 2009, OTAQ and the EPA regional offices awarded 160 ARRA DERA grants totaling almost $300 million within a short time period, allowing all but one grantee at least a year or more to complete their grant projects. This was noteworthy because the amount of funding for the FY 2009 ARRA DERA grants awards was about 6 times more than EPA awarded in FY 2008 ($49.2 million), the first year that Congress appropriated grant funds for DERA. Awarding the grants quickly was important because the project period for the grants ended on September 30, 2010, and the prime grant recipients needed sufficient time to award subgrants for designated projects. The regions awarded 85 of the 90 competitive national grants by the end of July 2009 and awarded 4 more by the end of September 2009. The regions also awarded 50 of the 51 state and District of Columbia grants by the end of April 2009, and the sole remaining state grant in September 2009.

Scope and Methodology

We limited our review to National Clean Diesel Funding Assistance Program grants and State Clean Diesel Program grants, since they accounted for the majority of the ARRA DERA funding (88 percent of the number of grants and 83 percent of the value of the grants). As shown in table 1, EPA awarded 90 National Clean Diesel grants totaling $156 million, and 51 state grants totaling $88 million, or $1.73 million per state. At the time we selected the grants for our review, EPA had disbursed only about 13 percent of the total awarded grant funds for the National Clean Diesel and State Clean Diesel grants, as reported in EPA's Integrated Financial Management System. Thus, the majority of planned grant

[6] OMB Memorandum M-10-08, *Updated Guidance on the American Recovery and Reinvestment Act – Data Quality, Non-Reporting Recipients, and Reporting of Job Estimates*, December 18, 2009.

project activities had not been completed when we began our work and could not be verified.

To address our objectives, we reviewed activity under two grants—one national grant and one state grant. We selected these two grants from a list of the 20 grants with the most funds expended as of March 18, 2010. We purposefully selected two grants that involved multiple sectors (e.g., construction, public transit, delivery), and multiple emissions reduction activities (e.g., idle reduction technologies, vehicle replacements, engine repowers, etc.). Using the above criteria, we selected grants awarded to the State of New Hampshire and the American Lung Association of the Upper Midwest for detailed review. We reviewed completed retrofit and replacement activities for 11 subgrants awarded by New Hampshire and 15 subgrants awarded by the American Lung Association of the Upper Midwest. In all, we reviewed 323 completed activities[7] under these two grants. We physically verified the retrofit installation or engine/vehicle replacement for 25 of these 323 activities.

We conducted field work at EPA OTAQ in Washington, DC; the New Hampshire Department of Environmental Services in Concord, New Hampshire; and the American Lung Association of the Upper Midwest headquarters in Springfield, Illinois. We physically verified the completion of diesel emissions reduction projects in Dover, New Hampshire; Newburyport, Massachusetts; Durham, New Hampshire; Pembroke, New Hampshire; Manchester, New Hampshire; Milwaukee, Wisconsin; Fort Wayne, Indiana; and Decatur, Indiana.

We interviewed staff and managers from OTAQ (Ann Arbor, Michigan, and Washington, DC), EPA Region 1 (Boston, Massachusetts), EPA Region 5 (Chicago, Illinois), the New Hampshire Department of Environmental Services (Concord, New Hampshire), and the American Lung Association of the Upper Midwest (Springfield, Illinois). To verify the completion of ARRA-funded diesel emissions reduction activities, we reviewed documentation such as invoices and cancelled checks to support the completion of the activities as provided in the approved work plans and/or grant agreements. For a subset of these reviewed activities, we also conducted on-site visits to verify that activities were completed as reported.

We obtained grant award data from EPA's Integrated Financial Management System to determine the universe of ARRA DERA grants and to select sample grants for review. We determined that the Integrated Financial Management System data were sufficient for these purposes.

[7] We use the term "activity" to refer to the installation of a single retrofit or emissions reduction technology, the replacement of one vehicle, or the repower of one engine. In general, the number of activities on a given grant equals the number of vehicles impacted under the grant. However, in some cases, one vehicle may have had more than one activity—for example, a school bus may have had both a retrofit technology and an idle reduction technology installed, for a total of two activities.

We conducted our field work from February to December 2010 in accordance with generally accepted government auditing standards. Those standards require that we obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our evaluation objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our objectives.

Review of Management (Internal) Controls

Generally accepted government auditing standards require that auditors obtain an understanding of internal controls significant to the audit objectives and consider whether specific internal control procedures have been properly designed and placed in operation. We reviewed internal controls pertaining to oversight of grant activities and expenditures, such as EPA and ARRA quarterly reporting, DERA grant guidance, regional grant oversight procedures, and guidance for EPA grant project officers. We also reviewed internal controls pertaining to ARRA jobs reporting, such as OMB's grant reporting guidance and EPA's procedures for reviewing jobs numbers reported by grantees. In addition, we reviewed compliance with applicable laws, including the DERA and ARRA statutes. Our findings pertaining to specific internal and management controls are discussed in chapter 2 of this report.

Chapter 2
Additional EPA Guidance and Oversight Needed to Ensure Effectiveness of Diesel Emissions Reduction Act Activities

Documentation of grant activities was not always sufficient to demonstrate that funded work met the specific requirements needed to achieve the desired emissions reductions. This occurred in part because grantees were not required to obtain verification that completed work met specific EPA emission standards. Further, ARRA DERA grant funds were used to replace vehicles that would have been replaced anyway due to normal attrition. The prime grantee project officer chose to fund these projects over other projects because these projects could be implemented quickly. As a result, over $203,000[8] in potentially ineligible costs were incurred. EPA does not have reasonable assurance that engine replacement projects will achieve their estimated emissions reductions. Additional EPA guidance and oversight is needed to assure these completed activities achieve the planned emissions reductions and that the activities are reported accurately. Further, additional guidance is needed to clarify when replacements are considered normal attrition and not eligible for DERA funding.

Oversight Needed to Ensure Grant Projects Achieve Emissions Reductions and Are Reported Accurately

Although grantees' documentation supports that work by vendors or subgrantees was completed before grantees reimbursed them, this documentation was not always sufficient to demonstrate that the work met the specific technical requirements to achieve the desired emissions reductions. Further, quarterly reports contained errors that should be corrected so that EPA can accurately estimate the projected emissions reductions from the projects. Specific problems we noted include the following:

- Documentation on new engine certification levels was unclear, inconsistent, or insufficient.
- Emissions reductions for vehicle replacement projects may be overestimated.
- Two subgrantees installed retrofit technology that was unverified at the time the work was completed.
- Quarterly reports contained errors that may lead to inaccurate emissions reduction projections.

[8] All dollar amounts presented in this report have been rounded to the nearest whole dollar.

- One grant agreement had not been revised to account for a reduction in planned retrofit activities.

EPA could ensure more accurate emissions reductions reporting if it took steps to ensure that its grant oversight identifies and resolves these types of problems before the ARRA DERA grants are closed and final emissions reductions are calculated. In some cases, additional guidance is needed to clarify how grantees should address these situations.

Documentation on New Engine Certification Levels Was Unclear, Inconsistent, or Insufficient

For two engine replacement projects involving 13 completed engine replacements at a cost of $343,753, supporting documentation was unclear, inconsistent, or lacked a description of the emissions certification level of the new engines. EPA needs this information to assure that the projects will result in emissions reductions and as input into the DEQ to estimate the projects' emissions reductions. The insufficient documentation about the certification years of these new engines had not been identified by EPA monitoring or oversight. We question whether EPA can identify the correct emissions certification level through its final grant reporting process without the implementation of specific procedures to verify engine certification levels. Given the technical nature of these engine replacement projects and their higher cost compared with other emissions reductions projects, we believe these projects warrant additional oversight from EPA to ensure that they achieve their planned emissions reductions. The two engine replacement projects are described below:

Subgrant to Replace Bus Engines

The national grant recipient awarded a $502,000 subgrant for a project involving the replacement of older 1990s engines on 20 urban buses with newer, cleaner engines. However, supporting documentation for 11 completed replacements costing $276,375 was confusing and insufficient to determine the certification level (year) of the new engines. EPA needs the engine certification year as input into the DEQ to estimate emissions reductions.

Because of our inquiries, the subgrantee used diagnostic equipment to scan the new engine computers and provided OTAQ with information such as serial and model numbers from the scans. Using this information, an OTAQ engineer determined that the certification year of the new engines was actually more recent (2006) than the certification year shown in the vendor's invoices (2002). Therefore, the project should obtain more NOx reductions than originally expected.

However, our review also found that these 11 completed engine replacements did not include new diesel oxidation catalysts (DOCs).[9] A Region 5 technical contact confirmed that the installation did not include new DOCs. Further, both the OTAQ engineer and the technical contact said that unless the vendor installed new DOCs, the new engines would not achieve the certification configuration required to meet either 2006 or 2002 emissions standards. Without new DOCs, the buses likely will not achieve the 2 tons of particulate matter emissions reductions planned.

The 11 replacement engines were completed as of March 31, 2010. The invoices for these 11 replacements stated that the new engines were certified to meet the emission standards in place in 2002. Vendor representatives and prime grant recipient grant managers also stated that they believed the new engines were 2002 certified. However, during a site visit at the vendor's garage, we observed a sticker on one of the new replacement engines that stated that the engine was certified to 2006 emission standards. This is significant because EPA's emission standards changed in 2004, and a 2006-certified engine would have lower emissions than a 2002-certified engine. The vendor provided us with conflicting information about what certification level the engines actually met, at first providing us with certification information for 2002-certified engines and later providing us with certification information for 2006-certified engines. After we presented our concerns about this subgrant to Region 5 grant technical contacts, one of the region's technical contacts visited this subgrantee in August 2010 to verify the new engine replacements. The EPA technical contact confirmed that the vendor did not install new DOCs. The existing DOCs were approximately 10 years old or older, and according to an OTAQ engineer, need to be replaced for the new engines to meet either the 2002 or 2006 engine certification configurations. We estimate the cost of installing new DOCs on the 11 completed buses we reviewed to be about $11,550 (11 @ $1,050 per DOC).

Subgrant to Replace Construction Equipment Engines

For one of the state awarded subgrants totaling $260,000 to replace engines on six pieces of heavy construction equipment, the invoices did not show whether the vendor conducted the work as planned for two of the replacements completed at the time we conducted our review. The agreement between the prime grantee and the subgrantee required the replacement of old engines with new engines that met Tier 1[10] emissions standards. However, the invoice was contradictory, stating that the new engines were both Tier 1 and Tier 2 engines. Representatives for the invoicing company told us that some statements in the invoice were incorrect but that they had installed new Tier 1

[9] Diesel oxidation catalysts are intended primarily to reduce particulate matter emissions, but also to reduce carbon monoxide and hydrocarbons. They do not have a significant impact on NOx emissions.

[10] EPA established emissions standards for heavy-duty construction equipment in incremental levels or tiers. Tier 1 refers to the first level of emissions standards, and Tier 2 is the second, more stringent level of emissions standards.

engines. We requested a corrected invoice that showed the certification levels for the two invoiced engines that we reviewed. We were not provided with a corrected invoice; instead, we were provided with four "Engine Emissions Data" documents that showed the certification level (Tier 1) for four engines. However, we were unable to match the serial numbers on the "Engine Emissions Data" documents to the serial numbers listed for the new engines in the invoice's supporting data. The cost of these two engine replacements was $67,378.

Emissions Reductions on Vehicle Replacement Projects May Potentially Be Overestimated

For six vehicle replacements totaling $268,000 in DERA funds, the model year of the engines in new vehicles was not the same as the vehicle model year. This difference in years could potentially result in an overestimation of emissions reductions for these projects if not reported correctly. The model year of the engines was not evident from the invoices for these vehicles, and was only discovered after we visited one of the subgrantees and discussed the project with company officials. Specifically, older vehicles were replaced with model year 2010 vehicles; however, the vehicles had engines that were certified to meet the emission standards in place for 2007 (i.e., 2007 model year engines), not the stricter emission standards in place for 2010 engines.

The DEQ User's Guide states that when entering new vehicle information into the DEQ, the engine model year—not the vehicle model year—should be entered in the "model year" field. EPA's final fleet sheet reporting template, which EPA plans to use to input information into the DEQ for final project emissions reduction estimates, contains a field "Technology Model Year" under the inputs for the "New Vehicle/Technology Information" table. EPA's instructions for the final report state that the new model year should be reported for replacements and repowers, but does not specify that it is the engine year—not the vehicle year—that should be reported.

For vehicle replacement projects, we believe "Technology Model Year" could be misinterpreted to mean the vehicle model year, and not the engine model year on vehicle replacement projects. If the final fleet sheets submitted to EPA do not indicate the correct model year of the engines, the emissions reductions for these types of projects could be overstated.

Two Subgrantees Installed Unverified Technology

Fifteen retrofit activities we reviewed involved the installation of retrofit technology that EPA had not verified for the specific model years of the vehicles at the time the project was approved. At the time the installations were completed, EPA had not verified any of the vendor's DOCs for school bus model years 2004 to 2006. Subsequent to the installation of these DOCs, EPA verified one specific

manufacturer's technology for model years 2004 to 2006. Information we gathered indicates that this technology is used by the vendor who conducted the work. As of October 2010, EPA had not determined whether these 15 DOCs costing $15,900 used the subsequently verified technologies. Even if these technologies turn out be approved technologies, the approval of these projects represented a breakdown in the oversight process.

Quarterly Reporting Errors May Lead to Inaccurate Emissions Reduction Projections

Grantee reporting on completed activities contained numerous errors that could affect the reliability of EPA's final emissions reductions estimates for the ARRA DERA program. For example, the national grantee reported annual miles traveled and annual idling hours as sums in its quarterly reports, rather than as averages. According to EPA guidance, these data elements should be reported as averages, not fleet totals. To the extent that the calculations in the DEQ are based on these variables, the resulting DEQ emissions reduction projections may be inaccurate. Other reporting errors in the quarterly reports included designating the wrong retrofit technology and citing the incorrect year that the retrofit occurred.

Grant Agreement Not Revised to Account for Reduction in Planned Activity

One of the subgrantees on the national grant we reviewed decided to install only 21 of the 25 direct-fired heaters[11] originally specified in its grant agreement. Neither the national grant recipient nor EPA identified this situation through monitoring or oversight. The national grant recipient made its final payment to the installation vendor on January 14, 2010. The grant recipient's quarterly report to EPA for the period ending March 31, 2010, indicated there were no problems in completing planned projects. In addition, EPA Region 5's progress report review, dated February 3, 2010, contained the words "none identified" in response to the review question, "Please identify any commitments in the work plan . . . not addressed in the report or reported as not accomplished." If EPA's desk review had included a review of the vendor's invoice, EPA could have determined that the vendor installed only 21 direct-fired heaters. Such a review would allow EPA to put the funds to better use by preparing a grant amendment to make the $7,200 in unused funds ($1,800 per heater for a total of $7,200) available for other diesel retrofit projects under this grant.

Guidance Needed to Ensure That Funds Are Not Used to Replace Engines That Would Have Been Replaced Anyway

EPA guidance specifically defines early replacement for its national competitive grants, but the Agency should improve its state grant guidance to ensure that

[11] Direct-fired heaters reduce diesel emissions by reducing engine idling.

DERA funds are not used to replace engines that would have been replaced anyway. We found that two subgrantees in New Hampshire were reimbursed approximately $108,425 in ARRA DERA funds to replace three vehicles—one grader and two dump trucks—even though information indicated that the subgrantees would have replaced the vehicles through normal attrition.

All grant agreements between EPA and the states include programmatic condition 9(d) regarding early replacement of vehicles or engines. Programmatic condition 9(d) states:

> Early replacement: Funds may be used for the early replacement of vehicles, engines and/or equipment. **Emissions reductions that result from vehicle, engine or equipment replacements that would have occurred through normal attrition are considered to be the result of normal fleet turnover and not eligible costs under this assistance agreement [emphasis added]**. The recipient must provide evidence that the replacement activity would not have occurred without the financial assistance provided by EPA. Supporting evidence can include verification that the vehicles or equipment being replaced have useful life left and fleet characterization showing fleet age ranges and average turnover rates.

While the above condition states that the replacement of vehicles that would have occurred through normal attrition is an ineligible cost, the grant agreements between EPA and the states contain no further definitions of "early replacement" or "normal attrition." EPA has not issued any additional guidance to define normal attrition.

In contrast, EPA has specifically defined requirements for early replacement under the national competitive grants. For example, EPA's request for proposal for national grants provides specific examples of when a vehicle would be considered as early replacement or normal attrition and thus ineligible for DERA funding. Further, EPA's guidance for the national grants states that a vehicle scheduled for replacement during the project period (i.e., before October 1, 2010) is not considered an early replacement, and thus not eligible for funding under DERA. We believe the grant agreements between EPA and the states should be more specific regarding early replacement and normal attrition to address the situations described below and to clearly establish the ability of EPA project officers to determine whether costs are ineligible.

Subgrant to Replace Motor Grader

One New Hampshire town received a subgrant on August 19, 2009, from the state to replace a motor grader, even though the town indicated it had plans to replace the vehicle. The town was reimbursed $58,200 in ARRA funds, which was

25 percent of the cost of the grader. The town's capital improvement plan for 2007–2016 recommended replacing the motor grader in 2010. Instead, the grader was replaced in late August 2009 under the state's ARRA DERA grant. Further, according to the town's project proposal form, the motor grader had begun leaking oil and was having emissions problems, and that refurbishment of the machine would not bring the motor grader up to current emissions standards.

Subgrant to Replace Two Dump Trucks

On November 18, 2009, another New Hampshire city received a subgrant from the state to replace two dump trucks that the subgrantee had scheduled for replacement. In March 2010, the city was reimbursed $50,225 (25 percent of the total replacement cost) with ARRA DERA funds. According to the city's capital improvement plan, the trucks were scheduled to be replaced in the city's fiscal year 2010, which ran from July 1, 2009, to June 30, 2010. The city's fleet manager confirmed to us that the city planned to replace the trucks. Further, the fleet manager told us that because of the deteriorating condition of one of its dump trucks, the city was using that dump truck only for emergency snow removal during the winter.

The New Hampshire grant project officer was aware of the plans for replacing these three vehicles but told us that the state was looking for projects that were ready to begin and could be implemented quickly, as opposed to choosing potential projects whose completions were less certain. EPA managers told us that they considered these disbursements eligible costs under the program and cited the DERA statute as giving states latitude on what DERA projects they fund. Specifically, DERA states that:

> . . . a State shall use any funds provided under this section to develop and implement such grant and low-cost revolving loan programs in the State as are appropriate to meet State needs and goals relating to the reduction of diesel emissions.

We acknowledge that the lack of specificity in the state grant programmatic conditions established by EPA to implement DERA makes it difficult to determine whether costs were ineligible. However, given the condition of the replaced equipment and both entities' documented plans to replace these vehicles, we do not believe these replacements ($58,200 for 25 percent of the cost of the grader and $50,225 for 25 percent of the replacement cost for the two dump trucks) met the intent of the DERA program. EPA should more clearly define its programmatic conditions for early replacements under state grants.

Methodology to Report the Number of Jobs Funded Was Reasonable

In general, the job reporting methodology used by the two grantees we reviewed appeared reasonable.[12] Both grantees obtained information from each of their subgrantees and vendors concerning the jobs that were funded by the ARRA grants. This information provided sufficient support for the hours that were included in these grantees' jobs computations and met OMB requirements.

However, one grantee reported ARRA-funded full-time equivalents (FTEs) to EPA without adjusting FTEs for subgrantee cost sharing, resulting in a slight overstatement of ARRA-funded work hours. This oversight had a minimal impact on the total FTEs reported for this grant, since some subgrantees were public school systems that did not have a cost-share requirement, and the cost-share requirement for other subgrantees did not exceed 30 percent of the project cost. EPA could improve the accuracy of its ARRA jobs reporting by instructing its project officers to ensure that grantees review and adjust their reported job totals by any applicable cost-share percentages.

Other Matter

One of the grantees overpaid a vendor a total of $609 for 21 timers for direct-fired heaters that were installed on school buses. According to the grant agreement between the prime grant recipient and the subgrantee, the cost of the timers was not to exceed $440. However, the vendor charged $469 for the installation of each timer. We informed the grantee of the overcharge. As a result, the grantee contacted the vendor and received a $609 credit for the overpayment. The grantee plans to use this credit to pay for other work to achieve diesel emissions reductions conducted by this vendor under the grant.

Conclusions

The results of our review of completed and reimbursed activities on two grants indicated that EPA should improve its oversight and issue additional guidance to ensure that grant activities are effective in achieving the anticipated emissions reductions for those projects. For example, DERA grant project officers should perform additional oversight of engine replacement projects to verify the emission certification levels of the new engines. Further, oversight is needed to ensure that grantee reports are accurate and provide the information needed to correctly

[12] We noted that one grantee used different weekly hour totals to define an FTE for the same type of work. OMB guidance allows grantees to base an FTE on the number of hours representing "a full work schedule for the kind of job being estimated." While the total hours used to define the work week were not materially different for these vendors, the possibility exists for vendors to use significantly different weekly hour totals in defining an FTE for the same position. If a significant number of vendors defined the work week as substantially below 40 hours, we believe the reported number of FTEs funded could be misleading to recipients of the information if they assumed that reported hours were based on a traditional 40-hour work week.

estimate emissions reductions. Also, guidance is needed for state grants to clarify when vehicle replacements are considered normal attrition and therefore not eligible for DERA funding.

Recommendations

We recommend that the Assistant Administrator for Air and Radiation require the Director, Office of Transportation and Air Quality, to:

1. Before allowing EPA project officers to close out the ARRA DERA grants, provide DERA grant project officers notice of the reporting errors and oversight problems we identified, including:

    a. unclear, inconsistent, and insufficient documentation for engine certification levels;
    b. engine vehicle year reported instead of engine model year;
    c. ineligible retrofits due to technology not being verified;
    d. numerous errors in quarterly progress reports; and
    e. the need to timely review project activities and, when some planned retrofits technologies are not performed, put the funds to better use by preparing a grant amendment.

2. Before allowing EPA project officers to close out the ARRA DERA grants, develop and issue EPA monitoring and oversight guidance or procedures for the grant project officers to provide reasonable assurance that:

    a. grantees' quarterly and final reports accurately identify the work completed on projects,
    b. the emissions certification level of new engines in engine repower and engine/vehicle replacement projects is verified and accurately reported, and
    c. ARRA job totals on cost-sharing projects are reduced by the percentage of subgrantee cost sharing.

3. Before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify the installation of new DOCs that meet the certified engine configuration for new engines or recoup $11,550 for the estimated cost of installing the DOCs from the total project cost for the 11 completed urban bus repowers in our review.

4. Before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that Tier 1 engines were installed for the two construction equipment repowers in our review or recoup the $67,378 in grant funds for these two unsupported engine replacements.

5. Before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that the 15 DOCs installed in buses under two subgrants awarded under the national grant are now verified technologies or recoup the $15,900 in grant funds for the DOC retrofits of 15 buses where the grantee installed unverified technology.

6. Before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that the grader and two dump trucks identified in the capital improvement plans were eligible for DERA funding or recoup $58,200 for the grader and $50,225 for the two trucks.

7. Revise programmatic condition 9(d) for future state grant awards to clarify the definition of early replacement for state grants or otherwise provide guidance to state grant recipients to more clearly define eligible and ineligible costs for early replacements of engines.

8. Require DERA grant and subgrant agreements to specify the emissions certification level or year of new engines to be installed as part of vehicle replacement and engine repower projects.

Agency Comments and OIG Evaluation

The Office of Air and Radiation (OAR) agreed with our findings and conclusions, and has agreed to implement all of the report's recommendations. In its January 14, 2011, response to the draft report, OAR detailed corrective actions it has ongoing and planned, as well as actions it has already taken, to address each of the recommendations. We commend OAR for beginning to implement the report recommendations in such a timely manner. Based on OAR's written response, as well as supplemental supporting documentation provided by OAR staff, we are closing all recommendations upon issuance of this report. OAR's complete written response, including its proposed action plan, is in appendix A.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in $000s)	
Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Claimed Amount	Agreed-To Amount
1	15	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, provide DERA grant project officers notice of the reporting errors and oversight problems we identified, including: a. unclear, inconsistent, and insufficient documentation for engine certification levels; b. engine vehicle year reported instead of engine model year; c. ineligible retrofits due to technology not being verified; d. numerous errors in quarterly progress reports; and e. the need to timely review project activities and, when some planned retrofits technologies are not performed, put the funds to better use by preparing a grant amendment.	C	Assistant Administrator for Air and Radiation			
2	15	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, develop and issue EPA monitoring and oversight guidance or procedures for the grant project officers to provide reasonable assurance that: a. grantees' quarterly and final reports accurately identify the work completed on projects, b. the emissions certification level of new engines in engine repower and engine/vehicle replacement projects is verified and accurately reported, and c. ARRA job totals on cost-sharing projects are reduced by the percentage of subgrantee cost sharing.	C	Assistant Administrator for Air and Radiation			
3	15	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify the installation of new DOCs that meet the certified engine configuration for new engines or recoup $11,550 for the estimated cost of installing the DOCs from the total project cost for the 11 completed urban bus repowers in our review.	C	Assistant Administrator for Air and Radiation			

RECOMMENDATIONS						POTENTIAL MONETARY BENEFITS (in $000s)	
Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Claimed Amount	Agreed-To Amount
4	15	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that Tier 1 engines were installed for the two construction equipment repowers in our review or recoup the $67,378 in grant funds for these two unsupported engine replacements.	C	Assistant Administrator for Air and Radiation			
5	16	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that the 15 DOCs installed in buses under two subgrants awarded under the national grant are now verified technologies or recoup the $15,900 in grant funds for the DOC retrofits of 15 buses where the grantee installed unverified technology.	C	Assistant Administrator for Air and Radiation			
6	16	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that the grader and two dump trucks identified in the capital improvement plans were eligible for DERA funding or recoup $58,200 for the grader and $50,225 for the two trucks.	C	Assistant Administrator for Air and Radiation			
7	16	Require the Director, Office of Transportation and Air Quality, to, revise programmatic condition 9(d) for future state grant awards to clarify the definition of early replacement for state grants or otherwise provide guidance to state grant recipients to more clearly define eligible and ineligible costs for early replacements of engines.	C	Assistant Administrator for Air and Radiation			
8	16	Require the Director, Office of Transportation and Air Quality, to, require DERA grant and subgrant agreements to specify the emissions certification level or year of new engines to be installed as part of vehicle replacement and engine repower projects.	C	Assistant Administrator for Air and Radiation			

O = recommendation is open with agreed-to corrective actions pending
C = recommendation is closed with all agreed-to actions completed
U = recommendation is undecided with resolution efforts in progress

Agency Response to Draft Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 14 2011

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: Office of Air and Radiation's (OAR) Response to OIG Draft Report *EPA Should Improve Guidance and Oversight to Ensure Effective Recovery Act-Funded Diesel Emissions Reduction Act Activities*, Project No. 2010-1177

FROM: Gina McCarthy
Assistant Administrator

TO: Wade Najjum, Assistant Inspector General for Program Evaluations

Thank you for the opportunity to comment on the Office of Inspector General (OIG) draft report, *EPA Should Improve Guidance and Oversight to Ensure Effective Recovery Act-Funded Diesel Emissions Reduction Act (DERA) Activities*, Project No. 2010-1177, dated December 14, 2010, which focused on grant activities under DERA's Recovery Act program. The recommendations provided in the draft report will help OAR continue to improve its oversight and guidance for DERA grant activities.

OAR appreciates the effort by the OIG to thoroughly understand the complexity of clean diesel projects, including the technologies, engines and devices used to lower exhaust from diesel vehicles, vessels and equipment, and to identify several areas for improvements in guidance and oversight. OAR and the Regions have already begun to work diligently to implement the recommendations in this report. Specifically there are several recommendations involving subgrants which we believe have now been resolved. Corresponding materials provided by the grantees to the Regions will be forwarded to the OIG under separate cover. In addition, we have made progress on the other more general recommendations for enhanced reporting. A summary of the recommendations, their associated actions and projected completion dates is attached at the end of this document. Please see the specific recommendations below and their updates.

1. Before allowing EPA project officers to close out the American Recovery and Reinvestment Act (ARRA) DERA grants, provide DERA grant project officers notice of the reporting errors and oversight problems we identified, including:

    a. unclear, inconsistent, and insufficient documentation for engine certification levels;
    b. engine vehicle year reported instead of engine model year;
    c. ineligible retrofits due to technology not being verified;
    d. numerous errors in quarterly progress reports; and
    e. the need to timely review project activities and, when some planned retrofits technologies are not performed, put the funds to better use by preparing a grant amendment.

EPA Response: OAR and the Regions have addressed this recommendation and have taken action to improve its reporting and oversight. Specifically:

- Project Officers have been provided notice of the reporting errors and inconsistencies noted above.

In addition:

- A technical information guidance document is being developed for EPA Project Officers and Grantees which details how to ascertain engine certification levels using PM/NOx certification levels for both on-highway and nonroad engines.
- Quarterly and final reporting templates are being revised to clarify needed information, such as emissions levels, technology type/make/model/year and other datapoints, including:
    - the emissions levels for the four criteria pollutants (PM, NOx, CO and HC, as well as CO2), so that grantees will have to report that information;
    - the headings for "engine model year" and "year of retrofit activity" and their definitions so that correct costs/benefits can be calculated.

2. Before allowing EPA project officers to close out the ARRA DERA grants, develop and issue EPA monitoring and oversight guidance or procedures for the grant project officers to provide reasonable assurance that:

    a. grantees' quarterly and final reports accurately identify the work completed on projects,
    b. the emissions certification level of new engines in engine repower and engine/vehicle replacement projects is verified and accurately reported, and
    c. ARRA job totals on cost-sharing projects are reduced by the percentage of subgrantee cost sharing.

EPA Response: OAR agrees with this recommendation and has taken action to improve its reporting and oversight. Specifically:

- Quarterly and final reporting templates are being revised to clarify needed information, including a new seven-page narrative outline for final reports.
- A technical information guidance document is being developed for EPA Project Officers and Grantees which details how to ascertain engine certification levels using PM/NOx certification levels for both on-highway and nonroad engines

- Project Officers will be retrained on job calculation involving cost-sharing projects.
- OAR has held three training sessions for EPA DERA programmatic staff and project officers on the IG findings on repowers, exhaust control technologies and idling reduction technologies. The first was an in-person training held on October 22, 2010 in Washington, D.C. with approximately 40 staff and managers attending; one was a webinar for EPA Project Officers on December 14, 2010; and the final webinar for Project Officers and grant reviewers was on January 12, 2011.

3. Before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify the installation of new DOCs that meet the certified engine configuration for new engines or recoup $11,550 for the estimated cost of installing the DOCs from the total project cost for the 11 completed urban bus repowers in our review.

EPA Response: EPA staff in Region 5 worked with the grantee, the fleet, and the vendor to install diesel oxidation catalysts to bring the buses to the 2006 certified engine configuration. Once the installations were complete, the vendor provided the grantee with an invoice and letter confirming the installations at their cost. It is not necessary to recoup any funds.

4. Before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that Tier 1 engines were installed for the two construction equipment repowers in our review or recoup the $67,378 in grant funds for these two unsupported engine replacements.

EPA Response: EPA staff in Region 1 followed up with the grantee, and asked that they obtain updated, clarified invoices that clearly indicate the serial numbers of the newly installed engines, and that on the invoice, identify the engines as meeting the Tier 1 level of emissions reduction. The grantee has indicated that the vendor is not able to provide updated invoices, as that will cause a problem with their computer billing system. However, the vendor was able to send record maintenance notes where the serial number of the engine and the vehicle are both listed. After further follow up by Region 1, the grantee obtained a letter, dated December 23, 2010, from the engine manufacturer. The letter clearly describes each engine, with serial number, that was installed on each vehicle, with vehicle serial number, and further indicates that the engines were certified as Tier 1.

Follow-up actions are completed. Region I has reviewed the three documents referenced above and has determined that they demonstrate that Tier I engines were installed and therefore, it is not necessary to recoup any funds.

5. Before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that the 15 DOCs installed in buses under two subgrants awarded under the national grant are now verified technologies or recoup the $15,900 in grant funds for the DOC retrofits of 15 buses where the grantee installed unverified technology.

EPA Response: After reviewing and verifying completed work and associated documentation with the vendor and fleet, Region 5 determined that only three of the 15 diesel oxidation catalysts installed were not verified for the engine model years of those buses (the other 12 were actually fuel-operated heaters or verified catalysts). These diesel oxidation catalysts have been subsequently verified by EPA for installation for the engine model year in question (2004), therefore it is not necessary to recoup any funds.

6. Before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that the grader and two dump trucks identified in the capital improvement plans were eligible for DERA funding, or recoup $58,200 for the grader and $50,225 for the two trucks.

EPA Response: The OIG draft report on page 13 refers to the $58,200 in ARRA funds that was spent on a grader (25% of the grader cost), as well as $50,225 for two dump trucks (25 percent of the total replacement cost). The OIG states that the cities' capital plans indicated these vehicles were scheduled for replacement, and that the vehicles were in deteriorating condition.

EPA staff in Region 1 requested documentation/information from the grantee indicating how the grantee established/evaluated eligibility for replacement vehicles for the two sub-grants, as well as how the determination process worked. Region 1 also asked for a clarification of the context in which the cities' capital plans were discussed, and current status.

The grantee has indicated that they will comply with this request. Region 1 will evaluate this additional information once it has been submitted. However, the preliminary determination by Region 1 is that it is not necessary to recoup funds, as the grantee has met the terms and conditions of the grant. The grantee complied with the overarching goal of the Recovery Act, which was to create jobs and get funds into the economy as quickly as possible, and the goals of DERA to reduce diesel emissions. The grantee conducted its own competition to find projects that were "shovel ready," which was conducted openly and with transparency.

As determined by the OIG's own investigation, the grantee

> "…was looking for projects that were ready to begin and could be implemented quickly, as opposed to choosing potential projects whose completions were *less certain*. EPA managers told [the OIG] that they considered these disbursements eligible costs under the program and cited the DERA statute as giving states latitude on what DERA projects they fund. Specifically, DERA states that, '…a State shall use any funds provided under this section to develop and implement such grant and low-cost revolving loan programs in the State as are appropriate to meet State needs and goals relating to the reduction of diesel emissions…' *We [OIG] acknowledge that the lack of specificity in the state grant programmatic conditions established by EPA to implement DERA makes it difficult to determine whether costs were ineligible."*

In addition, the OIG determined in their report, "…neither the grant conditions nor EPA guidance explain how to determine normal attrition." The recommendation to make the eligibility/attrition requirements clearer for all grants is addressed in Recommendation #7. However, in the meantime, the grantee used a reasonable approach to meet the express purpose of other, more urgent, ARRA requirements, especially given they were working with imprecise guidance and an established system of flexibility for states. Moreover, although the vehicles were potentially scheduled for replacement, given the economic drivers of the ARRA program, the cities may not have been able to follow through on that plan, and therefore may have not been able to make the replacements without EPA assistance, which is one of the accepted parameters of making an eligibility decision. Region 1 has asked the grantee for further clarification on this point; documentation will be forwarded to the OIG when it is received from the grantee.

7. Revise programmatic condition 9(d) for future state grant awards to clarify the definition of early replacement for state grants or otherwise provide guidance to state grant recipients to more clearly define eligible and ineligible costs for early replacements of engines.

EPA response: The program will provide guidance as the State Clean Diesel Program grants are amended for Fiscal Year 2011 to clarify the definition of "early replacement."

8. Require DERA grant and subgrant agreements to specify the emissions certification level or year of new engines to be installed as part of vehicle replacement and engine repower projects.

EPA Response: EPA will require this information for all applications before awards are made, in order to assure that there will be a project environmental benefit. Terms and Conditions for all new grants for repower and replacement projects will be revised to specifically require this information in their reporting. In addition, Quarterly and Final Report templates are being revised to include this information and it will be required before grant close-outs. Finally, all regional and headquarters grant reviewers for the 2011 competition were trained on this issue at a webinar on January 12, 2011.

A summary table of OAR's corrective actions and associated projected completion dates is attached. Copies of responses from Region 1 and Region 5 are included as separate attachments. If you have any questions, please contact me or staff member Jennifer Keller (202-343-9541).

Attachments

Corrective Actions and Projected Completion Dates

Rec. No.	Page No.	Subject	Lead Responsibility	OAR Corrective Action	Planned Completion Date
1	15	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, provide DERA grant project officers notice of the reporting errors and oversight problems we identified, including: a. unclear, inconsistent, and insufficient documentation for engine certification levels; b. engine vehicle year reported instead of engine model year; c. ineligible retrofits due to technology not being verified; d. numerous errors in quarterly progress reports; and e. the need to timely review project activities and, when some planned retrofits technologies are not performed, put the funds to better use by preparing a grant amendment.	Assistant Administrator for Air and Radiation	OAR will develop guidance and procedures for documenting engine certification levels, and revise templates for clearer and more accurate reporting. OAR will train all EPA DERA ARRA Project Officers and technical staff at HQ and in the Regions on technologies (verification, certification levels, etc.).	April, 2011
2	15	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, develop and issue EPA monitoring and oversight guidance or procedures for the grant project officers to provide reasonable assurance that: a. grantees' quarterly and final reports accurately identify the work completed on projects, b. the emissions certification level of new engines in engine repower and engine/vehicle replacement projects is verified and accurately reported, and c. ARRA job totals on cost-sharing projects are reduced by the percentage of subgrantee cost sharing.	Assistant Administrator for Air and Radiation	OAR will revise quarterly and final reporting templates so that grantees can more accurately report completed work and emissions certification levels for new engines. OAR will re-train all EPA DERA ARRA Project Officers on correct job calculation.	April, 2011
3	15	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify the installation of new DOCs that meet the certified engine configuration for new engines or recoup $11,550 for the estimated cost of installing the DOCs from the total project cost for the 11 completed urban bus repowers in our review.	Assistant Administrator for Air and Radiation	OAR believes that this issue is closed, as the correct DOCs have now been installed on all 11 urban buses at the vendor's expense.	
4	16	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that Tier 1 engines were installed for the two construction equipment repowers in our review or recoup the $67,378 in grant funds for these two unsupported engine replacements.	Assistant Administrator for Air and Radiation	OAR believes that this issue is closed, as the vendor has now verified that the engines in question were in fact Tier 1 engines.	

5	16	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that the 15 DOCs installed in buses under two subgrants awarded under the national grant are now verified technologies or recoup the $15,900 in grant funds for the DOC retrofits of 15 buses where the grantee installed unverified technology.	Assistant Administrator for Air and Radiation	OAR believes that this issue is closed, as: 1) the number of DOCs which were incorrectly installed is three (the other 12 technologies were fuel-operated heaters or verified catalysts); and 2) the DOCs in question are now verified for the model year of the school bus engines (2004).	
6	16	Require the Director, Office of Transportation and Air Quality, to, before allowing EPA project officers to close out the ARRA DERA grants, require DERA grant project officers to verify that the grader and two dump trucks identified in the capital improvement plans were eligible for DERA funding or recoup $58,200 for the grader and $50,225 for the two trucks.	Assistant Administrator for Air and Radiation	OAR believes this issue is closed, as: 1) the grantee did not have a clear definition of "early replacement" at the time of the subgrantee award; 2) the subgrantee award met other conditions of the grant program , such as "shovel-ready project" and "create/save jobs"; 3) due to the economic downturn the subgrantee would not have purchased the vehicles the year of the subgrantee award. OAR will obtain additional documentation on the last point, above.	February, 2011
7	16	Require the Director, Office of Transportation and Air Quality, to, revise programmatic condition 9(d) for future state grant awards to clarify the definition of early replacement for state grants or otherwise provide guidance to state grant recipients to more clearly define eligible and ineligible costs for early replacements of engines.	Assistant Administrator for Air and Radiation	OAR will clarify the definition of "early replacement" for grantees of the State Clean Diesel program for the FY 2011 round of State Clean Diesel Grants.	March, 2011
8	16	Require the Director, Office of Transportation and Air Quality, to, require DERA grant and subgrant agreements to specify the emissions certification level or year of new engines to be installed as part of vehicle replacement and engine repower projects.	Assistant Administrator for Air and Radiation	OAR will amend the Terms and Conditions for future awards to specify the emissions certification level or year of new engines to be installed as part of vehicle replacement and engine repower projects.	March, 2011

O = recommendation is open with agreed-to corrective actions pending
C = recommendation is closed with all agreed-to actions completed
U = recommendation is undecided with resolution efforts in progress

Appendix B

Distribution

Office of the Administrator
Assistant Administrator for Air and Radiation
Regional Administrator, Region 1
Regional Administrator, Region 5
Director, Office of Regional Operations
Agency Followup Official (the CFO)
Agency Followup Coordinator
General Counsel
Associate Administrator for Congressional and Intergovernmental Relations
Associate Administrator for External Affairs and Environmental Education
Director, Office of Transportation and Air Quality, Office of Air and Radiation
Audit Followup Coordinator, Office of Air and Radiation
Audit Followup Coordinator, Region 1
Audit Followup Coordinator, Region 5