

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



REGION 9

75 Hawthorne Street

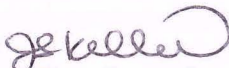
San Francisco, CA 94105

DEC 04 2014

MEMORANDUM

SUBJECT: Response to Office of Inspector General final report No. 14-R-0130, "Unless California Air Resources Board Fully Complies With Laws and Regulations, Emission Reductions and Human Health Benefits Are Unknown," March 6, 2014

FROM: Serena A. McIlwain 
Assistant Regional Administrator

THROUGH: Jennifer Keller 
Director, Legacy Fleet Incentives and Assessment Center
Office of Transportation and Air Quality

TO: Robert Adachi
Director, Forensic Audits
Office of the Inspector General

Thank you for the opportunity to respond to the issues and recommendations in the subject audit report. Following is a summary of the Environmental Protection Agency Region 9's (Region 9) position, along with our response to each report recommendation. For those recommendations with which Region 9 agrees, we have provided intended corrective actions and estimated completion dates as appropriate. For those report recommendations with which Region 9 does not agree, we have explained our position and proposed alternatives to the recommendations. This memorandum also summarizes actions taken by the Office of Transportation and Air Quality (OTAQ); that office has reviewed and concurred on this response. For your consideration, we have included a Substantive Comments document (Attachment 1) to supplement this response.

EPA REGION 9'S OVERALL POSITION

Region 9 shares your interest in ensuring we protect the integrity of our cooperative agreements as we achieve environmental goals. We agree with most of the final report recommendations, and have noted the two recommendations with which we disagree. In addition, we provide more detailed comments in the Substantive Comments attachment. We have already undertaken many of the recommendations raised in your report, as outlined below.

AGENCY'S RESPONSE TO REPORT RECOMMENDATIONS

No.	Recommendation	High-Level Intended Corrective Actions	Estimated Completion
1	Recover \$94,109 previously claimed under the cooperative agreement.	Region 9 agrees with this recommendation. On January 9, 2014, the California Air Resources Board (CARB) returned \$94,109 (the full amount of ineligible funds).	January 9, 2014
2	Require CARB to establish internal controls to ensure that contract billings comply with contract terms and conditions.	Region 9 agrees with this recommendation and will work with CARB to ensure adequate internal controls are put in place to ensure billing meets EPA's requirements and terms and conditions.	Before funding of any future DERA award
3	Require CARB to scrap or remanufacture replaced engines in accordance with the Energy Policy Act and the terms and conditions of the cooperative agreement.	Region 9 agrees with this recommendation. On November 18, 2013, Region 9 received an executed Closeout Agreement between CARB and Burlington Northern Santa Fe (BNSF) that details BNSF's plan to scrap and/or remanufacture all eleven of the old locomotive engines (see Attachment 2 - Closeout Agreement between CARB and BNSF). Region 9 supports this agreement and will continue to work with CARB to track progress.	No later than May 18, 2015
4	Require CARB to provide documentation that the replaced engines were scrapped or remanufactured.	See response to Recommendation 3 above. The agreement between CARB and BNSF contains a provision that states CARB will meet the requirements of programmatic term and condition P.10 (Scrapage and/or Remanufacture requirement). Region 9 will work with CARB to ensure that proper scrapping and/or remanufacturing of the eleven locomotives occurs. As of October 2014, eight of the eleven locomotives have been scrapped or remanufactured.	No later than May 18, 2015.
5	Unless CARB complies with the scrappage requirements, recover \$8,771,891 of the total federal share of the claimed costs.	Region 9 does not anticipate that we will need to recover \$8,771,891 of the remaining total federal share of the claimed costs based on the terms of the Closeout Agreement referenced above. However, if BNSF does not properly scrap and/or remanufacture the engines pursuant to the terms of the aforementioned agreement, Region 9 will seek to recover grant funds from CARB.	No later than May 18, 2015
6	Require CARB to revise the jobs reported as created or retained to reflect the number of jobs funded by the Recovery Act.	This recommendation is closed pursuant to the IG's final report. As noted in that report, Recovery Act Section 1512 quarterly reports for prior periods cannot be amended. Since CARB has submitted revised jobs information and explanations for the error, the IG considers Recommendation 6 resolved.	NA

No.	Recommendation	Agency Explanation/ Response
7	Work with CARB to develop a more accurate calculation of project results based on actual fuel usage.	Region 9 and OTAQ do not agree with the IG's recommendation, because CARB provided the most accurate emission reductions available. OTAQ has revised the programmatic terms and conditions to clarify the reporting requirements for final emission reductions. Additional information, including the industry standards for reporting these types of results, is provided in the Substantive Comments attachment.
8	Adjust DERA program reporting of CARB project results to reflect recalculated results.	As mentioned above, Region 9 and OTAQ do not agree with the IG's recommendation and find that CARB provided adequate emission reduction figures.

CONTACT INFORMATION

If you have any questions regarding this response, please contact Ben Machol, Manager of the Clean Energy and Climate Change Office, Air Division at (415) 972-3770 or machol.ben@epa.gov.

Attachment 1: Technical and Substantive Comments

Attachment 2: Closeout Agreement with CARB and BNSF

cc: Jack Kitowski
Assistant Chief, Stationary Source Division
CA Air Resources Board
1001 I Street
PO Box 2815
Sacramento, CA 95812

Attachment 1: Substantive Comments
Response to Office of Inspector General (IG) Final Report No. 14-R-0130 “Unless California Air Resources Board Fully Complies With Laws and Regulations, Emission Reductions and Human Health Benefits Are Unknown,” March 6, 2014

EPA Region 9 and EPA’s Office of Transportation and Air Quality (OTAQ) are providing the following substantive comments to the IG final report:

Under recommendation numbers 7 and 8 on pages 15-16 of the final report, the IG recommends that EPA work with the California Air Resources Board (CARB) to develop a more accurate calculation of project results based on actual fuel usage and adjust the Diesel Emission Reduction Act (DERA) program reporting to reflect these recalculated results. EPA Region 9 and OTAQ disagree with the IG’s recommendations and fully support CARB’s emission reduction calculation methodology, which is based on the most accurate and available information. As described further below, EPA uses the term “actual” in our cooperative agreement conditions to differentiate from initial estimates of emission reductions provided at the time of grant applications. EPA has revised DERA programmatic terms and conditions to clarify the reporting requirements for final DERA project emission reductions.

CARB regularly updates their methodology and calculations for emission reductions and has extensive experience calculating emission reductions from in-use locomotives. CARB provides approximately \$90 million annually in grants for diesel emission reductions activities, including switcher locomotive projects, through their Carl Moyer Program, which is similar to EPA’s DERA program and this specific cooperative agreement.¹ Therefore, CARB has a strong need for, and extensive past experience with, accurate emission reduction calculations from diesel projects. Additional information on the way in which EPA and CARB calculate overall emission reductions, as well as typical industry practice for quantifying fuel use, is provided below.

EPA’s emission quantification models, including those used for setting emission standards for manufacturing locomotive engines, use various assumptions to generate emission factors. Estimates, not actual or quantifiable emissions, are used in EPA’s engine rules, as well as EPA’s Diesel Emission Quantifier (DEQ), the tool used for quantifying emission reductions for DERA projects. As the DEQ website states, this tool provides estimates of, not actual emission reductions.² EPA’s methodology for calculating emission reductions describes how the agency generates estimated, but never actual emission rates.³

The common Class 1 railroad practice of tracking and reporting fuel usage differs greatly from other DERA recipients, such as long-haul truck or school bus fleets. Railroad companies do not track or regularly quantify the actual fuel consumed for each locomotive. Unlike diesel-fueled trucks or school buses that fuel at a specific fueling station owned by a third party, railroads have their own fueling stations located at the rail yard for both switcher and line-haul locomotives.

¹ CARB’s “Carl Moyer Memorial Air Quality Standards Attainment Program,” <http://www.arb.ca.gov/msprog/moyer/moyer.htm>.

² EPA Nation Clean Diesel Campaign’s “Diesel Emission Quantifier,” <http://www.epa.gov/cleandiesel/quantifier/>.

³ EPA Office of Transportation and Air Quality’s “Emission Factors for Locomotives,” April 2009, <http://www.epa.gov/otaq/regs/nonroad/locomotv/420f09025.pdf>.

The Department of Transportation's (DOT) Surface Transportation Board requires all Class 1 railroads to report quarterly and annual fuel use for both switcher locomotives, which this cooperative agreement funded, and line-haul locomotives.⁴ DOT does not mandate reporting annual fuel use for each locomotive. BNSF switcher locomotives only consumed approximately 3.5% of the total fuel used for all BNSF locomotives in 2012.⁵ Railroads purchase their fuel in bulk and quantify the amount of fuel used for all locomotives, but rarely quantify fuel usage for individual locomotives. In addition, it is not common industry practice for Class 1 railroads to monitor fuel consumption on a data log for a given switcher locomotive, due to the high cost of tracking, monitoring and reporting. For these reasons, fuel usage estimates are used to quantify emission reductions in the railroad sector.

Requiring railroad DERA grantees to track and report fuel use data would be very time consuming and costly and seen as a heavy administrative burden. EPA uses the term "actual" in our cooperative agreement condition to differentiate from the initial estimate of emission reductions provided at the time of grant application. EPA updates emission reduction estimates when projects are completed. In the case of this grant, emission reduction estimates required an update to account for the fact that eleven locomotives were replaced instead of the eight assumed at the time of the application. EPA understands that the preliminary and final emissions calculations (multiplying an emission factor by a fuel consumption or vehicle usage estimate) lead to estimated vs. "actual" values. While more data could be gathered to improve those estimates, we will never be able to access actual emission reductions that would occur over the lifetime of the funded improvement (which extends well beyond the cooperative agreement period). Based on common industry practices and the way in which EPA quantifies emission factors for engines used in locomotives, CARB provided emission reduction calculations that are acceptable. EPA Region 9 and OTAQ believe the emission reduction figures CARB provided are the most accurate available and are certainly adequate for EPA purposes.

The IG's final report notes that "[t]he OIG does not question the emission reduction calculation methodology or the use of estimated emission factors for NOx or particulate matter" (p. 16). The report also states, "Unless CARB can provide actual fuel usage, the EPA and the public do not have reasonable assurance that the project will achieve projected emissions reductions or expected environmental results and human-health benefits" (p. 16). As described above, EPA Region 9 and OTAQ stand by our contention that CARB's emission reduction estimates have a high degree of integrity, and are sufficient to meet our data needs for assuring projected environmental results and human health benefits.

OTAQ recently revised its programmatic terms and conditions to clarify the reporting requirements for final DERA project emission reductions. The revised terms and conditions maintain EPA's commitment to achieving meaningful diesel pollutant emission reductions and enforcing necessary cooperative agreement terms and conditions, while addressing the technical and logistical realities of emissions estimation. Section D., "Final Report," of the FY2014 National Clean Diesel Funding Assistance (DERA) Programmatic Terms and Conditions begins as follows.

D. Final Report:

The final project report will include all categories of information required for quarterly reporting, including a final, detailed fleet description. The final project report will also include a narrative

⁴ DOT Surface Transportation Board's "Annual Reports R-1 Selected Schedules and Complete Annual Reports," http://www.stb.dot.gov/stb/industry/econ_reports.html.

⁵ BNSF's "Class I Railroad Annual Report Restatement To The Surface Transportation Board For the Year Ending December 31, 2012," Page 91 "750. Consumption of Diesel Fuel," <http://www.bnsf.com/about-bnsf/financial-information/surface-transportation-board-reports/pdf/12R1.pdf>.

summary of the project or activity, project results (outputs and outcomes) including final emissions benefit calculations, and the successes and lessons learned for the entire project. To the extent possible, final emission benefit calculations should be based on the actual number and type of technologies, vehicles, equipment and engines implemented under the award and actual vehicle miles traveled, idling and/or operating hours, and fuel use. If actual vehicle miles traveled, idling and/or operating hours, and fuel use are not available, the final report will include a detailed explanation of how these values are derived, as well as any assumptions or default values used, for the purposes of emissions benefit calculations. The final report will also detail the methodologies used for the emission benefit calculation.

The full terms and conditions document, as well as the corresponding document for the FY 14 DERA State Clean Diesel Program, is available at <http://www.epa.gov/ogd/tc.htm>.

CLOSEOUT AGREEMENT

This document sets forth the understanding of the parties in which BNSF Railway Company (BNSF) agrees to either scrap or remanufacture all of the eleven older locomotive engines funded under the American Recovery and Reinvestment Act (ARRA) of 2009, per Air Resources Board (ARB)/U.S. EPA (EPA) grant award terms and conditions. A remanufacture would be to a higher emission standard from a Pre-Tier 0 to a Tier 0+.

Background

- A. On July 10, 2009, U.S. Environmental Protection Agency (EPA) awarded \$8,888,888 to Air Resources Board (ARB) through the Cooperative Agreement 2A- OOT13801 - 0.
 - B. The purpose of the Cooperative Agreement was to repower a minimum of eight existing older switch (yard) locomotives with new Tier 3 non road engines, to reduce locomotive criteria and toxic pollutants in and around railyards in the South Coast Air Basin.
 - C. The original project period for the Cooperative Agreement was from June 15, 2009 to September 30, 2010. A one year no-cost extension for this project was later approved by EPA.
 - D. During the project period, ARB awarded up to \$8,866,000 of eligible costs to BNSF to fund eleven Genset switch locomotives in the South Coast Air Basin. ARB returned the remaining \$22,888 to EPA.
 - E. Scrappage and program income: Since this grant is already closed out, any funds generated from scrappage would not need to be returned to EPA/and or the federal government, but instead would be retained by BNSF.
 - F. Remanufacture: If BNSF chooses to remanufacture any of the older locomotive engines, BNSF will need to provide available information (i.e., maintenance records for the entire history of the older locomotive engine) that it has not been upgraded, repowered or refurbished in the past and that remanufacturing is not required by EPA's locomotive regulations.
- I. **Terms and Conditions for BNSF to Complete the Scrap or Remanufacture of Eleven Older Locomotive Engines**
- A. BNSF agrees to scrap or remanufacture all of the eleven ARRA funded older locomotive engines with serial numbers 7981-1145, 73E1-1096, 73M1-1035, 72B1-1080, 79J1-1038, 80E1-1057, 79J1-1028, 79C1-1184, 66D2-1017, 79C1-1071, 77D1-1050 in accordance with the scrappage/remanufacture terms and conditions in Paragraph P10 of the EPA/ARB Cooperative Agreement

attached (i.e., scrappage and/ or remanufacture requirements) to a cleaner emission standard from a Pre-Tier 0 to a Tier 0+ emissions level within eighteen (18) months after the signing of this Agreement.

- B. If there is a delay in the scrap/remanufacture process due to unforeseen circumstances, BNSF shall inform ARB in writing the reason for the delay at least 90 days prior to the end date of the scrap/remanufacture. BNSF may request a time extension in writing with the consent of all the signatories.
- C. BNSF shall provide ARB the engine serial numbers and or the vehicle identification numbers (VIN) of the scrapped and or remanufactured locomotive engines at the completion of the scrappage/remanufacture.
- D. At ARB's request, BNSF shall provide ARB the photographs showing the progress of the older locomotive engines being scrapped/remanufactured.
- E. BNSF understands and agrees that there is no cost to ARB or EPA for the scrappage/remanufacture of the eleven older locomotive engines.

II. Recordkeeping Requirements and Other Supporting Documents

- A. BNSF shall maintain all financial and programmatic records, supporting documents, and other records for activities funded under the Cooperative Agreement or the Closeout Agreement for a period of ten (10) years following the completion of the scrappage/remanufacture process.
- B. If any litigation, claim, negotiation, audit, cost recovery, or other action arises involving these records, of which ARB receives notice, BNSF must retain these records until completion of the action and resolution of all issues which arise from it, or until the end of the ten-year period, whichever is later.

III. ARB Update to EPA

After BNSF completes the scrappage/remanufacture of the older eleven locomotive engines, ARB shall provide an update to EPA to address compliance with the scrappage/remanufacture requirements of paragraph P10 of the Cooperative Agreement.

IV. Contact Information

The point of contact for ARB for all items in this Agreement shall be:
Douglas Ito, Chief Freight Transport Branch
California Air Resources Board
5th Floor-SSD, 1001 "I" Street
Sacramento, CA 95814
916-327-5981

The point of contact for BNSF for all items in this Agreement shall be:
Ryan Mills, Mgr. Environmental Engineering
BNSF Railway
2954 Williamsburg Ln.
Fayetteville, AR 72703
Ryan.mills@bnsf.com
785-250-4821

V. Modifications

This Agreement can only be modified in writing by the agreement of all the signatories. Oral or unilateral modifications shall not be effective or binding.

VI. Severability

If any provision of this Closeout Agreement is invalidated by a court of law, the parties shall remain bound to comply with those provisions of this Closeout Agreement that have not been invalidated.

VII. Signatures

This Agreement becomes effective on the date the last signatory signs it. Unless modified by written agreement of all the signatories, this agreement will remain in effect until all of the eleven BNSF older locomotive engines have been scrapped or remanufactured to a higher locomotive emission level from a Pre-Tier 0 to a Tier 0+.

On behalf of BNSF:



Date: 10/28/2013

John Lovenburg
Vice President, Environmental
BNSF Railway Company

On behalf of ARB:



Richard Corey, Executive officer
California Air Resources Board