U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

EPA's Alternative Asbestos Control Method Experiments Lacked Effective Oversight and Threatened Human Health

Report No. 14-P-0359 **September 25, 2014**

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Abbreviations

AACM	Alternative Asbestos Control Method
ADP	Action Development Process
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
NAA	No Action Assurance
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NRMRL	National Risk Management Research Laboratory
OAQPS	Office of Air Quality Planning and Standards
OAR	Office of Air and Radiation
OECA	Office of Enforcement and Compliance Assurance
OIG	Office of Inspector General
ORD	Office of Research and Development
OSHA	Occupational Safety and Health Administration
RACM	Regulated asbestos-containing material
U.S.C.	U.S. Code

Cover photo: An example of the beginning stage of the Alternative Asbestos Control Method process. The photo is from the AACM 3 report. (EPA photo)

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U.S. Environmental Protection Agency
Office of Inspector General

14-P-0359
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At a Glance

Why We Did This Review

The U.S. Environmental Protection Agency (EPA), Office of Inspector General (OIG), assessed the EPA's oversight of the Alternative Asbestos Control Method (AACM) experiments. This review follows EPA OIG Report No. 12-P-0125, *Early Warning Report: Use of Unapproved Asbestos Demolition Methods May Threaten Public Health*, issued December 14, 2011.

In 1999, the city of Fort Worth, Texas, proposed an alternative method to demolish asbestos-containing buildings. In 2003, the EPA's Office of Research and Development (ORD), National Risk Management Research Laboratory, took over and renamed the effort the AACM. The EPA's Office of Enforcement and Compliance Assurance enabled the experiments by granting enforcement discretion. The ORD terminated the project in 2011 due to technical deficiencies.

The report addresses the following EPA goal or cross-agency strategy:

- *Embracing EPA as a high-performing organization.*

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The full report is at: www.epa.gov/oig/reports/2014/20140925-14-P-0359.pdf

EPA's Alternative Asbestos Control Method Experiments Lacked Effective Oversight and Threatened Human Health

What We Found

The EPA conducted the AACM and Fort Worth Method research for over a decade without appropriate oversight or an agreed research goal. This resulted in wasted resources and the potential exposure of workers and the public to unsafe levels of asbestos. This occurred because:

Improving oversight of the EPA's research activities can minimize the risk of waste, noncompliance with EPA rules and policies, and project failures.

- The EPA offices involved did not conduct the research under a controlled and defined agency process that would have ensured consensus and oversight.
- The EPA disregarded research guidance designed to ensure research quality.
- The EPA agreed not to enforce environmental laws during the research when other legal means for conducting the research were available.

The EPA spent almost $2.3 million in contractor costs and expenses from 2004 through 2012, and $1.2 million in research staff time on AACM experiments from 2005 through 2012. However, these figures only represent a portion of the cost, since the agency does not track contributions from outside organizations or EPA staff time by project. The high dollar cost, potential public health risks, and failure of the AACM to provide reliable data and results are management control problems that need to be addressed.

Recommendations and Planned Corrective Actions

We recommend that the EPA improve research oversight by requiring significant research to follow a controlled process, tracking project costs and contributions, and reviewing and resolving internal EPA comments. We recommend that the EPA establish a process for the review of alternative regulatory emission control method submissions, and establish and follow standard procedures. We also recommend that the EPA improve controls over issuing No Action Assurance letters. The agency generally provided acceptable corrective actions. Ten of the 11 recommendations we made are resolved and corrective actions are ongoing or completed. One recommendation is unresolved, which the agency will need to address in its final response to the report.

Noteworthy Achievements

The ORD has adopted a new process to estimate the resources expected to be used on projects, which should provide an initial cost baseline for projects.

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

THE INSPECTOR GENERAL

September 25, 2014

MEMORANDUM

SUBJECT: EPA's Alternative Asbestos Control Method Experiments Lacked Effective Oversight and Threatened Human Health
Report No. 14-P-0359

FROM: Arthur A. Elkins Jr.

TO: *See Below*

This is our report on the subject review 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.

Action Required

In accordance with EPA Manual 2750, you are required to provide a written response to this report within 60 calendar days. You should include planned corrective actions and completion dates for all unresolved recommendations. Your response will be posted on the OIG's public website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at http://www.epa.gov/oig.

Addressees:
Lisa Feldt, Acting Deputy Administrator
Cynthia Giles, Assistant Administrator for Enforcement and Compliance Assurance
Janet McCabe, Acting Assistant Administrator for Air and Radiation
Lek Kadeli, Acting Assistant Administrator for Research and Development

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Chapter 1
Introduction

Purpose

The U.S. Environmental Protection Agency (EPA), Office of Inspector General (OIG), assessed the EPA's oversight of the Alternative Asbestos Control Method (AACM) demolition experiments. This review also addresses results of the EPA OIG Report No. 12-P-0125, *Early Warning Report: Use of Unapproved Asbestos Demolition Methods May Threaten Public Health*, issued December 14, 2011.[1] The AACM experiments are no longer occurring. This report documents how the EPA allowed these experiments to proceed, and identifies actions needed to better manage processes and resources to protect public health in the future.

Background

Asbestos is a human carcinogen with no known risk-free level of exposure. Asbestos exposure can lead to serious diseases, such as asbestosis, lung cancer and mesothelioma. In 1973, the EPA issued the asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) to protect human health by reducing asbestos exposure during building demolitions and other activities. According to the asbestos NESHAP and Occupational Safety and Health Administration (OSHA) regulations, trained technicians must remove regulated asbestos-containing material (RACM) intact prior to demolition. Removing RACM intact reduces asbestos fiber release.

NESHAP Efforts

- **Required NESHAP Revisions.** The EPA made its last comprehensive revision to the asbestos NESHAP in 1990. The 1990 Clean Air Act Amendments under Section 112(q) required that the EPA review the asbestos NESHAP by 2000. The EPA's Office of Air and Radiation (OAR) is responsible for the asbestos NESHAP, and the office said it does not have the resources to perform an asbestos NESHAP review and other required reviews.

- **EPA Offices Researched NESHAP Alternatives.** In 1999, the city of Fort Worth proposed its method to the EPA. EPA offices have researched alternative demolition work-practice methods, such as the Fort Worth Method and the AACM, as alternatives to the asbestos NESHAP. Both of these methods involve wetting the building prior to and during the demolition in an effort to limit asbestos fiber release. Both of these

[1] http://www.epa.gov/oig/reports/2012/20111214-12-P-0125.pdf

methods are similar to the NESHAP-approved provision used for buildings that are structurally unsound and in danger of imminent collapse (imminent collapse provision) found in the Code of Federal Regulations (CFR) under NESHAP 40 CFR § 61.145 (a)(3). Under the imminent collapse provision, demolition crews wet the RACM and use demolition equipment to break the RACM.

The goal of the AACM and Fort Worth Method research was to propose an alternative demolition procedure to the asbestos NESHAP. The city of Fort Worth proposed the alternative demolition procedure for "the demolition of substandard structures that are not in imminent danger of collapse." The AACM leaves some or all RACM in place and wets the building with amended water prior to and during the demolition in an effort to limit asbestos fiber release. *Amended water* is water to which surfactant (wetting agent) has been added to increase the ability of the liquid to penetrate asbestos-containing material. The Fort Worth Method used untreated water from a fire hydrant. Both methods use demolition equipment to break RACM.

Demolition equipment prepares to break RACM during an AACM experiment. (EPA photo)

- **NESHAP Requires Alternatives to Be At Least Equivalent.** Under the NESHAP at 40 CFR § 61.12 (d)(1), alternative methods must demonstrate at least equivalent emissions reduction as the current asbestos NESHAP method. That is, the alternative method must not emit more asbestos than the current method where trained technicians remove RACM intact by hand (not the imminent collapse provision). In this report, we refer to this issue as "NESHAP equivalency." Alternatives

must also undergo public notice and comment prior to Administrator approval.

Alternative Asbestos Control Method Research

The EPA conducted the AACM and Fort Worth Method research from 1999 until the work on the effort was terminated in 2011. The three demolitions occurred over a few days each in 2006 and 2007.

Fort Worth Method Proposed to EPA

In 1999, the city of Fort Worth proposed the Fort Worth Method for the Project XL program. Initiated in 1995, Project XL was a national EPA initiative to develop and test innovative approaches to achieve better and more cost-effective environmental and public health protection. Some EPA offices—including the Office of Research and Development's (ORD) National Center for Environmental Assessment, the OAR's Office of Air Quality Planning Standards (OAQPS), the Office of Enforcement Compliance Assurance (OECA), Regions 5 and 6, the Office of General Counsel, the OIG, and the Office of Policy—raised concerns about the Fort Worth Method's possible impacts on human health and the EPA's lack of data for determining NESHAP equivalency.

Specific concerns included:

- The lack of scientific basis to support the use of ambient air monitoring to protect public health or demonstrate NESHAP equivalency.
- Compliance with or obtaining waivers to OSHA requirements.
- The integration of team comments into the experiment's design.
- The persistence of fibers from fugitive emissions in the environment.
- Whether the proposed method could provide an equivalent or better emission reduction solution.

Fort Worth Method Removed from Project XL

In September 2003, Region 6 and the city of Fort Worth decided to remove the Fort Worth Method from Project XL to "expedite the approval process." Both the city of Fort Worth and Region 6 approached OECA to request enforcement discretion. However, unresolved issues remained. For example, OAQPS staff still questioned how to assess NESHAP equivalency and whether the experiment's design would provide the data needed for an equivalency determination.

OIG Report on the Fort Worth Method

Three months later, EPA OIG Report No. 2004-P-00002, *Significant Modifications Needed to Ensure Success of Fort Worth Demolition Method*, issued December 19, 2003,[2] cited national policy implications and the precedent-setting nature of the project and provided key recommendations. These recommendations included identifying equivalent asbestos emissions to ensure a representative comparison to the Asbestos NESHAP, developing an agreement to adequately address key project criteria such as determining what constitutes superior environmental performance, testing within the scope of applicable laws and regulations, and ensuring adequate stakeholder involvement and consideration of concerns. The OIG further recommended the agency design the project to reach complete, reliable and valid conclusions, and specify human-health protections that ensure protection at least equivalent as the asbestos NESHAP method. The OIG also recommended that the agency develop a single guidance document for proposals under the agency's innovation strategy which provides fundamental criteria and is published in the Federal Register to ensure national policy decisions are based on sound science. This guidance includes considering expertise within the agency, assessing the technical merits and enforceability of proposed projects, and requiring peer reviews of proposals with national policy implications.

In April 2004, as part of the response to the OIG's recommendations, Region 6 (on behalf of ORD, OAR, OECA, and the Office of Policy Economics and Innovation within the Office of Policy) informed the OIG of the decision not to continue the Fort Worth Method under the Project XL process. Further, on July 22, 2004, the EPA announced that the Fort Worth Method would be tested someplace other than the city of Fort Worth, Texas.

Region 6 and NRMRL Rename the Experiments

The decision to remove the Fort Worth Method from Project XL was followed by another decision. Region 6 and the ORD's National Risk Management Research Laboratory (NRMRL) continued the experiments, renaming the effort the AACM and using amended water instead of the fire hydrant water used in the Fort Worth Method. The NRMRL refined and implemented technical aspects of the experiments, while Region 6 coordinated the effort among offices. For example, Region 6 obtained OECA assurances that OECA would not take enforcement action against the EPA or contractor personnel for asbestos NESHAP violations during the experiments. The research goal of Region 6 and the NRMRL was to determine whether the AACM could be an alternative demolition method to the current asbestos NESHAP procedure and lead to a regulatory change.

[2] http://www.epa.gov/oig/reports/2003/20031219-2004-p-00002.pdf

The NRMRL's AACM research effort consisted of three demolition experiments or tests, wherein asbestos-containing buildings were demolished using the AACM approach. The AACM 1 experiment was conducted with on-site support from the Fort Chaffee Redevelopment Authority and consisted of demolishing two nearly identical 1940s-era buildings in late April and early May 2006 at Fort Smith, Arkansas. The AACM 2 demolition experiment occurred on July 28, 2007, on a two-story, World War II-era building at Fort Chaffee, Arkansas. The AACM 3 demolition experiment was a joint effort with the city of Fort Worth, Texas, at the former Oak Hollow Apartments on December 17, 2007.

AACM 1 Final Report Completed

The AACM 1 project plan was peer reviewed in February 2006 and the AACM 1 draft report on the results of the experiment was peer reviewed in June 2007. The EPA published the peer-review comments in August 2007, and the agency's responses in November 2007. In October 2008, the NRMRL published the final report for the AACM 1 demolition experiment. The report was revised in December 2009 to correct an error made in the report.

AACM 2 and AACM 3 Final Reports Were Not Completed

The NRMRL prepared and submitted the draft AACM 2 and AACM 3 reports for peer review in July 2008, and published the peer-review report and the EPA's response to comments in October 2009. Further, on December 25, 2008, the NRMRL prepared another draft report comparing the AACM to the asbestos NESHAP method, but this report was not peer reviewed or published. The NRMRL did not complete the final reports for the AACM 2 or the AACM 3 experiments.

ORD Cancels Experiments

On July 29, 2011, the ORD Assistant Administrator, based on a request from the ORD Deputy Assistant Administrator, cancelled the AACM research effort citing technical problems and a desire to use ORD resources to provide support to higher-priority research. The EPA took action to clarify the status of the AACM research by updating 17 pages on its Science Inventory website, noting that "The AACM remains unapproved and should not be used."

Scope and Methodology

We conducted our performance audit from March 2012 through May 2014 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our evaluation scope covered the AACM research from 2004 through 2011, including the experiments that took place in 2006 and 2007. We reviewed past and current EPA regulations, policies, procedures and guidance to identify processes, controls and expectations for coordination and research design. We reviewed documents from 1999 through 2004 for the Fort Worth Method experiments to understand the origin of the AACM experiments. We analyzed internal and external comments and staff correspondence gathered from the 2004 Fort Worth Method, and 2010 AACM Freedom of Information Act requests. We also interviewed current and former EPA personnel from the Office of Policy, OECA, OAR, ORD, the Office of General Counsel, the Office of Solid Waste and Emergency Response, and Region 6.

We did not assess the technical design, laboratory results or scientific analysis of the AACM experiments. We limited our review to management controls in place during the AACM experiments. When brought to our attention, we incorporated policy and procedure changes implemented since the AACM experiments. However, this evaluation did not assess the effectiveness of the newer policies and procedures.

Prior Evaluation and Audit Coverage

EPA OIG Report No. 2004-P-00002, *Significant Modifications Needed to Ensure Success of Fort Worth Demolition Method*, December 19, 2003: Having already summarized relevant recommendations from this report, we will not discuss the report further here.

Government Accountability Office Report No. GAO-06-669, *EPA Should Improve the Management of Its Air Toxics Program*, June 2006: The report discussed the need to improve the Clean Air Act air toxics program and stated that one of the primary challenges in complying with the requirements was insufficient resources to meet the large number of requirements in the specified timeframes.

EPA OIG Report No. 09-P-0232, *EPA's Office of Research and Development Could Better Use the Federal Managers' Financial Integrity Act to Improve Operations*, September 15, 2009: The OIG recommended that ORD management assess program risk and improve internal controls over research programs.

EPA OIG Report No. 11-P-0333, *Office of Research and Development Needs to Improve Its Method of Measuring Administrative Savings*, July 14, 2011: The OIG reported that ORD does not track personnel costs by individual research project. Specifically, interviews with ORD's National Program Directors that lead development of ORD's multi-year plans cited difficulties in managing research programs, such as limited access to information on funding spent against the budget and staff time charges to research programs.

EPA OIG Report No. 12-5-0125, *Early Warning Report, Use of Unapproved Asbestos Demolition Methods May Threaten Public Health*, December 14, 2011: During our initial research we found that unapproved methods of asbestos demolition were being used or considered at multiple sites. We also found that unprotected workers adjacent to the restricted areas, and members of the public in the vicinity of the AACM experiment sites, may have been exposed to asbestos. The early warning report identified six issues requiring the EPA Administrator's immediate attention. The EPA agreed with our report. As part of its response to our report, the EPA issued letters in April 2013 to current and former agency employees, state and local employees, contractors, and members of the public, advising them of their potential exposure to asbestos as a result of the AACM experiments. All corrective actions are certified complete by the Deputy Administrator.

Responsible Offices

The offices responsible for implementing the audit recommendations included in this report are the Office of the Deputy Administrator; OECA; ORD and its National Risk Management Research Laboratory; and OAR's OAQPS.

Chapter 2
EPA's Use of Enforcement Discretion to Continue the Experiments Increased Risk

The EPA had three methods that it could use to pursue changes to the asbestos NESHAP. However, on April 20, 2004, the EPA chose to use its enforcement discretion, which would excuse violations of environmental laws and is not designed as a way to pursue regulatory change. Enforcement discretion is not part of the NESHAP provision for rule changes, and does not have the strong research control mechanisms of other options, such as obtaining stakeholder consensus or addressing project shortcomings. The AACM experiments proceeded under enforcement discretion, as requested by Region 6, because a former OECA Assistant Administrator and a former Acting OECA Assistant Administrator and their staff did not follow OECA's enforcement discretion policy. The use of enforcement discretion allowed the experiments to continue, and gave testers immunity from certain violations of environmental laws during testing. Enforcement discretion increased the risks to the project as key issues, such as NESHAP equivalency, remained unresolved.

Available Methods for Conducting the AACM Project

The EPA had three mechanisms that would have forced stronger internal controls over the AACM research had they been followed throughout the research. These included Project XL, the Action Development Process (ADP), and NESHAP's approval process for alternative emission control methods under 40 CFR § 61.12(d). We address these three below.

Project XL

The Project XL innovation program was a national pilot program announced in the Federal Register (60 FR 27282) in May 1995. The EPA states that it has since been eliminated and stopped accepting new projects for consideration. Project XL allowed for the testing of alternative methods when all involved parties (i.e., the EPA, project proponents, and state or tribal environmental agencies) negotiate and approve a Final Project Agreement. The EPA's Project XL program encouraged partnership and innovation, but required parties to reach concurrence that a new method achieves superior environmental performance before the parties sign a Final Project Agreement to move forward. From 1999 through 2003, Region 6 and the Office of Policy were unable to obtain agreement from EPA offices about the efficacy of the Fort Worth Method. Region 6 and the city of Fort Worth eventually removed the Fort Worth Method from Project XL to expedite the approval process for the phase 2 demolitions.

The EPA could have decided to continue the research effort within the Project XL process. The main internal control in this process is that the parties must reach consensus that the proposed alternative method will have superior environmental results to those achieved by current environmental regulation. In the case of the Fort Worth Method, efforts to achieve consensus within the EPA failed and a Final Project Agreement was never signed. The decision to take the Fort Worth Method out of the Project XL process also removed the Office of Policy as the project's facilitator. This decision placed responsibility on Region 6 and the NRMRL to administer a work group that had already worked for several years without reaching agreement.

The Action Development Process

The ADP is the EPA's process for rule development. The use of the ADP is not mandatory, but its emphasis on early involvement by management; prompt elevation of issues; and consideration of all scientific, economic, and policy issues provides a framework and means of management control, oversight, and internal review and approval. In 2007, Region 6 and the OAR entered an AACM proposal into the ADP, but requested the proposal's removal on January 15, 2008. EPA's Regulatory Information Notice data for 2060-A064 states the following reason for withdrawing the regulatory action: "However, we determined that initiating this action was premature because we had not completed testing the AACM. Therefore, we have withdrawn this action until all testing and evaluation of the test results, including peer review, are complete."

The ADP process was designed in the 1990s to meet the EPA's regulatory obligations under the Administrative Procedures Act and Office of Management and Budget Circular A-4.[3] The EPA developed the ADP process to ensure that agency rules and regulations are of consistently high quality, involve senior managers early in the development process, are supported with strong analysis, and are developed via an open process. The ADP tasks intra-agency work group members to identify and ensure that all significant issues and options are addressed during rule-making. The main internal control of the ADP is the requirement to elevate unresolved issues to EPA management for resolution.

NESHAP Alternative Method Approval

The NESHAP regulation at 40 CFR § 61.12 (d) provides for the submission of an alternative emission control method to the EPA for review and approval. The OAR oversees the NESHAP and after review may recommend a proposed alternative to the Administrator. The NESHAP regulation allows anyone to submit an alternative emission control method to the EPA for review and approval. The EPA must provide for public notice and comment before the Administrator can approve an alternative method. Therefore, the EPA must adequately address or resolve all public comments or issues prior to the Administrator approving the

[3] Office of Management and Budget Circular A-4, *Regulatory Analysis*, dated September 17, 2003.

alternative emission control method. Since the OAR administers the NESHAP, the OAR must also concur with the submission, and review and recommend NESHAP alternatives to the Administrator. The NESHAP process would have forced EPA to follow stronger internal controls for the AACM research if that mechanism had been selected. Region 6 and the ORD did not apply for approval for an alternative demolition method under 40 CFR § 61.12 (d).

OECA Provided Protection From EPA Enforcement in Violation of Its Own Policy

The EPA has discretionary authority to allow rule violations in certain circumstances. The OECA's exercise of discretionary authority allowed the alternative asbestos demolition experiments to continue outside of a controlled laboratory setting, without the threat of enforcement for violating environmental laws. This authority is solely exercised by the Assistant Administrator for OECA. When the EPA exercises this discretionary authority, the Assistant Administrator for OECA issues a No Action Assurance (NAA) letter that describes the use of enforcement discretion. The NAA letter is a commitment from the EPA that the violation at issue will not be prosecuted. The main internal control associated with the enforcement discretion approach lies in the OECA review that ensures no other research method is available. Region 6 requested and obtained NAA letters from the OECA to expedite testing.

The AACM experiments proceeded under enforcement discretion, as requested by Region 6, because a former OECA Assistant Administrator and an Acting OECA Assistant Administrator and their staff did not follow OECA's enforcement discretion process. The Region 6 Administrator requested NAA letters from OECA for the AACM 1 and AACM 3 studies in August 2005 and November 2007, respectively. One former OECA Acting Assistant Administrator granted the NAA letter for the AACM 1 on August 10, 2005. Another former OECA Assistant Administrator granted the NAA letter for the AACM 3 on December 4, 2007. The OECA management also provided a tentative NAA letter for the second phase of the Fort Worth Method on January 26, 2004. Region 6 did not request an NAA letter from the OECA for the AACM 2 experiment in July 2007. Instead, the ORD obtained a declaration from the city of Fort Smith, Arkansas, which said the asbestos-containing building was structurally unsound.

No Justification for NAA Approval

In 1984, the OECA issued an enforcement discretion policy discussing steps to follow for the issuance of NAA letters. The NAA letters provide for temporary suspension of enforcement against specific environmental regulations in "extremely unusual cases." However, according to the policy, the OECA should not issue enforcement discretion to conduct research or other activities if other mechanisms exist. As discussed previously, at least three other mechanisms could have been used to move forward with the experiments.

The OECA's enforcement discretion policy also requires all instances of enforcement discretion to have supporting documentation that provides an explanation of the reasons justifying issuance of the NAA letter. The OECA does not have supporting documentation that provides justification for the issuance of NAA letters for either the AACM 1 or the AACM 3.

NAA Conditions Unverified and Unaddressed

The NAA letters for the AACM 1 and AACM 3 identified conditions for Region 6 and the NRMRL to meet prior to and following the experiments. However, we were unable to identify evidence that the OECA staff verified compliance with the stated conditions. For example, the NAA letter for the AACM 1 stated that the protocol should include numerous provisions to ensure the protection of public health and the environment; and that after peer review, the protocol should be refined to ensure that it is, in fact, protective. We were unable to identify any evidence that the OECA verified that public health provisions had been added to the protocol. For example, the peers questioned the AACM 1's compliance with OSHA's worker excursion sampling regulations and the adequacy of emission controls, and suggested the inclusion of additional emission measurements to better define the levels of asbestos emissions and identify possible public exposures. Our review of the AACM 1 final report found no mention of excursion sampling being used.

The NAA letter for the AACM 3 included the condition that the AACM 3 quality assurance project plan incorporates recommendations from the AACM 1 peer reviews to ensure that the experiment was protective of public health and the environment. We have no evidence that the OECA verified that this precondition was met. Our analysis of peer-review comments showed many unresolved concerns regarding public health and the environment that were never addressed by the ORD during the 12 years of the effort. When asked why the OECA granted the NAAs without ensuring conditions were met, the then-OECA Associate Director, Office of Civil Enforcement, Air Enforcement Division,[4] said they typically give deference to sister offices, and that they were relying on the NRMRL's demonstrations and statements that AACM experiments would be protective.

EPA's Enforcement Discretion Left Key Issues Unresolved

At least three methods—Project XL, the ADP and the NESHAP—have controls in place that would have required that significant issues identified during the AACM experiments be resolved before receiving approval to conduct the experiments. Although the NAA letters that the OECA issued for AACM experiments included preconditions for approval, the letters did not mention the existing internal issues with the experiments. Further, there is no evidence that

[4] This individual is currently the Deputy Director of the Office of Civil Enforcement.

the OECA verified the resolution of the preconditions and internal issues, or obtained concurrence from the offices that were impacted.

The Key Issue Was Equivalent Emissions

For the AACM research, the main unresolved issue was how to demonstrate equivalent emissions to the asbestos NESHAP. During the method development in 1999, Project XL work group members identified the need to determine equivalency as a major issue. The EPA offices involved—including Region 6, ORD, OECA, OAR, and the Office of Policy Economics and Innovation—left the issue of equivalency unresolved while allowing the research on the experiments to go forward for 12 years. Consequently, the EPA could not use the resulting data to propose NESHAP amendments, because known NESHAP equivalency problems with Project XL and AACM experiments remained unaddressed.

Only the OAR, as the administrator of the NESHAP, can clarify what constitutes equivalent asbestos emissions. Without this definition, the ORD could not develop an experimental design that met the OAR's needs. However, the steps to obtain a definition from the OAR and information needed are not clear. The NESHAP regulation provides limited details on what information should accompany an application, and the OAR has no guidance or procedures for submissions. Due to the lack of resolution on how to demonstrate equivalent emissions to the asbestos NESHAP, and the lack of guidance on the procedures for application submissions, the EPA could not use the resulting data to propose NESHAP amendments.

Conclusions

The EPA's selection of enforcement discretion enabled the ORD and Region 6 to continue with the AACM experiments without the benefit of leadership from the Office of Policy, and without obtaining consensus among the other stakeholders. Removing the AACM tests from processes such as Project XL and the ADP eliminated the requirement for stakeholders' consensus. This choice eliminated critical internal controls in the research process because stakeholders had identified significant impediments. By not addressing stakeholder-identified impediments, Region 6 and the ORD continued down a path that would not achieve the rule-making goal. Had the EPA continued with Project XL, the ADP, or initiated the NESHAP process, the AACM research would have had stronger internal controls.

The OECA's decision to grant enforcement discretion, contrary to policy and without verifying that the AACM complied with conditions for granting enforcement discretion, demonstrates a breakdown in the OECA's management controls. If the OECA management controls had been followed, the office would have known that enforcement discretion was not appropriate for AACM experiments. Further, the lack of an OAR equivalent emissions target to measure

the effectiveness of AACM research severely limited the chance for the AACM to be successful. Consequently, the AACM experiments could have been modified or terminated sooner. The EPA's current policies and procedures do not appear to address these issues and would not prevent a reoccurrence on other research projects.

Recommendations

The Deputy Administrator should:

1. Require that all nationally significant research, and research conducted to support a rule-making, enter and follow a process that includes oversight and input from agency senior leadership; those familiar with the rule-making process; and individuals familiar with applicable and relevant legal and policy requirements.

The Assistant Administrator for Enforcement and Compliance Assurance should:

2. Require all NAA letters to state that a review was performed to identify methods other than enforcement discretion and that no other methods were found.

3. Provide notice to all EPA offices that an NAA letter is being proposed and require documented feedback from all offices.

4. Verify information provided to support the NAA letter request.

5. Document compliance with the provisions of the NAA letter (both pre- and post-issuance).

The Assistant Administrator for Air and Radiation should:

6. Establish a process for the submission, review and approval of alternative NESHAP emission control methods.

Agency Response to Draft Report and OIG Evaluation

We received a response to the draft report from the Deputy Administrator along with technical comments from OAR, ORD, and OECA. Appendices A and B contain the agency's comments on the recommendations and their technical comments, respectively, along with the OIG's detailed responses.

The EPA agreed with our recommendations and provided corrective actions that are sufficient to meet the intent of the OIG recommendations. Recommendations 1 through 6 are resolved. Recommendations 1 through 5 are closed with completion dates of October 2012 and August 2014, while Recommendation 6 is open with corrective action pending.

Chapter 3
Management Practices at EPA's Office of Research and Development Were Ineffective for AACM Research

The ORD's management allowed the AACM experiments to bypass agency controls designed to ensure that experiments would be relevant, conducted appropriately, and useful to the EPA and the public. Actions taken by the ORD undermined the AACM research and led to the termination of the AACM research in 2011. The ORD's NRMRL management and staff:

- Disregarded agency guidance and procedures by not entering the AACM experiments into the ORD's research planning process.
- Did not ensure compliance with NESHAP equivalency.
- Did not address significant comments and concerns as detailed in this report.

As a result, the AACM experiments provided no benefit. The NRMRL did not:

- Comply with health and safety requirements, and a lack of consideration of environmental impacts led to the potential exposure of workers and the public.
- Ensure quality and accuracy in the collection of evidence regarding costs, which led to the publication of the AACM 1 report with unsupported conclusions.
- Provide oversight of the AACM experiments, which resulted in the use of staff time and agency resources that might have been applied to other research.

ORD Did Not Provide Effective Oversight of AACM Research

The ORD's NRMRL did not provide effective oversight of the AACM research when it did not enter the AACM experiments into its research planning process, did not request a definition of equivalency from OAQPS to ensure compliance with NESHAP equivalency, and did not address stakeholder and reviewer concerns regarding the experiment design and results. The NRMRL's oversight of these key areas would have helped to ensure that the tests were properly conducted and that relevant data was collected.

Research Planning Process

The ORD's research planning process develops multiyear plans to outline its program goals, outcomes and key products. These plans are used to convey the overall research direction for each of its six research programs' vision, priorities and connection to the EPA strategic plan. On an annual basis, each of the research programs develops research products and outputs to be delivered based on appropriated funding levels. This higher level of planning strengthens the ORD's research planning process to be, among other things, more responsive to the EPA's mission, timely and more transparent.

The ORD's research is typically entered into these plans, but labs can conduct "ad hoc" research if the lab director believes that research falls within broader goals. Although AACM experiments were responsive to a need identified by Region 6, the lack of entry into the ORD's planning process meant that the AACM experiments bypassed program office strategic planning and management oversight. This decision by ORD management affected the quality, support and overall success of the project.

Research Funding

Entering the AACM research into the ORD's research planning process could have addressed funding issues. On an annual basis, each research program develops research products and outputs based on appropriated funding levels. In the case of the AACM research, despite the lack of entry into the ORD's planning process, the AACM work group obtained funding from various offices and the Regional Geographic Initiative.[5] The NRMRL reported that it spent at least $2.29 million of EPA funds on the AACM experiments from 2004 through 2009. This amount included nearly $2.2 million in contractor costs and more than $140,000 in travel expenses. However, these amounts do not capture the full research cost.[6] If the ORD had a method for capturing these contributions at the project level, that method would have enabled the EPA to account for and report the total AACM costs.

AACM Funding Inconsistencies

Despite the availability of research funds, the AACM research still experienced inconsistent funding that may have affected the quality of the experiments by limiting the types of activities the ORD could undertake. Specifically, to reduce costs, the NRMRL altered the AACM research design by foregoing the side-by-side comparison test design used in the AACM 1, and instead conducted a

[5] The EPA established the Regional Geographic Initiative in 1994 to support the EPA's regional offices' place-based approaches to environmental problems unique to the regions and unaddressed by existing national programs. Initiative funding ranged from $8.4 million to $12.7 million per year until funding was eliminated by Congress in fiscal year 2008 due to "continued concerns about the scope and purpose of the program."

[6] The ORD does not collect data to show portions paid by other entities, such as contributions from the Fort Chaffee Redevelopment Authority in Arkansas, and the city of Fort Worth, Texas.

single-building demolition for the AACM 2 and the AACM 3. This choice meant that comparative data was not available to defend the NRMRL's hypothesis that the AACM is equivalent to the current NESHAP method.

Accounting for Staff Costs

The NRMRL cannot fully account for the cost of the AACM experiments because the NRMRL does not track the number of staff hours spent on projects. This missing accounting control leaves the NRMRL unable to calculate the full cost of any research project and limits the agency's oversight of the NRMRL's accountability for resources. For example, the NRMRL reported that from 2005 through 2012, a total of 11 staff worked on the AACM experiments at least part time. These staff represented almost nine full-time equivalents, or approximately $1.2 million dollars. However, these 11 NRMRL staff may represent those with the greatest contribution to the AACM effort. Our review found that the Fort Worth Method and AACM experiments involved more than 200 EPA staff in some way.

NRMRL Did Not Request a NESHAP Equivalency Definition

The NRMRL did not request a definition of NESHAP equivalency from the OAR, which is the program office responsible for recommending and processing the approval of an alternate method. The NRMRL program manager for the AACM, now retired, told us that he created his own measure of equivalency when the OAR did not agree with the plans. He also noted that he was not a regulator and that the research team may not have known enough about equivalency and rule-making requirements. Consequently, the NRMRL executed the AACM experiments with no means to assess NESHAP equivalency. This action may have put the health of people near the experiment at risk and does not support an effective use of public funds and resources.

Project XL Issues Remained Unresolved

The NRMRL also failed to address specific stakeholder issues associated with the experiments. The ORD's research process encourages collaboration with program offices prior to and during research to improve the quality and usefulness of ORD products. Peer reviewers and work group members repeatedly raised the same issues over the course of the Fort Worth Method. A 2004 facilitated meeting of the Fort Worth Method work group (comprised of many of the same staff as the AACM work group) identified and documented 32 internal issues with the Fort Worth Method. We found that peer reviewers in 2007 again raised almost identical issues for the AACM 1 experiment.

Table 1 shows some of the similar concerns identified in 2004 and 2007. This comparison indicates that the ORD did not require the NRMRL to resolve issues the work group and peer reviewers raised during the Fort Worth Method version of the method as a condition for commencing AACM experiments. The decision

not to resolve these issues negatively affected the experiments because these issues go to the heart of experimental design as related to safety, compliance with the law, and the ability of the experiments to decide the merits of the proposed alternative method.

Table 1: Comparison of experimental design concerns from the Fort Worth Method (2004) and the AACM (2007)

Fort Worth Method facilitated meeting comments (2004)	AACM 1 report's peer-review comments (2007)
There are questions about the variability and "effectiveness of ambient air monitoring" to measure asbestos release.	"Air sampling results used to compare the two methods were inconclusive."
Lack of details about how the "Fort Worth Method satisfied OSHA requirements," including why proposals for worker "exposure-based monitoring" were not in the plan.	Did not "properly cite the appropriate regulations" to show compliance with OSHA rules, including the type of "respiratory protection and protective clothing" used by workers.
There is a "lack of storm water run/on run/off and soil infiltration controls."	There is a lack of soil samples taken "pre- and post" NESHAP abatement, lack of details on how to collect the amended wastewater, and whether Clean Water Act regulations apply to asbestos.
There are "no data to verify cost savings."	"Understatement of AACM costs" and "overstatement of NESHAP costs."

Source: OIG review of EPA-provided documents.

NRMRL Did Not Adequately Address Health and Environmental Issues in AACM Experiments

The NRMRL's experimental design for the AACM did not adequately address health and safety issues for workers and the public, or consider potential environmental impacts. As late as 2010, there were 12 outstanding health and safety questions identified by the NRMRL's Safety, Health and Environmental Management Office and other EPA offices. The NRMRL management and staff commented to the ORD Deputy Assistant Administrator for Science that health and safety questions were outside the scope of the project. There were unresolved questions about the work area, level of worker respiratory protection, and the addition of weight to a building in imminent danger of collapse.

In EPA letters written to people potentially exposed to asbestos as a result of the AACM experiments in 2013,[7] the NRMRL admitted that it was unable to produce data required to quantify asbestos exposure levels associated with the AACM experiments. During our review, the NRMRL reported that it had

[7] The letters are in response to our December 2011 Early Warning Report (Report No. 12-P-0125) previously cited.

updated its procedures for the review and approval of health and safety plans, and hired additional staff. However, there are still no procedures in ORD guidance or policy specifically requiring research teams to identify job-specific regulatory requirements to ensure compliance and proper contractor oversight.

The NRMRL officials also cannot verify the completion of the environmental review and Environmental Impact Statement (EIS) for the AACM, as required by the ORD NEPA policy, and 40 CFR Part 6.[8] The environmental review ensures federal actions, including research experiments, consider the environmental effects on test environments. A former NRMRL AACM program manager, who is now retired, told us that the NRMRL left employees to their own resolve with respect to NEPA requirements, and that NRMRL contractors typically handled NEPA requirements and the EIS. In fact, the former program manager noted that his people did not understand NEPA.

NESHAP Violations Occurred Outside the Statute Of Limitations

Region 6 did not request an NAA letter from the OECA for the AACM 2 experiment in July 2007. Instead, the NRMRL obtained a declaration from the city of Fort Smith, Arkansas, which stated that the asbestos-containing building scheduled for demolition was structurally unsound. This declaration allowed the NRMRL to demolish the building under the NESHAP's imminent collapse provision. However, the NRMRL then added more than 3 tons of Transite®, an asbestos-cement product, to the building to increase the building's asbestos levels. Without an NAA letter from the OECA, all environmental laws would have applied to the AACM 2 demolition. The purpose of the NESHAP is to reduce emissions and adding 3 tons of Transite® increases emissions. Therefore, this is a NESHAP violation. Further, the addition of more than 3 tons of Transite®, increases the weight on the unsound structure. Therefore the imminent danger of collapse designation does not appear to be supported. According to 42 U.S. Code (U.S.C.) § 7413, potential penalties for NESHAP violations include written warnings, fines, and in some instances jail time. The OECA needed to determine the applicability of any penalty in this instance. OECA responded that the statute of limitations had expired on this issue. Upon further examination of this issue, we agree.

[8] We believe the most applicable subsection in the EIS regulation is Title 40 CFR §6.207(a)(3)(vii), which states that an EIS is normally required when "[t]he proposed action involves uncertain environmental effects or highly unique environmental risks that are likely to be significant."

Lack of Pre-discharge Testing Enhanced Possibility of Clean Water Act and CERCLA 103 Violations

The EPA's National Recommended Water Quality Criteria, which EPA issues pursuant to Section 304(a) of the Clean Water Act (CWA), have limits on the discharge of certain contaminants into the waters of the United States. For asbestos, the maximum contaminant level developed under the Safe Drinking Water Act is no more than 7 million fibers (longer than 10 micrometers) per liter. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), § 103 [42 U.S.C. § 9603], requires the reporting of hazardous substance spills or releases beyond a certain quantity into the environment. Further, the law requires the individual in charge of a facility to immediately notify the National Response Center of a hazardous substance release that is equal to or in excess of its reportable quantity. For asbestos, the reportable quantity is 1 pound of asbestos fibers released in a 24-hour period. However, the AACM project team was not aware of the legal limit on asbestos discharge. During the peer review of the AACM 1 report, the now-retired NRMRL program manager said he believed that no regulations existed on the discharge of asbestos into water.

Prior to filtration, the runoff water from the AACM 1 and AACM 2 experiments significantly exceeded CWA discharge limits and CERCLA reportable quantity for asbestos. For example, the AACM 1 report lists asbestos concentrations in the wastewater as 30.4 million structures/liter, and the AACM 2 report listed an average asbestos waste water concentration of 1,240 million structures/liter. The NRMRL did filter the runoff water, but did not test the filtered water to confirm that the water complied with CWA and CERCLA requirements prior to discharge. Therefore, the NRMRL has no evidence that the wastewater discharged from the AACM 1 or AACM 2 complied with the CWA and CERCLA. The experiments may have discharged potentially noncompliant wastewater into the public sewer.

Cost Conclusions of the AACM 1 Report Were Unsupported

The NRMRL published the AACM 1 report and concluded that the AACM method is more cost effective than the current NESHAP method. However, peer-review comments and our attempts to verify cost figures found that the NRMRL's conclusions about costs are unsupported and unverifiable. Errors related to costs undermine one of the AACM experiment's primary objectives—to assess whether the AACM is more cost effective than the NESHAP method when considering all costs.

The AACM 1 report stated that the cost of the NESHAP method was twice the cost of the AACM method. However, peer reviewers and the public raised questions of bias and provided supporting data suggesting the underreporting of the AACM costs and the overreporting of NESHAP method costs. Our review of data provided by outside reviewers shows that the NESHAP method was $1,300

less than the AACM method. We also found inaccuracies and a lack of documentation to support the AACM 1 report's cost conclusions. For example, we were unable to verify asbestos waste amounts for each building, the cost of labor for site mobilization, or verify the time it took to conduct demolitions. The cost issues raised by those outside the EPA, in addition to our review, suggest that the AACM 1 report's conclusions about costs are not supportable because the EPA did not capture enough quality data to verify actual costs. These errors resulted in a published report that leads readers to conclude that the AACM is a significantly less costly method.

AACM 2 and AACM 3 Reports Contained Cost Errors

Draft reports for the AACM 2 and AACM 3 experiments also included cost conclusions that lacked appropriate support. For the AACM 2, there were discrepancies with total landfill disposal charges and the number of hours worked. The July 14, 2008, AACM 2 draft report approved by the NRMRL quality assurance officer stated that the NESHAP method was approximately $3,700 cheaper than the AACM. However, these figures were different in the July 21, 2008, version sent to peer reviewers. This version showed the AACM method as almost equal to the NESHAP, with a difference of about $700, which made the AACM slightly less costly.

The largest change in cost between these versions was an unexplained reduction in the AACM disposal cost of about $7,400 from what was approved by the quality assurance officer. Interviews with NRMRL staff regarding this discrepancy did not identify a cause for this change. The now retired NRMRL program manager could not explain how or why cost figures changed. He said they worked on the reports for "thousands of hours," were rushing to get the reports out, and took responsibility for any inaccurate information in the draft.

Conclusions

Ineffective ORD oversight enabled the AACM to be conducted outside of the ORD planning and budgeting process, and left the AACM disconnected from the EPA's strategic plan goals. Conducting the AACM outside of the normal management control process led to inconsistent funding support and experimental design changes that sacrificed comparative demolition data between the AACM and NESHAP processes.

Key decisions on health and safety issues and how to decide equivalency were allowed to go unresolved. Specifically, the NRMRL created and implemented a plan that missed relevant and important CWA and CERCLA § 103 requirements, did not capture costs, potentially exposed workers and the public to unsafe levels of asbestos, and may have violated the NESHAP. Consequently, the NRMRL could not produce reports to answer the fundamental question of whether the proposed alternative is better and less expensive than the NESHAP method.

There are no current policies and procedures that address these issues and that would serve to prevent a reoccurrence on other research projects.

Recommendations

The Assistant Administrator for Research and Development should:

7. Require the entry of all research into the ORD's planning process.

8. Obtain and utilize an automated system to track costs (including full-time-equivalent hours) allocated to each research project.

9. Capture and record in-kind contributions to research projects (including contributions from outside entities and interoffice entities) in the automated system.

10. Establish policy and procedures to track, reply to and resolve internal review comments for each research project.

11. Update research design guidance to include steps that identify rules, regulations and training that applies to each research project, especially work conducted outside of the laboratory.

Agency Response to Draft Report and OIG Evaluation

We received a response to the draft report from the Deputy Administrator along with technical comments from OAR, ORD, and OECA. Appendices A and B contain the agency's comments on recommendations and their technical comments, respectively, along with the OIG detailed responses.

Although the agency stated it agreed with our recommendations, the ORD response to Recommendation 8 described its efforts to establish meaningful baselines for research projects but did not meet the intent to track costs for each research project. The ORD proposed action does not capture the actual costs of research, which is the weakness addressed in this report. Therefore, Recommendation 8 is unresolved with resolution efforts in progress. Recommendation 7 is closed with a completion date of October 2012. Recommendations 9, 10 and 11 are resolved and open with corrective actions pending.

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	13	Require that all nationally significant research, and research conducted to support a rule-making, enter and follow a process that includes oversight and input from agency senior leadership; those familiar with the rule-making process; and individuals familiar with applicable and relevant legal and policy requirements.	C	Deputy Administrator	10/31/12		
2	13	Require all NAA letters to state that a review was performed to identify methods other than enforcement discretion and that no other methods were found.	C	Assistant Administrator for Enforcement and Compliance Assurance	8/30/14		
3	13	Provide notice to all EPA offices that an NAA letter is being proposed and require documented feedback from all offices,	C	Assistant Administrator for Enforcement and Compliance Assurance	8/30/14		
4	13	Verify information provided to support the NAA letter request.	C	Assistant Administrator for Enforcement and Compliance Assurance	8/30/14		
5	13	Document compliance with the provisions of the NAA letter (both pre- and post-issuance).	C	Assistant Administrator for Enforcement and Compliance Assurance	8/30/14		
6	13	Establish a process for the submission, review and approval of alternative NESHAP emission control methods.	O	Assistant Administrator for Air and Radiation	3/31/15		
7	21	Require the entry of all research into the ORD's planning process.	C	Assistant Administrator for Research and Development	10/31/12		
8	21	Obtain and utilize an automated system to track costs (including full-time-equivalent hours) allocated to each research project.	U	Assistant Administrator for Research and Development			
9	21	Capture and record in-kind contributions to research projects (including contributions from outside entities and interoffice entities) in the automated system	O	Assistant Administrator for Research and Development	11/30/2015		
10	21	Establish policy and procedures to track, reply to and resolve internal review comments for each research project.	O	Assistant Administrator for Research and Development	9/30/15		
11	21	Update research design guidance to include steps that identify rules, regulations and training that applies to each research project, especially work conducted outside of the laboratory.	O	Assistant Administrator for Research and Development	9/30/15		

[1] O = Recommendation is open with agreed-to corrective actions pending.
C = Recommendation is closed with all agreed-to actions completed.
U = Recommendation is unresolved with resolution efforts in progress.

Agency Response to Draft Report and OIG Comments

The text of the EPA response along with our analysis is provided below.

MEMORANDUM

SUBJECT: Response to the Office of Inspector General (OIG) Draft Report, Project No. OPE-FY12- 0011, dated May 30, 2014

FROM: Bob Perciasepe, Deputy Administrator

TO: Arthur A. Elkins, Jr., Inspector General Office of Inspector General

Thank you for the opportunity to respond to the Office of the Inspector General (OIG) draft report, Project No. OPE-FY12-0011, dated May 30, 2014. The EPA's Office of Research and Development (ORD) initiated the Alternative Asbestos Control Method (AACM) experiments, which occurred in 2006 and 2007, in part to respond to the needs of EPA program and regional offices, as well as external stakeholders. As the report notes, these experiments are no longer occurring.

An important priority for the EPA is protecting people from exposure to harmful substances such as asbestos where they live, work, and engage in recreation. Since the experiments were conducted, the EPA has made significant changes to its research planning process and has taken many steps to ensure the safety and health of its employees and contractors, as well as the American people. The EPA continuously strives to improve its research protocols and processes to achieve the highest possible scientific standards to best protect the American public and our environment.

Our responses to the report recommendations are below. The EPA is also providing an attachment containing technical comments on the content of the report. In general, EPA concurs with the OIG recommendations. However, the mechanisms cited by the OIG, including the Action Development Process (ADP), the asbestos NESHAP and the use of enforcement discretion, are not appropriate for providing oversight and planning of research projects. We request that the OIG reexamine the report's content based upon our comments, including the description of the relationship between the Agency's research and regulatory activities.

OIG Recommendation 1: *Require that all nationally significant research, and research conducted to support a rule-making, enter and follow a process that includes oversight and input from agency senior leadership; those familiar with the rule-making process; and individuals familiar with applicable and relevant legal and policy requirements.*

Corrective Action 1: EPA Concurs with this recommendation.

EPA's Office of Research and Development (ORD) has made significant changes to the research planning process. The process requires that all nationally significant research be reflected. The research planning process includes oversight and input from senior managers and others familiar with the regulatory statutes and legal and policy requirements. Throughout the life cycle of research and development, from planning to product delivery, interactions occur between ORD and its partners at every organizational level, to ensure that the products are relevant, responsive, and timely in support of EPA's mission.

Corrective Action: Implementation of ORD Planning and Accountability Processes

Planned Completion Date: October 2012.

OIG Recommendation 2: *Require all NAA letters to state that a review was performed to identify methods other than enforcement discretion and that no other methods were found.*

Corrective Action 2: These recommendations are no longer applicable. OECA will formally revise its "Policy Against 'No Action' Assurances" to remove the provision stating that an NAA may be appropriate to obtain "information for research purposes."

Planned Completion Date: August 30, 2014

OIG Recommendation 3: *Provide notice to all EPA offices that an NAA letter is being proposed and require documented feedback from all offices.*

Corrective Action 3: These recommendations are no longer applicable. OECA will formally revise its "Policy Against 'No Action' Assurances" to remove the provision stating that an NAA may be appropriate to obtain "information for research purposes."

Planned Completion Date: August 30, 2014

OIG Recommendation 4: *Verify information provided to support the NAA letter request.*

Corrective Action 4: These recommendations are no longer applicable. OECA will formally revise its "Policy Against 'No Action' Assurances" to remove the provision stating that an NAA may be appropriate to obtain "information for research purposes."

Planned Completion Date: August 30, 2014

OIG Recommendation 5: *Document compliance with the provisions of the NAA letter (both pre- and post-issuance).*

Corrective Action 5: These recommendations are no longer applicable. OECA will formally revise its "Policy Against 'No Action' Assurances" to remove the provision stating that an NAA may be appropriate to obtain "information for research purposes."

Planned Completion Date: August 30, 2014

OIG Recommendation 6: *Establish a process for the submission, review and approval of alternative NESHAP emission control methods.*

Corrective Action 6: EPA Concurs with this recommendation.

We will establish a process to review applications for equivalency determinations.

On 23 July 2014, the Office of Air and Radiation provided further clarification stating that:

> OAR will establish a process to review applications for equivalency determinations based on the current Action Development Process (ADP). These determinations would include notice and comment rulemaking as required by the Asbestos NESHAP. The review process based on the ADP will provide for both external and internal stakeholder involvement. Information on this process, including the appropriate contact point for receiving requests, will be located on OAR's current Asbestos NESHAP website.

Planned Completion Date: 2nd Quarter FY 2015

OIG Recommendation 7: *Require the entry of all research into the ORD's planning process.*

Corrective Action 7: EPA concurs with this recommendation.

We agree with the OIG recommendation to require that all nationally significant research that ORD undertakes be included in the planning process. In the years since the AACM experiments were conducted, ORD has significantly changed its planning to include all nationally significant research in the new planning process. We note, however, that there are occasions when ORD is called upon to respond to unanticipated situations, such as the Deepwater Horizon incident, or the recent chemical spill in West Virginia. These situations may require that ORD respond promptly to address public health and environmental emergencies. While these projects are carefully planned and executed, time constraints may preclude inclusion in the formal planning process.

Corrective Action: Implementation of ORD Planning and Accountability Processes

Planned Completion Date: October 2012

OIG Recommendation 8: *Obtain and utilize an automated system to track costs (including full-time-equivalent hours) allocated to each research project.*

Corrective Action 8: EPA concurs with this recommendation.

ORD agrees with the need to enhance internal controls, including allocations, and has addressed this issue with our response and concurrence with OIG Recommendations #1, #7 and #9. The improved internal process outlined under that response ensures that all ORD research

projects are being appropriately tracked and planned to prevent similar incidents related to OIG's findings regarding the AACM studies.

OIG Response 8: We have reviewed the ORD comments and met with ORD personnel on this issue. The ORD efforts to establish meaningful baselines for its projects is a good first step in measuring performance. However, we determined, and ORD personnel confirmed, that their proposal does not capture actual cost data, which is the weakness discussed in this report. Absent the actual costs, ORD has no means to determine the efficiency and actual costs of its research projects. The OIG and agency have not agreed on a course of action to remedy and/or address the recommendation. The status of this recommendation is unresolved with resolution efforts in progress.

OIG Recommendation 9: *Capture and record in-kind contributions to research projects (including contributions from outside entities and interoffice entities) in the automated system.*

Corrective Action 9: EPA concurs with this recommendation.

ORD has made significant changes to the research planning process and requires that all nationally significant research, including research conducted to support rule making, is included in this new process. Consistent with our responses to Recommendations # 1, #7, and #8, ORD will now capture significant EPA contributions to ORD research projects. We believe this addresses the critical management and oversight control process issues identified by the OIG. With modification, existing EPA systems will allow us to achieve the controls to track the contributions mentioned above although they do not capture expenditure data.

At this time, the Agency does not have the legal authority to develop binding agreements to require this information from outside entities when no money is exchanged. Financial reporting on in-kind contributions by outside entities is only done when statutorily required and when funding is exchanged, such as through assistance agreements. However, in most instances, collaborative work is accomplished through the use of vehicles such as a Memorandum of Understanding (MOU), where funds are not exchanged. An MOU is a signed and legally non-binding document that describes the intention of the alliance members to work together to address a shared development challenge. EPA can request cost information related to in-kind contributions within these agreements, but it is not a legally binding requirement.

Planned Completion Date: November 30, 2015

OIG Recommendation 10: *Establish policy and procedures to track, reply to and resolve internal review comments for each research project.*

Corrective Action 10: EPA concurs with this recommendation.

ORD is committed to appropriately resolving all internal comments received on its research. We currently have in place several processes that allow for review of ORD's research, including management review up to the Associate Lab or Associate Center Director. For some research,

ORD carefully tracks and responds to comments received during internal review. ORD will expand this approach to cover all nationally significant research.

Corrective Action: ORD will develop a process applicable across ORD for tracking comments received and their resolution.

Planned Completion Date: 4th quarter, 2015

OIG Recommendation 11: *Update research design guidance to include steps that identify rules, regulations and training that applies to each research project, especially work conducted outside of the laboratory.*

Corrective Action 11: EPA concurs with this recommendation.

It is ORD's policy to comply fully with Federal and EPA policies, procedures, manuals and directives, as well as all applicable, federal, state, and local rules and regulations. Currently, our ORD labs have procedures for the review of project specific health, safety, and environmental plans to ensure compliance. To standardize these procedures across the organization, ORD-wide guidance that builds upon our existing procedures will be enhanced. This will involve updating and enhancing our current practices regarding the identification of applicable safety, health, and environmental rules, regulations and training that applies to research projects.

Revised Corrective Action: To standardize ORD safety, health, and environmental management procedures across the organization, ORD-wide guidance that builds upon our existing safety, health, and environmental management procedures will be enhanced.

Completion Date: 4th Quarter FY 2015

OIG Recommendation 12: *Assess whether penalties are warranted for violating the NESHAP in the AACM 2 experiment.*

Corrective Action 12: Penalties cannot legally be assessed against any party in this matter. As noted on Page 5 of the draft report, "The AACM 2 demolition experiment occurred on July 28, 2007, on a two-story, World War II-era building at Fort Chaffee, Arkansas." Under the federal statute of limitations (28 U.S.C. *§* 2462), the 5-year limitations period for any potential NESHAPs violations during the AACM 2 experiment expired in July 2012.

OIG Response 12: We agree with the statement that the statute of limitations has expired. We removed the recommendation.

Agency Technical Comments to Official Draft Report and OIG Comments

ORD Technical Comments	
Review Draft	**Comment**
Page 1, Background, Line 1	Replace "safe" with "no known risk-free." Safety is a concept in this case determined by statute. For example, EPA has determined that the level of asbestos associated with the current NESHAP "protects public health with an ample margin of safety," as required by the Clean Air Act, even though that level is not risk-free.
	OIG Response: EPA had documented that there is no known safe level of exposure to friable asbestos (http://www.epa.gov/oecaagct/ttox.html). Therefore the change is appropriate.
Page 3, intro sentence	Request revision of sentence to more clearly explain that while the alternative method investigation was in progress over a period of more than 10 years, the actual AACM demolitions were conducted for only a few days over a 2 year period (2006 and 2007). An alternative could be: "The EPA assessment of an alternative method to demolish buildings containing asbestos began in 1999 with the introduction the Fort Worth Method under Project XL, with actual demolitions using the AACM occurring in 2006 and 2007. The effort to evaluate an alternative method terminated in 2011."
	OIG Response: We added text to state that the actual demolitions occurred over a few days in 2006 and 2007.

Page 5, under "ORD Cancels Experiments"	For accuracy, please change "ORD Assistant Administrator" to "Deputy Assistant Administrator for Science." **OIG Response:** Documentation indicates that the ORD Assistant Administrator made the decision to terminate based upon a request from the Deputy Assistant Administrator. We will make that clarification.
Page 5. Last full sentence	Request a change of text to read: "Our evaluation scope spanned the design, conduct, reviews and subsequent discussions relating to the AACM experiments from 2004 to 2012 ... " This language is requested clarify to the reader that the actual experiments did not take place over an eight year period. **OIG Response:** We clarified that the experiments took place in 2006 and 2007 and the research ended in 2011 with the decision from the ORD Assistant Administrator. We do not include any subsequent administrative tasks in 2012 as extending the research.
Pages 8-9	Request the draft be revised to clarify that the processes to pursue *regulatory* changes to the asbestos NESHAP do not specify or control the means of pursuing *research* on alternatives to that regulation. The processes designed to make regulatory changes *(e.g.,* ADP) are not designed (and are not used) to plan and design research. Neither the ADP nor NESHAP provide mechanisms to conduct research, nor the necessary controls to oversee research. We request that the IG delete the section on the ADP and add a section entitled "Research Planning Process." Please refer to our earlier comments for possible language to use. **OIG Response:** The report language was modified to show that had the EPA continued with Project XL or the ADP, or initiated the NESHAP process, the AACM research would have had stronger internal controls.

Page 8, paragraph 1	The first sentence notes "3 regulatory methods" as means to pursue changes to NESHAP. One of the methods appears to be "Project XL." Request the IG revise this section to reflect that Project XL was a research mechanism with the intent to develop it with EPA innovative strategies to test better or more cost-effective ways of achieving environmental and public health protection. While the results of XL projects could lead to changes in EPA regulations, policies, or procedures, Project XL was not a "regulatory method" or prescribed by regulation. **OIG Response:** We revised the text to state that three mechanisms existed that would have forced stronger internal controls over the AACM research had they been followed throughout the research.
Page 8, paragraph 3	Insert after the first sentence: "It has since been eliminated and stopped accepting new projects for consideration in 2002." **OIG Response:** We revised the report to language as follows: EPA states that it has since been eliminated and stopped accepting new projects for consideration.
Page 9-The Action Development Process	Request the IG consider revision or elimination of the discussion of the ADP. The ADP is an EPA mechanism to consider possible regulatory changes such as a change the NESHAP, but it is not a mechanism to conduct or manage research. Available research data would be an input to the ADP, but would not be determined by the ADP. **OIG Response:** Please see our previous response on this issue. Request the last sentence in the first paragraph be revised to reflect that the AACM proposal was entered into the ADP process for an extremely short period of time, and was quickly withdrawn. While "revisions to the NESHAP" (a regulatory action) was "tiered" as a potential

	action for the ADP (SAN 5181: National Emissions Standards for Asbestos - Amendments), it was withdrawn quickly when the Agency determined sufficient information was not available. **OIG Response:** We added the documented reason for the withdrawal for clarification. In 2008, the EPA's Regulatory Information Notice Data for 2060-A064 stated the following reason for withdraw of the regulatory action: "However, we determined that initiating this action was premature because we had not completed testing the AACM. Therefore, we have withdrawn this action until all testing and evaluation of the test results, including peer review, are complete."
Page 9 -10, NESHAP approval method section	After a technology or method has been demonstrated, a party can apply for approval as an alternative measure to NESHAP. Because the AACM research was not successfully completed, no application as an alternative measure was sent to EPA. The NESHAP alternative method option permits the Administrator to approve an alternate means of asbestos emission limitation if in the Administrator's judgment, the alternative means will achieve a reduction in emissions at least equivalent to methods already approved and in use. This does not prescribe a method to obtain this information nor is not a means to conduct research. The NESHAP regulation only provides an option for the Administrator to consider research findings for a regulatory determination, i.e., that this new method is equivalent to the existing standard. Request the IG revise the report to reflect that NESHAP regulations do not provide research overview or planning. **OIG Response:** We have modified the report to state that the NESHAP process would have forced EPA to follow stronger internal controls for the AACM research if that mechanism had been selected.
Page 10, last full sentence	Please see prior comments concerning the ADP and NESHAP. Also, please note that enforcement discretion was required to conduct the research under any

	mechanism used. Due to the prescriptive work practice standards of the NESHAP, testing of alternative methods would require not following all of work practice standards and thus violate NESHAP. Enforcement discretion was necessary to allow the research. The 2 viable methods to conduct research at that time were the research planning process, and prior to 2002, Project XL. **OIG Response:** That is speculative. What EPA has not considered is that if the prior problems with the research, identified internally, had been addressed, the experiments may not have been allowed.
Page 11, paragraph 3, 1st sentence	Please see prior comments concerning the ADP and NESHAP. **OIG Response:** Please see the prior OIG Response.
Page 12, paragraph 1	Request the IG to revise the text to clarify that the experiments were not ongoing over a 12 year period. Suggested language " ..... while allowing the design, conduct, reviews and subsequent discussions relating to the AACM experiments to continue for 12 years." **OIG Response:** We revised the report text to indicate that the research on the experiments continued for 12 years. We have also added text stating that the experiments took place over a few days in 2006 and 2007.
Page 12, paragraph 3, 2nd sentence	Please see prior comments concerning the ADP. **OIG Response:** Please see the prior OIG Response.

Page 14, 3rd bullet	ORD addressed **many** workgroup concerns and comments. Request change text to read "Did not address **some** reviewers concerns regarding the experiments." **OIG Response:** We changed the text to read that ORD did not address significant comments as detailed in the report.
Page 15, first 2 paragraphs	Please use past tense in this paragraph, as this describes the planning process as it was at the time of the AACM. It has changed significantly since then. **OIG Response:** No revision is necessary. We reviewed ORD's Research Planning and Accountability Process Overview and believe that our description of the planning process still applies.
Page 16, paragraph 2, last sentence	Insert the word "may" as follows: "This action **may** have put the health of people ... " **OIG Response:** We revised the report as requested.
Page 17. Last section, end of the 3rd sentence	Request insertion of the word "research" as follows: " ... health and safety questions were outside of the scope of the **research** project." ORD agrees that all research should follow appropriate health and safety regulations to protect workers and others. The intent of the statement was the AACM study was an engineering research study to evaluate the environmental impacts and emissions of an alternative asbestos control technology. The research was not intended as a health and safety study. **OIG Response:** We cannot support the revision. The report states that EPA failed to consider health and safety issues, not that the research was a health and safety study.
Page 19, section on "Potential Clean Water Act Violations"	The EPA's National Recommended Water Quality Criteria include a recommended criterion for asbestos in waters of the United States. The edits to this section below are intended to clarify the section 304(a) program.

	The EPA's National Recommended Water Quality Criteria, which EPA issues ~~are published~~ pursuant to Section 304(a) of the Clean Water Act (CWA), **represent, among other things, the level of various pollutants that may be present in waters of the United States and still ensure protection and propagation of fish, shellfish, and wildlife and recreation in and on the water** ~~have limits on the discharge of certain contaminants into the waters of the United State~~s. **For asbestos, the Agency's recommended criterion is** ~~discharge limit is no more than~~ 7 million fibers (longer than 10 micrometers) per liter. The AACM project team was not aware of the **EPA's national recommended criterion for asbestos** ~~legal limit on asbestos discharge~~. **OIG Response:** We will ensure that the language is consistent with the text of the CWA. However, 7 million fibers per liter is the legal limit because the state of Arkansas has not prescribed a stricter limit than the default federal limit.
Page 19, section on "Potential CERCLA 103 Violations," end of first paragraph	Request the IG add the word "friable" to this sentence: For friable asbestos, the reportable quantity is 1 pound released in a 24 hour period. The note in 40 CFR 302.4 says the 1 pound per 24-hour period only applies to friable asbestos.

	OIG Response: We revised the sentence as follows: For asbestos, the reportable quantity is 1 pound of asbestos fibers released in a 24-hour period. Title 40 CFR 302.4 does identify that the reportable quantity for asbestos is 1 pound of friable asbestos in a 24-hour period. However, CERCLA does not define the term friable. A 1990 OECA legal analysis concluded friable under CERCLA does not have the same meaning as defined under the Clean Air Act. OECA states that friable under CERCLA means the release of pure asbestos [e.g., asbestos fibers], because the reportable quantity is restricted to the hazardous substance component of a solution or mixture. Thus, the individual asbestos fibers is the toxic component within the joint compound matrix or Transite® cement-board matrix.
OAR Technical Comments	
Review Draft	**Comment**
Page 1, Background, Paragraph 2	Suggest deletion of the following paragraph: ~~***Required NESHAP Revisions.*** *The EPA made its last comprehensive revision to the asbestos NESHAP in 1990. The 1990 Clean Air Act Amendments under Section 112(q) required that the EPA review the asbestos NESHAP by 2000. The EPA's Office of Air and Radiation (OAR) is responsible for the asbestos NESHAP, and the office said it does not have the resources to perform an asbestos NESHAP review and other required reviews.~~ Nothing in the paragraph seems to be germane to issues raised by this review. **OIG Response:** The information is necessary background to understand that required updates to the asbestos NESHAP are overdue because EPA states the resources are not available.

Page 1, last Paragraph	The title of the following paragraph is misleading. EPA offices have never "offered" NESHAP alternatives. We have done research on different aspects of alternative methods of removing asbestos containing material at the request of outside entities. **OIG Response:** The title has been changed to read EPA Offices Researched NESHAP Alternatives. Suggested edits: ~~*EPA Offices Offer*~~ *NESHAP Alternatives. In 1999, the city of Ft Worth proposed their method to EPA. EPA offices have researched* *various* *alternative demolition work-practice methods, such as the Fort Worth Method and the AACM,* *as alternatives to the current* ~~*to augment the*~~ *asbestos NESHAP* *provisions*. *Both* *the Fort Worth Method and the AACM* ~~*of these methods*~~ *involve wetting the building prior to and during the demolition* *in an effort to* *limit asbestos fiber release. Both of these methods are similar to the NESHAP-approved provision used for buildings that are structurally unsound and in danger of imminent collapse (imminent collapse provision). Under the imminent collapse provision, demolition crews wet the RACM and* ~~*shred*~~ *remove it using the demolition equipment.* The words “in an effort” need to be added because we can't say the wetting really always perfectly minimizes the amount of asbestos releases. In addition, the asbestos material is not "shredded." It is removed using equipment which will break the material, but does not shred it. The term "shred" makes it look like we run the material through a shredder. **OIG Response:** The report has been revised to state that wetting attempts to limit asbestos fiber release and the demolition equipment is used to break the RACM.
Page 2, Last Paragraph	Suggested Edits: *The City of Fort Worth Requests to use the Wet Method.* ~~*EPA Offices Proposed Wet Methods*~~*. The goal of the AACM and the Fort Worth Method research was to* ~~*propose*~~ *evaluate an alternative demolition procedures that could then potentially be* incorporated into *the asbestos NESHAP.*

	The EPA offices did not propose the wet method. The wet method was proposed by the City of Fort Worth. **OIG Response:** The report has been revised to indicate that the city of Fort Worth proposed the wet method. However, documentation indicates that the purpose of the work was to propose changes to the asbestos NESHAP.
Page 4, 2nd Paragraph, line 13	Suggested Edits: *The OIG also recommended the agency develop a single guidance document for proposals under the Agency's innovation strategy which provides fundamental criteria and is published in the Federal Register to ensure national policy decisions are based on sound science.* As written, the omission of the added text made the sentence confusing. **OIG Response:** We made the suggested revision.
Pages 8-9 (Overall Comments)	Please refer to our earlier comments by ORD and OAR. Also, we suggest that you combine the NESHAP Alternative Method Approval and the ADP into one available method. **OIG Response:** Please see the previous OIG comment on this subject.
Page 12 (Sub-heading)	Suggested Edits: *The Key Issue Was How to Measure Environmental Performance of the NESHAP versus the Wet Methods ~~Equivalent Emissions~~*

	OIG Response: The requested revision is not supported. As stated in the report, the key issue is equivalent emissions regardless of the method used.
Page 12, 1st Paragraph	In addition to the ORD comments on this paragraph, we have the following suggested edits: *For AACM research, the main unresolved issue was how to ~~demonstrate equivalent~~ measure emissions from the two methods in a way that equivalency could be determined. ~~Emissions to the asbestos NESHAP~~. During the development in 1999, Project XL work group members identified the information needed ~~need~~ to determine the environmental performance of the wet method relative to the Asbestos NESHAP ~~equivalency~~ as a major issue. The EPA offices involved, including Region 6, ORD, OECA, OAR, and the Office of Policy Economics and Innovation, left the issue ~~of equivalency~~ unresolved while allowing the experiments to go forward for 12 years. ~~Consequently, the EPA could not use the resulting data to propose NESHAP amendments, because known NESHAP equivalency problems with Project XL and AACM experiments remained unaddressed~~.* We could not use the data because we had concerns about the accuracy of the data, not because we had not determined what equivalency was. We were planning to determine equivalency as part of a future rulemaking. **OIG Response:** The requested revision is not supported. As stated in the report, the key issue is equivalent emissions regardless of the method used.
Page 12, 2nd Paragraph	Suggested Edits: *Only the OAR, as the administrator of the NESHAP, can determine ~~clarify~~ what constitutes equivalent asbestos emissions. ~~Without this definition, the ORD could not develop an experimental design that met the OAR's needs~~. However, the steps to obtain a definition from the OAR and information needed are not clear. The NESHAP regulation provides limited details on what information*

	should accompany an application, and the OAR has no guidance or procedures for submissions. ~~Due to this lack of resolution, the EPA could not use the resulting data to propose NESHAP amendments~~. We do not agree with the deleted sentence. If the experimental design was able to adequately measure the potential asbestos release (if any), then the project would have been more successful. In addition, one of the contributing reasons the project failed was because we never could decide on equivalency. We had hoped to determine the environmental performance of the AACM relative to the current NESHAP. The reason we never used the data was there were concerns about the accuracy of the data. Also, if we had completed the AACM 2 and 3 reports, and we saw significant asbestos releases, then it was understood by all parties involved that we would have not continued on and proposed amendments to the NESHAP.
	OIG Response: We cannot make the suggested revisions. As stated previously, equivalent emissions was the key component to any proposed change to the asbestos NESHAP and the EPA effort did not adequately address the issue. Absent an understanding of equivalent emissions from OAR early in the process, it does not seem logical for EPA to expend resources without a measurable end goal.
OECA Technical Comments	
Review Draft	**Comment**
Page 1, 2nd Paragraph	The draft report states: *According to the asbestos NESHAP, trained technicians must remove regulated asbestos-containing material (RACM) intact prior to demolition.* The asbestos NESHAP requires that an on-site supervisor or foreman be trained, but there is no NESHAP training requirement for the workers doing the asbestos removal. See 40 C.F.R. § 61.145(c)(8) ("[N]o RACM shall be stripped, removed, or otherwise handled or disturbed ...

	unless at least one onsite representative, such as a foreman or management-level person or other authorized representative, trained in the provisions of this regulation and the means of complying with them, is present."). The same assertion about trained technicians is made on Page 2 of that chapter. **OIG Response:** The requested revisions cannot be made. To conduct an asbestos demolition, one has to comply with the asbestos NESHAP and OSHA's regulations. The other requirement for training is in the OSHA regulation. The report will be revised to emphasize that point.
Chapter 2, Page 10, Heading: "No Justification for NAA Approval"	The draft report states that there was no *supporting documentation that provides an explanation of the reasons justifying issuance of the NAA*. However, for clarity it should be noted that both NAAs issued for the AACM projects referred to and relied on memoranda from Region 6, which contained the justification and rationale for the project. **OIG Response:** The report refers to the OECA requirements to issue a NAA, not the Region 6 justification and rationale for a project that could have been accomplished without the NAA letters with more controls. No changes made.
Chapter 2, Pages 11-12	The discussion in this section and related recommendations regarding OECA's oversight role when research is being conducted under an NAA raise a number of organizational and jurisprudential considerations. As a threshold matter, the discussion of the level of oversight and verification for OECA to determine that the AACM project's safety protocols were adequate and protective, for example, would require expertise and experience in the design and execution of research projects. However, because research is not an OECA function, OECA does not have this type of technical expertise. Lacking this ability, OECA does not believe that it is in a position to "second guess" another part of the Agency to which the research role, function and expertise is committed. While OECA does have

	scientific and engineering expertise, it is in the context of its enforcement and compliance function - not in the carrying out of the kind of research that was being conducted for the AACM project. Similarly, verifying that the quality assurance plan for the AACM 3 experiment included adequate provisions to ensure compliance with OSHA's worker excursion sampling regulations is likewise not a matter committed to OECA's role or expertise. Because OECA does not believe that it can be in a position to oversee (and verify) research and experimentation conducted by another part of the Agency, OECA will not in the future provide NAAs for these activities, and will revise its policy to remove the provision stating that an NAA may be appropriate to obtain "information for research purposes." In doing so, we recognize that NAAs for this purpose are extremely uncommon (the NAAs for the AACM projects appear to be the only NAAs ever provided for ORD-related work), indicating both that they are not generally necessary nor do they serve a critical role in support of the Agency's research and experimentation functions. **OIG Response**: We appreciate the additional language provided to support OECA's determination not to issue an NAA for similar research activities.
Chapter 3, Page 18, 2nd paragraph	Suggested Edits: The NRMRL officials also cannot verify the ~~completion~~ applicability of ~~the required~~ environmental review ~~and normally~~ requirements, including whether an Environmental Impact Statement (EIS) was completed for the AACM, as set out in 40 CFR 6.200(a) and 40 CFR § 6.207(a) respectively, to satisfy the National Environmental Policy Act (NEPA).8 ~~The~~ An environmental review under NEPA ~~and EIS are documents that~~ ensures that federal actions, including research experiments, consider ~~and limit negative~~ the environmental effects on test environments. However, in so far as the research was conducted under Section 103 of the Clean Air Act, the research would have been exempt from NEPA. A former NRMRL program manager, who is now retired, told us that the NRMRL left employees to their own resolve with

	respect to NEPA requirements, and that NRMRL contractors typically handled NEPA requirements and the EIS. In fact, the former program manager noted that his people did not understand NEPA. 8 We believe the most applicable subsection in the EIS regulation is 40 CFR 6.207(a}(3}(vii). That subsection states that an EIS is normally required when "[t]he proposed action involves uncertain environmental effects or highly unique environmental risks that are likely to be significant." Our edits clarify the provisions of NEPA as well as the CAA exemption pursuant to Section 7(c) of the Energy Supply and Environmental Coordination Act of 1974 (15 U.S.C. 793(c)(l)). Further we point out that NEPA requires Federal agencies to consider the environmental impacts of their proposed actions; however, it does not specifically require agencies to limit those impacts.
	OIG Response: We adjusted the wording to reflect ORD's policy and the requirements from 40 CFR Part 6, but cannot make all the requested revisions.

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