



OFFICE OF INSPECTOR GENERAL
U.S. Department of Energy

AUDIT REPORT

DOE-OIG-19-37

July 2019

**THE DEPARTMENT OF ENERGY'S
WILDLAND FIRE PREVENTION
EFFORTS AT THE NATIONAL
RENEWABLE ENERGY LABORATORY**



Department of Energy
Washington, DC 20585

July 1, 2019

MEMORANDUM FOR THE DIRECTOR, GOLDEN FIELD OFFICE

Michelle Anderson

FROM: Michelle Anderson
Deputy Inspector General
for Audits and Inspections
Office of Inspector General

SUBJECT: INFORMATION: Audit Report on “The Department of Energy’s Wildland Fire Prevention Efforts at the National Renewable Energy Laboratory”

BACKGROUND

The Department of Energy’s Golden Field Office is responsible for overseeing the management and operating contract with the Alliance for Sustainable Energy, LLC (contractor) who operates the National Renewable Energy Laboratory (NREL). The NREL is the Department’s primary national laboratory dedicated to researching and developing renewable energy and energy efficiency technologies. This laboratory is home to three national research centers for solar, wind, and bioenergy; and several programs that advance cutting-edge research in areas such as strategic energy analysis and energy systems integration. The NREL’s South Table Mountain and National Wind Technology Center campuses are the two main areas where research operations are conducted. Portions of both campuses border on large tracts of open space that contain vegetation known to be a wildland fire hazard.

While NREL has not been impacted by any major wildland fires, Jefferson County, CO, where NREL’s campuses reside, has experienced several large wildland fire events in recent years. Given the risk posed by wildland fire to NREL’s facilities and workforce, we initiated this audit to determine whether the Golden Field Office and the contractor were taking necessary actions to identify possible hazards associated with and mitigate the impacts of wildland fire.

RESULTS OF AUDIT

Our review found that the contractor had taken actions to identify and mitigate possible hazards associated with the impacts of wildland fire. For instance, we noted that the contractor had commissioned an assessment of wildland fire risk to NREL’s buildings and adopted a defensible space¹ management plan to minimize the consequences of a wildland fire event. While these

¹ Defensible space is the area around a structure that has been modified to reduce fire hazard. In this area, natural and man-made fuels are treated, cleared, or reduced to slow the spread of wildfire.

were positive measures, we observed areas related to Golden Field Office's execution of the contract and oversight of the contractor that need to be improved to ensure that NREL facilities and personnel are adequately protected from fire-related events, including wildland fire. Specifically, we found that Golden Field Office and contractor personnel may not be assessing all risks associated with the fire protection program at NREL. For instance, the Golden Field Office had not reviewed and approved the contractor's baseline needs assessment to ensure that emergency response capabilities were in place to meet NREL's needs. Additionally, the contractor had not performed comprehensive self-assessments of its fire protection program. The Golden Field Office and contractor had not assessed all risks because the Golden Field Office had not incorporated the fire protection portion of the Contractor Requirements Document (CRD) of Department Order 420.1C, *Facility Safety*, into the management and operating contract even though it was applicable. Under the CRD of Department Order 420.1C, Federal officials are responsible for overseeing contractor implementation of Order requirements, including reviewing and approving baseline needs assessments and fire protection programs. In addition, the CRD of Department Order 420.1C requires contractors to establish comprehensive fire protection programs for Department facilities and emergency response organizations to minimize the impact of fire-related events on the Department's resources and mission.

Golden Field Office officials stated that the contractor had a comprehensive fire protection program in place that met Federal worker safety and health requirements. However, we found that the contractor's program was not fully compliant with the CRD of Department Order 420.1C requirements. Golden Field Office officials indicated that, due to staff retirements, no documentation or historical knowledge was available to explain why the CRD of Department Order 420.1C had not been included in the management and operating contract. By meeting additional requirements of the CRD of Department Order 420.1C, Golden Field Office and the contractor would assess all relevant risks and improve their fire protection program by considering all potential effects of fire-related events that could ultimately impact the Department's mission. Subsequent to our review, Golden Field Office officials indicated that they were working to incorporate the CRD of Department Order 420.1C into the management and operating contract.

In addition, we found that Golden Field Office officials had not participated in the development and implementation of mutual assistance agreements with State, Tribal, and local authorities as required by Department Order 151.1D, *Comprehensive Emergency Management System*. Instead, Golden Field Office officials indicated that these types of agreements are negotiated and maintained by offsite organizations that provide emergency response capabilities to NREL without the involvement of Golden Field Office or contractor officials. During our audit, we were informed that fire and emergency response services for NREL are obtained through a subcontract between the contractor and offsite response organizations. Under the terms of the subcontracts, the subcontractors are to serve as the initial response agency and are responsible for coordinating with other response agencies to provide secondary assistance to NREL through mutual agreements. Golden Field Office officials informed us that their practice is to review the performance work statements for the subcontracts; however, they are not a direct party or privy to mutual assistance agreements with other supporting State and local entities. Also, even though Golden Field Office officials review the performance work statements, we noted that the subcontracts do not describe the capabilities of secondary

responders. Since the Golden Field Office is not aware of the details of mutual assistance agreements or capabilities to be provided, they cannot ensure that the secondary entities have the necessary capabilities to support NREL.

Golden Field Office officials stated that they do not believe the Department Order 151.1D requirement referenced above is applicable to NREL since they do not have their own onsite fire and emergency responders and are not a party to the contractual agreements. Additionally, Golden Field Office officials indicated that Department and contractor involvement is not necessary since wildland fire response capabilities in the surrounding area are comprehensive and offsite emergency response organizations are expected to comply with state requirements. However, according to the National Nuclear Security Administration's Office of Plans and Policy, who is responsible for Department Order 151.1D, the requirement is applicable regardless of how fire and emergency services are obtained. Further, the Office of Plans and Policy noted that Federal Field Office Managers have the inherent responsibility to ensure that necessary capabilities are planned for and coordinated in response to an incident or event in order to protect workers, save lives, and protect the environment. Based on the interpretation from the Office of Plans and Policy, we concluded that this requirement is applicable to the Golden Field Office. Since Golden Field Office officials do not receive, review, or participate in the development of these mutual assistance agreements, there is no formal verification of capabilities or compliance with state requirements. Without adequate participation, Golden Field Office cannot ensure that offsite organizations that provide emergency support to NREL have the capabilities needed to respond to all operational emergencies and minimize the interruption to the Department's mission.

Path Forward

To ensure that the Department's mission and assets are fully protected from fire-related events, enhancements to the contractor's fire protection programs are needed. Therefore, we made recommendations that, if fully implemented, should help ensure that NREL is adequately protected.

RECOMMENDATIONS

To address the issues identified above, we recommend that the Director, Golden Field Office:

1. Ensure that the CRD of Department Order 420.1C, *Facility Safety*, is incorporated, as applicable, into the management and operating contract; and
2. Ensure that Golden Field Office officials demonstrate participation with mutual assistance agreements in accordance with Department Order 151.1D, *Comprehensive Emergency Management System*.

MANAGEMENT RESPONSE

Management concurred with our report's recommendations and indicated that corrective actions had been initiated to address the issues identified in the report. Although management indicated that it partially concurred with Recommendation 2, management's proposed actions meet the intent of the recommendation. Management comments are included in Attachment 3.

AUDITOR COMMENTS

Management's proposed actions are responsive to our recommendations. Regarding management's statement that not all fire protection and emergency response programs and oversight processes in place for NREL had been fully considered, the report recognizes that the contractor has a fire protection program in place to meet Federal worker safety and health requirements and describes Golden Field Office's role in relation to emergency response entities that support NREL.

Attachments

cc: Deputy Secretary
Chief of Staff
Under Secretary of Energy

OBJECTIVE, SCOPE, AND METHODOLOGY

OBJECTIVE

We conducted this audit to determine whether the Golden Field Office and the Alliance for Sustainable Energy, LLC were taking necessary actions to identify possible hazards associated with and mitigate the impacts of wildland fire.

SCOPE

This audit was conducted between August 2018 and April 2019 at Department of Energy Headquarters in Washington, DC and the National Renewable Energy Laboratory (NREL) in Golden, Colorado. This audit was conducted under Office of Inspector General project number A18PT039. This report is one in a series of reports that will be issued as part of the audit effort.

METHODOLOGY

To accomplish our audit objective, we:

- Reviewed applicable Federal and Department regulations as well as National Fire Protection Association standards pertaining to wildland fire management;
- Reviewed relevant reports issued by the Office of Inspector General, Government Accountability Office, and Office of Enterprise Assessments;
- Interviewed Golden Field Office and contractor officials responsible for wildland fire management at NREL;
- Reviewed site-level procedures as well as contract documentation related to wildland fire management at NREL;
- Reviewed NREL's Wildland/Urban Interface Defensible Space Management Plan and Baseline Needs Assessment of Emergency Response Capabilities; and
- Performed physical observations of wildland fire mitigation efforts at NREL.

We conducted this performance audit 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Accordingly, we assessed significant internal controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we assessed the implementation of the *GPR Modernization Act of 2010* and found that the Department had not established performance measures specifically related to wildland fire management. Because our review was limited, it would not necessarily

have disclosed all internal control deficiencies that may have existed at the time of this audit. We did not rely on computer-processed data to satisfy our audit objective, and therefore, did not conduct a reliability assessment of computer-processed data.

Management officials waived the exit conference in May 2019.

PRIOR REPORTS

- Audit Report on [*The Department's Wildland Fire Planning and Preparation Efforts*](#) (DOE/IG-0760, March 2007). The review found that Department of Energy sites within known wildfire zones had failed to perform or were not completely successful in performing essential wildland fire mitigation activities involving the assessment and removal of vegetation and the maintenance of roads. The report concluded that contractor officials had not always adhered to established wildland fire planning and mitigation guidance. In particular, contractors had not used risk-based principles to prioritize mitigation efforts and had either omitted or not adequately considered a number of other items specified in Federal policy, Departmental guidance, and the Initial Joint Review when developing fire protection plans. In addition, Federal officials had not always actively monitored contractor wildland fire protection programs, coordinated protective efforts, or validated the effectiveness of contractor fire mitigation activities.

MANAGEMENT COMMENTS



Department of Energy
Golden Field Office
15013 Denver West Parkway
Golden, Colorado 80401

May 13, 2019

MEMORANDUM FOR: Michelle Anderson
Deputy Inspector General for
Audits and Inspections
Office of Inspector General

FROM: Derek Passarelli *Derek B. Passarelli*
Director
Golden Field Office
Energy Efficiency and Renewable Energy

SUBJECT: Response to the Office of Inspector General Draft Audit Report on
The Department of Energy's Wildland Fire Prevention Efforts at the
National Renewable Energy Laboratory (A18PT039)

Summary of the Golden Field Office Position:

The Department of Energy (DOE), Office of Energy Efficiency and Renewable Energy (EERE), Golden Field Office (Golden) appreciates the opportunity to review the Office of Inspector General's (OIG) April, 2019, draft audit report entitled, "The Department of Energy's Wildland Fire Prevention Efforts at the National Renewable Energy Laboratory."

We recognize that even the most effective programs can benefit from an external evaluation and appreciate the input of the OIG as we continue to work to strengthen our programs and processes.

Golden is in partial concurrence with the recommendations identified in the report and the finding that we may not be assessing all risks associated with the fire protection program at the National Renewable Energy Laboratory (NREL).

Golden believes the OIG did not sufficiently consider the entirety of the comprehensive fire protection and emergency response programs and oversight processes in place for the National Renewable Energy Laboratory (NREL) during the audit.

While it is accurate that Golden had not approved the contractor's baseline needs assessment (BNA) which is a requirement of Department Order 420.1C, *Facility Safety*; it appears the OIG did not consider that there is other Golden approved documentation in place to ensure that fire protection and emergency response capabilities were in place to meet NREL's needs. As required by Department Order 151.1D, *Comprehensive Emergency Management System*, each DOE site must establish and maintain an emergency management program that complies with the Emergency Management Core Program requirements outlined in Attachment 3 of Department Order 151.1D. At a minimum, an Emergency Response Organization must (in part)

establish an effective first responder capability to mitigate all hazard emergencies including emergency medical, fire, hazard material, and applicable rescue emergencies as derived through the Baseline Needs Assessment (BNA), Hazard Survey, and Threat and Hazard Identification Risk Assessment (THIRA). So, while Golden had not formally approved the BNA, the information contained in the BNA is used by Golden in conjunction with the Hazard Survey and THIRA to establish an effective first responder capability for NREL to mitigate all hazard emergencies. As required by Department Order 151.1D, Golden annually assesses the emergency management program and documents the results in the Emergency Readiness Assurance Plan (ERAP).

Risks to buildings from wildland fire and appropriate mitigation measures were identified by a registered professional fire protection engineer in a defensible space management plan. The contractor fire protection program implements these mitigation measures. Golden approves the contractor fire protection program in conjunction with the 10 CFR Part 851 *Worker Health and Safety Program* approval which is the basis for the statement that Golden officials stated that the contractor had a comprehensive fire protection program in place that met Worker Safety and Health requirements.

Specific responses to the report recommendations are provided below.

Response to Recommendations

RECOMMENDATION #1: Ensure that the CRD of Department Order 420.1C, *Facility Safety*, is incorporated, as applicable, into the management and operating contract.

GOLDEN RESPONSE: Golden concurs with this recommendation. The Golden Field Office will incorporate DOE Order 420.1C, Chg 2, CRD, Chapter II. *Fire Protection*, and Chapter IV. *Natural Phenomena Hazards Mitigation*, as applicable, into the NREL management and operating contract via contract modification. The contract modification incorporating this will be completed by June 30, 2019.

RECOMMENDATION #2: Ensure that Golden Field Office officials demonstrate participation with mutual assistance agreements in accordance with Department Order 151.1D, *Comprehensive Emergency Management System*.

GOLDEN RESPONSE: Golden partially concurs with this recommendation. As already submitted during the draft audit report factual accuracy phase of this audit, Golden may not be able to directly address the requirement of the DOE Order 151.1D section that directs the Field Office Manager to ‘participate in the development and implementation of mutual assistance agreements with State, Tribal, and local authorities’ since Golden/NREL does not have a first-tier, in-house fire response capability on-campus. However, Golden will identify, describe, and document the comprehensive emergency management resources and organizations available to mitigate wildland fire risks, meeting the intent of the Order. The document will be finalized by April 30, 2020.

FEEDBACK

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Office of Inspector General (IG-12)
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Washington, DC 20585

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