



U.S. Department of Energy
Office of Inspector General
Office of Audits and Inspections

Audit Report

Western Area Power Administration's Rocky Mountain Regional Office's Transmission Vegetation Management Program

OAS-L-14-06

March 2014



Department of Energy

Washington, DC 20585

March 31, 2014

MEMORANDUM FOR THE ADMINISTRATOR, WESTERN AREA POWER ADMINISTRATION

A handwritten signature in black ink, appearing to read "Jack Rouch", written over a horizontal line.

FROM:

Jack Rouch, Director
Central Audits Division
Office of Inspector General

SUBJECT:

INFORMATION: Audit Report on "Western Area Power Administration's Rocky Mountain Regional Office's Transmission Vegetation Management Program"

BACKGROUND

The Department of Energy's (Department) Western Area Power Administration (Western) markets wholesale power produced from Federal water projects. Western transmits power through approximately 17,000 miles of transmission lines within a 15-state region of the central and western United States. Western's transmission lines are managed by four regional offices — Rocky Mountain, Sierra Nevada, Upper Great Plains, and Desert Southwest.

Each regional office is responsible for ensuring vegetation management practices are in place to prevent physical contact between transmission lines and nearby vegetation. If vegetation grows near or into power lines, it can interfere with electric power flow, pose safety problems to the general public, and cause power outages. For example, inadequate vegetation management by two public utilities was identified as the primary cause for the 2003 East Coast-Midwest electric power blackout, which affected over 50 million people in the United States and Canada. Additionally, in 1996, a Bonneville Power Administration transmission line sagged into a tree and triggered a rolling blackout that affected approximately 10 million people on the West Coast.

Given the importance of vegetation management to the continuity of electrical transmission and public safety, we conducted an audit to determine whether Western had effectively managed its Transmission Vegetation Management Program (Vegetation Program). We focused on the Rocky Mountain Region (Rocky Mountain) because it had one of the largest transmission infrastructures within Western. Between June 2011 and September 2013, Rocky Mountain spent approximately \$4.6 million for vegetation maintenance in forested areas.

RESULTS OF AUDIT

Our audit found that Rocky Mountain had generally implemented management controls for its Vegetation Program. For example, Rocky Mountain inspected transmission lines at least twice

annually through either ground and aerial patrols, as well as tracked and prioritized vegetation maintenance work. However, we identified opportunities to improve Rocky Mountain's management of its vegetation maintenance contractor.

Vegetation Maintenance Contractor

We found that Rocky Mountain could improve the management of its contractor responsible for vegetation maintenance. Specifically, Rocky Mountain officials did not independently verify the accuracy of the contractor-prepared assessments that detailed each tree that required maintenance and did not always verify that maintenance was completed in accordance with the assessments. According to contract requirements, Rocky Mountain must verify the contractor's compliance with essential performance requirements and may use various methods to perform surveillance of the contractor's activities.

As part of the vegetation maintenance process, Rocky Mountain issued its vegetation maintenance contractor a task order to complete an assessment report identifying trees encroaching on transmission lines. Rocky Mountain approved the assessment report and the contractor was responsible for removing identified trees. Rocky Mountain officials informed us that they did not make site visits to independently validate the contractor assessment of needed vegetation work to ensure it was accurate and complete. However, Vegetation Program officials stated that during field visits, they observed transmission lines and existing vegetation, so they were familiar with work that was needed. We were unable to substantiate such field visits or observations as Vegetation Program officials told us they were not documented. Additionally, while these observations may provide a general indication of the amount of work to be done, they would not provide the level of assurance available from procedures such as an independent confirmation of a representative sample of proposed work.

Additionally, Rocky Mountain officials did not ensure the contractor's vegetation maintenance work was completed according to the contractor-prepared assessment. After work was completed, the contractor provided a post-assessment of work performed. Rocky Mountain then paid the contractor based on the number of trees removed for each task order completed. Although Rocky Mountain officials informed us that spot checks were performed to verify the contractor's completed work, we found the spot checks to be infrequent. For instance, we reviewed 10 of 42 task orders issued to the contractor between June 2011 and September 2013, and found documentation to support that Rocky Mountain officials performed spot checks on only 20 of the 1,347 (1.5 percent) transmission line segments maintained by the contractor for those task orders. Rocky Mountain officials asserted that they had overseen the contractor more frequently than it had appeared because not all the spot checks were documented. Additionally, Rocky Mountain had assigned only one staff member to manage the Vegetation Program. That individual told us that he was only able to conduct a limited number of spot checks given his other responsibilities. However, we noted that Western's Upper Great Plains Region and another Power Marketing Administration, Bonneville Power Administration, dedicated additional resources to the task and had utilized contractor inspectors to oversee the work of their vegetation maintenance contractor's work.

Policies and Procedures

The issues we identified were caused, in part, because Rocky Mountain did not have formal policies, procedures, or guidance related to oversight of its vegetation maintenance contractor. Despite contract requirements to verify contractor performance through various methods, we found Rocky Mountain did not have any formal policies and procedures outlining verification methods for the Vegetation Program's pre-work and post-work activities. Further, we noted that Western had not developed similar policies and procedures governing its regions' oversight of Vegetation Programs.

Rocky Mountain's Vegetation Program officials informed us that they were comfortable with the quality control and assurance measures already in place by the contractor. According to officials, the vegetation maintenance contractor took before and after pictures of completed work for verification of the contractor's performance. However, we noted that before and after pictures were not taken in every instance. For example, in one of the task orders we reviewed, pictures were taken of only 44 of the 70 transmission line segments, and in another task order we noted that there were no pictures taken. Additionally, Rocky Mountain officials stated that their extensive ground and aerial photo monitoring of the transmission lines would identify the changes in vegetative conditions that would indicate maintenance work had been performed. Although photo monitoring provides a good measure of overall progress made by the contractor, such activity does not ensure the accuracy of individual tree removal activities required by the statements of work nor will it provide evidence that specific requirements were met. Given that the contractor was paid by the number of trees removed, Rocky Mountain officials could improve the quality of their monitoring activities by ensuring that at least a representative sample of the claimed work is validated as part of its on-going verification program.

IMPACT AND PATH FORWARD

Additional contractor work verification techniques, or refinement of current techniques, could help Rocky Mountain ensure that it is not overpaying its contractor. While a number of actions are already in place, improving verification could also increase assurance that vegetation is not encroaching on transmission lines. Because of these concerns, we suggest that Western's Administrator direct the development and implementation of policies and procedures governing the management and verification of contractor performed vegetation maintenance activities.

This report is one of two audit reports on the Department's power marketing administrations' vegetation management programs. Our other report, *Bonneville Power Administration's Transmission Vegetation Management Program* (OAS-L-14-05, March 2014), also disclosed issues regarding management of vegetation maintenance contractors.

Attachment

cc: Deputy Secretary
Acting Under Secretary for Science and Energy
Chief of Staff

OBJECTIVE, SCOPE AND METHODOLOGY

OBJECTIVE

The objective of the audit was to determine whether Western Area Power Administration (Western) had effectively managed its Transmission Vegetation Management Program (Vegetation Program).

SCOPE

The audit was performed between May 2013 and March 2014, at Western's Rocky Mountain Region (Rocky Mountain), Western Colorado Maintenance Office in Montrose, Colorado and Upper Great Plains Region (Upper Great Plains), South Dakota Maintenance Office in Huron, South Dakota. Our review at Upper Great Plains was limited and did not include detailed testing. The audit was conducted under Office of Inspector General Project Number A13DN034.

METHODOLOGY

To accomplish our objective, we:

- Obtained and reviewed policies, procedures, laws, and regulations related to Rocky Mountain and Upper Great Plain's Vegetation Programs.
- Interviewed key officials to obtain an understanding of Rocky Mountain and Upper Great Plains' Vegetation Programs.
- Evaluated the management controls in place for the work conducted by Rocky Mountain vegetation maintenance contractor.
- Evaluated whether Rocky Mountain had effective practices in place to inspect vegetation surrounding the transmission lines to determine necessary vegetation maintenance requirements.
- Analyzed Rocky Mountain's implementation of vegetation maintenance to ensure necessary maintenance had been conducted.
- Judgmentally selected a sample of 10 of 42 task orders issued by Rocky Mountain's vegetation maintenance contractor that manages the Region's forested area between June 2011 and September 2013 to determine whether Vegetation Program officials had conducted quality assurance reviews of completed work. Attributes we considered in our sample selection included the dollar value and variety of performance dates. For each task order, we obtained the statement of work and related spot check review documents, if available, and identified the number of transmission line segments that

required work to be completed and the number of segments that were spot checked. Because we did not use a statistical sample, we could not project to the population.

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 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. We assessed Western's implementation of the *GPRA Modernization Act of 2010* and found Western had established performance measures. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We conducted an assessment of computer-processed data relevant to our audit objective and found that it could be relied on.

An exit conference was waived by Western management on March 19, 2014.

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