



Memorandum from the Office of the Inspector General

September 1, 2022

Jacinda B. Woodward

**REQUEST FOR MANAGEMENT DECISION – EVALUATION 2021-17298 –
RESPIRATORY PROTECTION PROGRAM**

Attached is the subject final report for your review and management decision. Your written comments, which addressed your management decision and actions planned for 3 of the 5 recommendations, have been incorporated into the report. You are responsible for determining the necessary actions to take in response to our findings. Please advise us of your management decision within 60 days from the date of this report. In accordance with the Inspector General Act of 1978, as amended, the Office of the Inspector General is required to report to Congress semiannually regarding evaluations that remain unresolved after 6 months from the date of report issuance.

If you have any questions or wish to discuss our findings, please contact Christopher E. Sheets, Senior Auditor, at (865) 633-7362 or E. David Willis, Director, Evaluations, at (865) 633-7376. We appreciate the courtesy and cooperation received from your staff during the evaluation.

David P. Wheeler
Assistant Inspector General
(Audits and Evaluations)

CES:FAJ

Attachment

cc (Attachment):

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OIG File No. 2021-17298



Office of the Inspector General

Evaluation Report

To the Senior Vice President,
Power Operations

RESPIRATORY PROTECTION PROGRAM

Evaluation Auditor
Christopher E. Sheets

Evaluation 2021-17298
September 1, 2022

ABBREVIATIONS

OSHA	Occupational Safety and Health Administration
PO	Power Operations
RPP	Respiratory Protection Program
TSP	Technical Safety Procedure
TVA	Tennessee Valley Authority

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MEMORANDUM DATED AUGUST 24, 2022, FROM JACINDA B. WOODWARD
TO DAVID P. WHEELER



Evaluation 2021-17298 – Respiratory Protection Program

EXECUTIVE SUMMARY

Why the OIG Did This Evaluation

The Occupational Safety and Health Administration requires employers to establish and implement a written respiratory protection program (RPP) with worksite-specific procedures and elements for respirator use. The Tennessee Valley Authority (TVA) incorporated the Occupational Safety and Health Administration's requirement for an RPP into TVA Technical Safety Procedure 18.916, *Respiratory Protection*, to establish requirements for protecting employees and to meet regulatory compliance for an RPP. TVA incorporated specific procedures into its RPP related to medical evaluations, training, fit testing, facepiece seal protection,ⁱ and respirator storage, among others.

Due to the risk of employeeⁱⁱ exposure to toxic vapors, gases, dust, or oxygen deficiency, we performed an evaluation of TVA's RPP at nonnuclear facilities.ⁱⁱⁱ The objective of this evaluation was to determine if selected respiratory protection procedures were being performed at nonnuclear facilities.

What the OIG Found

We determined some respiratory protection procedures were not being performed as required. Specifically, we determined some (1) requirements were not being met for training, fit tests, facepiece seal protection, and respirator storage and (2) employees were delinquent on medical evaluation requirements.

What the OIG Recommends

We recommend management (1) address training, fit test, and medical evaluation delinquencies and (2) enforce respiratory protection requirements related to facepiece seal protection and respirator storage. Our detailed recommendations are listed in the body of this report.

ⁱ A tight-fitting facepiece seal prevents hazardous airborne material from entering an employee's airway.

ⁱⁱ The term "employee" refers to both TVA employees and staff augmented contractor employees throughout our evaluation.

ⁱⁱⁱ The procedure applies to personnel at TVA locations where respiratory protection is required but does not apply to TVA nuclear sites or managed task contractors.



Evaluation 2021-17298 – Respiratory Protection Program

EXECUTIVE SUMMARY

TVA Management's Comments

In response to our draft report, TVA management agreed with four of the five recommendations and partially agreed to the recommendation of enforcing respiratory protection requirements related to facepiece seal protection. Additionally, TVA management provided planned actions to address three of the recommendations. See the Appendix for TVA management's complete response.

Auditor's Response

We concur with the planned actions that were provided to address three of the recommendations.

BACKGROUND

The Occupational Safety and Health Administration (OSHA) requires employers to establish and implement a written respiratory protection program (RPP) with worksite-specific procedures and elements for required respirator use. According to OSHA, a respirator program increases the chances of using a respirator correctly. Additionally, an employer must implement elements of an RPP to ensure that any employee using a respirator is medically able to use that respirator, and the respirator is cleaned, stored, and maintained so its use does not present a health hazard to the user.

The Tennessee Valley Authority (TVA) incorporated OSHA's written requirements for an RPP into TVA Technical Safety Procedure (TSP) 18.916, *Respiratory Protection*, to establish requirements for protecting employees and to meet regulatory compliance requirements.¹ Further, the TSP describes RPP roles and responsibilities of employees, management, safety personnel, and health services and provides instructions on how to implement RPP requirements. TVA-TSP-18.916 also includes RPP requirements related to medical evaluations, training, fit testing, facepiece seal protection,² and respirator storage, among others.

TVA employees are included in the RPP based on job codes or assignment profiles for specific sites or departments. Approximately 863 employees were included in TVA's RPP from October 1, 2019, to September 30, 2021. Due to the risk of employee³ exposure to toxic vapors, gases, dust, or oxygen deficiency at TVA facilities, we performed an evaluation of TVA's RPP at nonnuclear facilities.

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of this evaluation was to determine if selected respiratory protection procedures were being performed at nonnuclear facilities. The scope of the evaluation included fiscal years 2020 and 2021 for documentation and site visits in February 2022. To achieve our objective, we:

- Reviewed relevant documentation to gain an understanding of the RPP process and procedures:
 - *TVA Safe Work Requirements Manual*
 - TVA-TSP-18.916, *Respiratory Protection*
- Reviewed OSHA Title 29 Code of Federal Regulations Section 1910.134, *Respiratory Protection*, to gain an understanding of regulatory requirements.

¹ The procedure applies to personnel at TVA locations where respiratory protection is required but does not apply to TVA nuclear sites or managed task contractors.

² A tight-fitting facepiece seal prevents hazardous airborne material from entering an employee's airway.

³ The term "employee" refers to both TVA employees and staff augmented contractor employees throughout our evaluation.

- Interviewed TVA Safety, Power Operations (PO), training, and medical employees to gain an understanding of RPP regulations, procedures, and processes.
- Statistically selected 139 of 863 employees who were in TVA's RPP during our evaluation scope. We selected the sample using rate of occurrence sampling with a 95 percent confidence level. For the 139 employees selected, we:
 - Reviewed training, fit test, and medical evaluation data provided to us by TVA training and medical personnel to determine if employees completed required training and were medically eligible to perform work that requires respiratory protection.⁴
 - Conducted a survey to inquire about RPP practices at facilities. We received responses from 41 employees.
- Statistically selected 129 of 449 employees who were not part of TVA's RPP but work in the same business units and have similar job descriptions as employees who are in the RPP. We selected the sample using rate of occurrence sampling with a 95 percent confidence level. For the 129 employees selected, we conducted a survey to inquire about their awareness and the effectiveness of the RPP. We received responses from 28 employees.
- Judgmentally selected four coal plants (Kingston, Bull Run, Shawnee, and Gallatin Fossil Plants) and two gas plants (Southaven and Allen Combined Cycle Plants) based on employee survey responses and delinquent training. At the selected plants, we:
 - Observed and documented RPP practices.⁵
 - Haphazardly selected 18 individuals to inspect assigned respirators and verify fit tests had been performed.

This evaluation was conducted in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation*.

FINDINGS

We determined some respiratory protection procedures were not being performed as required. Specifically, we determined some (1) practices did not meet regulatory training, fit test, facepiece seal protection, and respirator storage requirements and (2) employees were delinquent on medical evaluation requirements.

⁴ We did not determine if delinquencies were due to changes in job responsibilities or health restrictions.

⁵ During our site visits, we did not observe any jobs that required respiratory protection nor any personnel actively wearing respirators.

SOME PRACTICES DID NOT MEET REGULATORY REQUIREMENTS AND COULD ENDANGER EMPLOYEE SAFETY

TVA incorporated OSHA standards in TVA-TSP-18.916 that address training, respirator fit tests, and respirator effectiveness. However, we found issues that may place plant employees at risk such as (1) respiratory training delinquencies, (2) fit test noncompliance, (3) facial hair growth that could impact facepiece seal protection, and (4) improper respirator storage. Practices that do not comply with OSHA standards for respirator use could place employees at risk from respiratory hazards.

Some Employees Were Delinquent on Training

OSHA requires employers to provide effective training to employees who are required to use respirators. The training must be comprehensive, understandable, and recur annually and more often if necessary. TVA-TSP-18.916 requires refresher training to be conducted at least annually for employees required to wear respiratory protection. However, we determined 51 of 139 sampled employees were delinquent on required training at some point in our evaluation scope. Most of the delinquent exams were completed within 30 days; however, 18 employees were overdue 30 or more days.

Some Employees Were Not Compliant With Fit Test Requirements

OSHA requires employers to conduct fit tests when employees use a tight-fitting respirator for the first time, whenever a different respirator facepiece (size, style, model, or make) is used, and at least annually thereafter. However, we found some employees (1) were delinquent on annual fit test requirements and (2) identified a respirator that had not been specifically fitted to their face as the one they would use.

Some Employees Were Delinquent on Fit Tests

TVA-TSP-18.916 requires employees in TVA's RPP to complete fit testing annually. However, we determined 62 of 139 sampled employees were delinquent on annual respirator fit tests. Forty-five employees were at least 30 days overdue, with delinquencies ranging up to 59 months. TVA Safety personnel and plant management stated COVID-19 and TVA nurse practitioner availability impacted employees' ability to complete fit test exams by the due date.

Some Employees Identified a Respirator That Had Not Been Specifically Fitted to Their Face

TVA-TSP-18.916 also requires employees to be fit-tested for the specific type of respirator they will use. We compared the respirators provided to us by 18 haphazardly selected employees during our site visits to the corresponding employee fit test records and determined 10 respirators did not match the respirators fitted to the employees. A site-safety consultant subsequently identified three additional employees who were out of compliance with the regulatory requirement and initiated corrective actions.

Some Employees Had Facial Hair That Could Impact Facepiece Seal Protection

OSHA does not permit respirators with tight-fitting facepieces to be worn by employees who have facial hair that prevents firm sealing of the facepiece. During our site visits, we observed multiple personnel with assigned respirators had grown facial hair that either would or potentially could prevent a tight seal between the respirator and the individual's face. TVA safety personnel, who accompanied us on one of our site visits, also expressed concerns that some personnel at the site would not meet OSHA's standard for tight-fitting facepieces. According to TVA safety personnel, loose-fitting respirators (hoods) could be used in some situations by employees with facial hair; however, loose-fitting hoods were not present at four sites we visited.⁶

Some Respirators Were Not Properly Stored

According to OSHA, all respirators shall be (1) stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals and (2) packed or stored to prevent deformation of the facepiece and exhalation valve. Further, TVA-TSP-18.916 states respirators should be placed in sealable plastic bags or containers when routinely used. However, we found some respirators at Bull Run and Shawnee Fossil Plants were not stored in bags or containers to meet these requirements.

SOME EMPLOYEES WERE DELINQUENT ON MEDICAL EVALUATIONS

Some employees were not in compliance with medical evaluation requirements established by TVA. TVA-TSP-18.916 states employees must pass a medical evaluation before being permitted to wear a respirator on the job. Additionally, employees in TVA's RPP are required to pass medical evaluations at least every 3 years. However, 17 of 139 sampled employees were delinquent between 5 days and 17 months in completing their medical reevaluations. Failure to adhere to established medical evaluation frequencies could lead to employees performing job duties that require respiratory protection without meeting current fitness standards.

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TVA Safety communicated RPP reminders in an April 2022 Safety and Health Communication bulletin that included training, medical evaluation, fit test, and job-code requirements.

⁶ We did not attempt to verify the availability of loose-fitting hoods until we noted facial hair issues at the third site we visited.

RECOMMENDATIONS

We recommend the Senior Vice President, PO:

1. Identify employees who have not completed required training or fit tests and take steps to expedite training and fit test completion for those employees.

TVA Management's Comments – TVA management agreed with this recommendation and is removing employees from the RPP who have changed jobs and are no longer required to be in the RPP. The remaining employees who are delinquent in training and/or fit tests are not permitted to wear a respirator until training and fit tests are completed. See the Appendix for TVA management's complete response.

Auditor's Response – We agree with TVA management's planned actions.

2. Improve oversight to prevent employee training, fit test, and medical evaluation delinquencies.

TVA Management's Comments – TVA management agreed with this recommendation.

3. Complete a review of respirators assigned to employees and ensure these respirators match the make, model, and size in their most recent annual fit test.

TVA Management's Comments – TVA management agreed with this recommendation and corrected the deficiencies identified during the evaluation. PO is developing an aid for employees in the RPP that will show the make, model, style, and size of the respirator for which they have been fit tested along with dates for their fit test and medical evaluation. See the Appendix for TVA management's complete response.

Auditor's Response – We agree with TVA management's planned actions.

4. Enforce facial hair requirements for employees approved for respirator use or provide loose-fitting hoods to accommodate employees with facial hair.

TVA Management's Comments – TVA management partially agreed with this recommendation and stated shaving supplies are maintained at sites to allow employees to shave as needed prior to wearing a respirator for routine work. Employees who may be required to use a respirator in an emergency should be adequately shaved prior to beginning their shift. See the Appendix for TVA management's complete response.

5. Perform a review of all areas where employees store respirators to verify proper storage, provide lockers or containers for proper storage where none exist, and reinforce proper storage procedures to employees.

TVA Management's Comments – TVA management agreed with this recommendation and will reinforce the requirements and ensure respirators are stored in accordance with TVA-TSP-18.916. See the Appendix for TVA management's complete response.

Auditor's Response – We agree with TVA management's planned actions.

August 24, 2022

David P. Wheeler

REQUEST FOR COMMENTS - DRAFT EVALUATION 2021-17298 - RESPIRATORY
PROTECTION PROGRAM

TVA Power Operations would like to thank Chris Sheets (OIG Lead Auditor) for evaluating the Respiratory Protection Program (RPP). The health and safety of our workforce and the public is TVA's top priority. We appreciate the TVA Office of the Inspector General team's insights in their report as it provides us an opportunity to further strengthen our health and safety efforts.

In response to the OIG memorandum dated July 26, 2022, Power Operations has reviewed your draft evaluation and have the following comments and responses.

Recommendations

You recommended the Senior Vice President, Power Operations:

1. Identify employees who have not completed required training or fit tests and take steps to expedite training and fit test completion for these employees.

Response

Power Operations agrees with this recommendation. As we periodically review the status of required training and fit tests for those in the RPP, we are finding a population of employees showing as delinquent who have changed jobs and are no longer required to be in the RPP. As these employees are identified, they are being removed from the RPP. The remaining employees who are delinquent in training and/or fit tests are not permitted to wear a respirator until training and fit tests are completed.

2. Improve oversight to prevent employee training, fit test, and medical evaluation delinquencies.

Response

Power Operations agrees with this recommendation.

3. Complete a review of respirators assigned to employees and ensure these respirators match the make, model, and size in their most recent annual fit test.

Response

Power Operations agrees with this recommendation. The deficiencies identified during this evaluation have been corrected. Power Operations is developing an aid for employees in the RPP that will show the make, model, style, and size of the respirator for which they have been fit tested along with dates for their fit test and medical evaluation.

David P. Wheeler
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4. Enforce facial hair requirements for employees approved for respirator use or provide loose-fitting hoods to accommodate employees with facial hair.

Response

Power Operations partially agrees with this recommendation. We agree that, prior to wearing a tight-fitting respirator, an employee should be shaved to the extent they can achieve a proper seal on the respirator. Sites maintain shaving supplies on-site to allow these employees to shave as needed prior to wearing a respirator for routine work. Employees in a role that could require them to use a respirator in an emergency (ex. Fire Brigade) should be adequately shaved prior to beginning their shift.

5. Perform a review of all areas where employees store respirators to verify proper storage, provide lockers or containers for proper storage where none exist, and reinforce proper storage procedures to employees.

Response

Power Operations agrees with this recommendation. We will ensure that respirators are stored in accordance with TVA-TSP-18.916 and reinforce these requirements with effected employees.

Thank you for allowing us to provide these comments. Please contact us if you have any questions.



Jacinda B. Woodward
Senior Vice President
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