



OFFICE OF THE  
INSPECTOR GENERAL

**UNITED STATES**  
**NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

February 1, 2018

MEMORANDUM TO: Victor M. McCree  
Executive Director for Operations

FROM: Dr. Brett M. Baker */RA/*  
Assistant Inspector General for Audits

SUBJECT: STATUS OF RECOMMENDATIONS: AUDIT OF NRC'S  
FIRE PROTECTION OVERSIGHT FOR OPERATING  
REACTORS (OIG-17-A-10)

REFERENCE: DEPUTY EXECUTIVE DIRECTOR FOR REACTOR AND  
PREPAREDNESS PROGRAMS MEMORANDUM DATED  
JANUARY 19, 2018

Attached is the Office of the Inspector General's (OIG) analysis and status of recommendations as discussed in the agency's response dated January 19, 2018. Based on this response, both recommendations from this audit (recommendations 1 and 2) are now closed.

If you have questions or concerns, please call me at (301) 415-5915 or Paul Rades, Team Leader, at (301) 415-6228.

Attachment: As stated

cc: R. Lewis, OEDO  
H. Rasouli, OEDO  
J. Jolicouer, OEDO  
J. Bowen, OEDO  
EDO\_ACS Distribution Resource

## Audit Report

### Audit of NRC's Fire Protection Oversight for Operating Reactors

#### OIG-17-A-10

#### Status of Recommendations

Recommendation 1: Identify and implement best practices to enhance inspectors' ability to apply the appropriate regulatory requirements, licensing basis, and guidance documents to individual plants.

Agency Response Dated  
January 19, 2018:

Action Completed.

The Office of Nuclear Reactor Regulation (NRR) and Office of Nuclear Regulatory Research (RES) staff conducted training sessions to prepare regional inspectors to inspect plants licensed under Title 10 of the Code of Federal Regulations (10 CFR) 50.48(c) and deterministic aspects of postfire safe-shutdown analysis and fire-induced circuit failures (covering plants licensed under 10 CFR 50.48(b) or 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979").

These classroom instructor led training sessions covered specific topics, such as (1) NFPA 805 nuclear safety capability assessment, performance criteria, performance objectives, and goals for nuclear safety and radioactive release, including the methods and documentation to demonstrate compliance with the requirements and licensing basis, (2) postfire safe shutdown adverse effects, and (3) fire induced circuit failure modes, including hot shorts, open circuits, conductor to external ground short circuits, direct circuit failures, and single/multiple spurious actuations. The training sessions were to ensure that the inspection staff identifies the appropriate regulations, licensing basis documents, and guidance documents that are applicable to the areas being inspected. Initial feedback indicates that the training has covered the necessary fire protection licensing basis topics and has enhanced understanding of the fire protection regulations and licensing bases.

## **Audit Report**

### **Audit of NRC's Fire Protection Oversight for Operating Reactors**

#### **OIG-17-A-10**

#### **Status of Recommendations**

##### Recommendation 1 (cont.):

In addition, since April 2017, the staff has held four bimonthly fire protection conference calls with regional inspection staff and management. The calls discussed various fire protection issues, onsite inspection findings and observations, and emerging fire protection issues at the regions. The staff will continue to hold bimonthly fire protection conference calls with regional inspection staff and management to discuss various fire protection issues. Summaries of the fire protection conference calls are available at ADAMS.

The NRR staff has developed a Web based, self-study training course, "NFPA 805 (Triennial) NRC Inspector Training". This online training course was converted from the classroom instructor led training. This course trains regional inspectors to prepare to inspect plants licensed under 10 CFR 50.48(c) using NFPA 805. This course is intended for inspectors who are familiar with the fire protection triennial inspections. The training gives background on NFPA 805, the analysis that the licensee performed, and information directly linked to the information in the NFPA 805 triennial inspection procedure. The overall objective of the training is to (1) prepare inspectors to understand the NFPA 805 licensing and analysis basis and (2) prepare inspectors to inspect an NFPA 805 risk informed, performance based fire protection program. The handbook, slides, sample amendment and safety evaluation, and other references are included in ADAMS.

RES staff has developed a Web based, self-study training course, "NRC Inspector Training Post Fire Safe Shutdown". This online training course was also converted from the classroom instructor led training. The course teaches the fundamentals of operations, licensing, and inspection of commercial nuclear power plants and provides the knowledge and skills needed to verify conformance to deterministic requirements governing the fire protection of safe shutdown capability (10 CFR 50.48, "Fire Protection"; Appendix R to 10 CFR Part 50; or Section 9.5 1.1 of

## **Audit Report**

### **Audit of NRC's Fire Protection Oversight for Operating Reactors**

#### **OIG-17-A-10**

#### **Status of Recommendations**

##### Recommendation 1 (cont.):

NUREG 0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition"), as specified in the plant specific fire protection licensing basis. The training is specifically designed to supply NRC inspectors (of all levels) with knowledge to conduct deterministic assessments of post fire safe shutdown capability, including the systems and equipment necessary to achieve safe shutdown conditions in the event of fire, with emphasis on the design and operation of electrical distribution and control systems. The goal of this Web based training is to provide NRC inspectors with a fundamental understanding of post fire safe-shutdown capability as it relates to regulatory requirements and the licensing basis, essential systems and equipment, the adequacy of engineering analysis, fire induced circuit failure analysis per NRC guidance, the design and implementation of alternative or dedicated shutdown, operator manual actions outside the control room, and the design change process.

Both of these training courses are intended to support meeting part of the required training identified in Inspection Manual Chapter 1245, Appendix C7, "Fire Protection Inspector Technical Proficiency Training and Qualification Journal."

Further, the staff has developed the following inspector desktop tool, which will strengthen the inspection staff's ability to apply the appropriate regulatory requirements, licensing basis, and guidance documents to individual plants to verify that a licensee's fire protection program is correctly implemented in accordance with the current licensing basis and its fire protection program license condition:

- Inspector Desktop Tool—Fire Protection Current Licensing Basis.

## Audit Report

### Audit of NRC's Fire Protection Oversight for Operating Reactors

OIG-17-A-10

#### Status of Recommendations

Recommendation 1 (cont.):

This tool is maintained internally by NRR fire protection engineers. To keep it current and accurate, the staff will continually update this tool as new fire protection documents related to the licensing basis become available.

The NRR staff has coordinated the above response with regional management and fire protection inspection staff and has determined that fire protection training and related documents would satisfy inspector needs.

With these actions, the staff considers Recommendation 1 to be completed and recommends closure.

Point of Contact: Jay E. Robinson, NRR/DRA  
(301) 415 2879

OIG Analysis:

OIG has reviewed documentation provided by staff, as well as related documentation in ADAMS and iLearn, and verified that the actions described above meet the intent of recommendation 1. This recommendation is now closed.

**Status:**

Closed.

## Audit Report

### Audit of NRC's Fire Protection Oversight for Operating Reactors

#### OIG-17-A-10

#### Status of Recommendations

Recommendation 2: Identify and reinforce tools and methods available for identifying and communicating issues suitable for knowledge transfer to improve future inspections.

Agency Response Dated  
January 19, 2018:

Action Completed.

In the next updates to Inspection Procedure (IP) 71111.05XT, "Fire Protection—NFPA 805 (Triennial)," and IP 71111.05T, "Fire Protection (Triennial)," the staff will add a statement in the corrective action portion of each IP to require or guide inspectors to review the past corrective action documents that resulted from the last triennial fire protection inspection (TFPI) to ensure that the inspection staff has reviewed previous inspection issues for the operating reactor being inspected. This review would help an inspector establish the status of existing resolutions to previous inspection issues before conducting a fire protection inspection. To implement this change in TFPI procedures IP 71111.05XT and IP 71111.05T, the staff has issued Reactor Oversight Process Feedback Forms.

In addition, the staff has developed the following inspector desktop tool for TFPI knowledge transfer, which will help inspection staff review fire protection issues discussed during TFPIs that turned out not to be violations or potential findings:

- Inspector Desktop Tool—Fire Protection Triennial Inspection Knowledge Transfer.

This tool is maintained internally by NRR fire protection engineers. To keep it current and accurate, the staff will continually update this tool as new and revised documents related to fire protection become available.

## Audit Report

### Audit of NRC's Fire Protection Oversight for Operating Reactors

OIG-17-A-10

#### Status of Recommendations

Recommendation 2 (cont.):

The NRR staff has coordinated the above response with regional management and fire protection inspection staff and has determined that the above documents would satisfy inspector needs.

#### **Periodic Update of Inspector Desktop Tool**

To keep them current and accurate, the staff will periodically update inspector desktop tools as new and revised documents related to fire protection become available, ensuring that the regional and site inspection staff have new and updated information. The staff has found that it would be most efficient to update the inspector desktop tool periodically, with the same frequency that the staff issues the summary of its bimonthly fire protection conference call with the regions. The staff expects that updates will likely occur bimonthly. Staff members within PRA Licensing Branch - B have been assigned tasks to update the desktop tools.

With these actions, the staff considers Recommendation 2 to be completed and recommends closure.

Point of Contact: Jay E. Robinson, NRR/DRA  
(301) 415 2879

OIG Analysis:

OIG has reviewed documentation referenced in the staff's response and verified that the actions described above meet the intent of recommendation 2. This recommendation is now closed.

Status:

Closed.