



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

September 6, 2022

Mr. David P. Rhoades  
Senior Vice President  
Constellation Energy Generation, LLC  
President and Chief Nuclear Officer (CNO)  
Constellation Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 – NOTIFICATION  
OF NRC FIRE PROTECTION TEAM INSPECTION REQUEST FOR  
INFORMATION: INSPECTION REPORT 05000254/2022011; 05000265/2022011

Dear Mr. Rhoades:

The purpose of this letter is to notify you that the U.S. Nuclear Regulatory Commission (NRC) Region III staff will conduct a Fire Protection Team Inspection (FPTI) at your Quad Cities Nuclear Power Station, Units 1 and 2 beginning November 28, 2022. The inspection will be conducted in accordance with IP 71111.21N.05, "Fire Protection Team Inspection (FPTI)," dated June 12, 2019.

The inspection will verify that plant Systems, Structures, and Components (SSCs) and/or administrative controls credited in the approved Fire Protection Program (FPP) can perform their licensing basis functions.

The schedule for the inspection is as follows:

- Preparation week (R-III office): November 21, 2022
- Week 1 of onsite inspection: November 28 - December 2, 2022
- Week 2 of onsite inspection: December 12 - 16, 2022

Experience has shown that the baseline fire protection team inspections are extremely resource intensive, both for the NRC inspectors and the licensee staff. In order to minimize the inspection impact on the site and to ensure a productive inspection for both organizations, we have enclosed a request for documents needed for the inspection. These documents have been divided into three groups.

The first group lists information necessary to aid the inspection team in choosing specific focus areas for the inspection and to ensure that the inspection team is adequately prepared for the inspection. It is requested that this information be provided to the lead inspector via mail or electronically no later than October 28, 2022.

The second group of requested documents consists of those items that the team will review, or need access to, during the inspection. Please have this information available by the first day of the first onsite inspection week November 28, 2022.

The third group lists the information necessary to aid the inspection team in tracking issues identified as a result of the inspection. It is requested that this information be provided to the lead inspector as the information is generated during the inspection.

It is important that all of these documents are up to date and complete in order to minimize the number of additional documents requested during the preparation and/or the onsite portions of the inspection.

The lead inspector for this inspection is Mr. A. Dahbur. If there are any questions about the inspection or the material requested, please contact the lead inspector at 630-829-9810 or via e-mail at [Alan.Dahbur@nrc.gov](mailto:Alan.Dahbur@nrc.gov). This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,



Signed by Dahbur, Alan  
on 09/06/22

Alan Dahbur, Senior Reactor Inspector  
Engineering Branch 3  
Division of Reactor Safety

Docket Nos. 50-254 and 50-265  
License Nos. DPR-29 and DPR-30

Enclosure:  
Information Request for Fire Protection  
Team Inspection

cc: Distribution via LISTSERV®

Letter to David Rhoades from Alan Dahbur dated September 6, 2022.

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 – NOTIFICATION OF NRC FIRE PROTECTION TEAM INSPECTION REQUEST FOR INFORMATION: INSPECTION REPORT 05000254/2022011; 05000265/2022011

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## FIRE PROTECTION TEAM INSPECTION SUPPORTING DOCUMENTATION

### ***I. Information Requested Prior to the Inspection Preparation Week***

The following information is requested by **October 28, 2022**. If you have any questions regarding this request, please call the lead inspector as soon as possible. All information should be sent to Alan Dahbur (e-mail address) [Alan.Dahbur@nrc.gov](mailto:Alan.Dahbur@nrc.gov). Electronic media is preferred (e.g., via Share File System).

1. One set of hard-copy documents for facility layout drawings which identify plant fire area delineation; areas protected by automatic fire suppression and detection; and locations of fire protection equipment.
2. Licensing Information:
  - a. All NRC Safety Evaluation Reports (SERs) applicable to fire protection (specifically including those SERs referenced by the plant fire protection license condition) and all licensing correspondence referenced by the SERs;
  - b. All licensing correspondence associated with the comparison to Standard Review Plan (NUREG-0800), Section 9.5.1 or equivalent for licensing purposes;
  - c. Exemptions from Title 10 of the *Code of Federal Regulations* (10 CFR) 50.48 and 10 CFR Part 50, Appendix R, and associated licensing correspondence;
  - d. For pre-1979 plants, all licensing correspondence associated with those sections of 10 CFR Part 50, Appendix R, that are not applicable to the plant under 10 CFR 50.48(b)(1). Specifically, the licensing correspondence associated with those fire protection features proposed or implemented by the licensee that have been accepted by the NRC staff as satisfying the provisions of Appendix A to Branch Technical Position (BTP) APCS 9.5-1 reflected in the NRC fire protection SERs issued before February 19, 1981, (10 CFR 50.48(b)(1)(i)); or those fire protection features, which were accepted by the NRC staff in comprehensive fire protection SERs issued before Appendix A to BTP APCS 9.5-1 was published in August 1976 (10 CFR 50.48(b)(1)(ii)); and
  - e. The final safety analysis report sections applicable to fire protection, FHA, and SSA in effect at the time of original licensing.
3. Fire Protection Program:
  - a. A listing of changes made to the Fire Protection Program (FPP) since the last triennial fire protection inspection;
  - b. For pre-1979 plants, a listing of the protection methodologies identified under 10 CFR Part 50, Appendix R, Section III.G used to achieve compliance for fire zones/areas. That is, please specify whether 3-hour rated fire barriers; (Section III.G.2.a), 20-foot separation along with detection and suppression; (Section III.G.2.b), 1-hour rated fire barriers with detection and suppression; (Section III.G.2.c), or alternative shutdown capability; (Section III.G.3) is used as a strategy for each selected fire zone/area;

## **FIRE PROTECTION TEAM INSPECTION SUPPORTING DOCUMENTATION**

- c. A list of Generic Letter 86-10 evaluations (i.e., a list of adverse to safe shutdown evaluations);
  - d. A list of applicable codes and standards related to the design of plant fire protection features. The list should include National Fire Protection Association (NFPA) code versions committed to (i.e., the NFPA Codes of Record);
  - e. List of plant deviations from code commitments and associated evaluations;
  - f. Fire Protection Program and/or Fire Protection Plan document;
  - g. (If available) Fire Probabilistic Risk Assessment (PRA) Summary Report or full PRA document (if summary document not available);
  - h. List of the top 25 highest fire CDF scenarios for each unit;
  - i. List of Fire Areas/Zones ranked by contribution to CDF (i.e., ranking of highest to lowest risk fire areas/zones);
  - j. List of the top 25 highest fire LERF scenarios for each unit; and
  - k. Risk ranking of operator actions and/or recovery actions from your site-specific PRA sorted by Risk-Achievement Worth (RAW) and human reliability worksheets for these items.
4. Facility Information:
- a. Piping and instrumentation (flow) diagrams showing the components used to achieve and maintain hot standby and cold shutdown for fires outside the control room, and those components used for those areas requiring alternative shutdown capability;
  - b. One-line schematic drawings of the electrical distribution system for 4160 Volts alternating current (Vac) down to 480Vac;
  - c. One-line schematic drawings of the electrical distribution system for 250 Volts direct current (Vdc) and 125Vdc systems as applicable;
  - d. Logic diagrams showing the components used to achieve and maintain hot standby and cold shutdown; and
  - e. Safe shutdown cable routing database (requested electronically, such as on compact disc, if available).
5. Operations Response for Fire Protection:
- a. Plant operating procedures which specify the initial operations response to a fire alarm or annunciator.

## FIRE PROTECTION TEAM INSPECTION SUPPORTING DOCUMENTATION

### 6. Corrective Actions:

- a. Listing of open and closed fire protection condition reports (i.e., problem identification forms and their resolution reports) since the date of the last, fire protection inspection; and
- b. List of current fire impairments, including duration.

### 7. General Information:

- a. A listing of abbreviations and/or designators for plant systems;
- b. Organization charts of site personnel down to the level of fire protection staff personnel; and
- c. A phone list for onsite licensee personnel.

## ***II. Information Requested to Be Available on First Day of the First Onsite Inspection Week (November 28, 2022)***

The following information is requested to be provided on the first day of inspection. It is requested that this information be provided on three sets of CDs (searchable, if possible).

### 1. Program Procedures:

- a. Procedures for:
  - i. Administrative controls (such as allowed out of service times and compensatory measures) for fire protection systems and components;
  - ii. Control of transient combustibles; and
  - iii. Control of hot work.
- b. List of maintenance and surveillance testing procedures for alternative shutdown capability and fire barriers, detectors, pumps, and suppression systems; and
- c. List of maintenance procedures which routinely verify fuse breaker coordination in accordance with the post-fire safe shutdown coordination analysis.

### 2. Design and Equipment Information **(for only selected fire zone/area(s) and/or SSCs to be determined during inspection preparation week):**

- a. Coordination calculations and/or justifications that verify fuse/breaker coordination for SSCs that are fed off of the same electrical buses as components in the protected safe shutdown train;
- b. Copies of significant fire protection and post-fire safe shutdown related design change package descriptions (including their associated 10 CFR 50.59 evaluations) and Generic Letter (GL) 86-10 (or adverse to safe shutdown) evaluations;
- c. Gaseous suppression system pre-operational testing, if applicable, for selected fire zones/areas;

## FIRE PROTECTION TEAM INSPECTION SUPPORTING DOCUMENTATION

- d. Hydraulic calculations and supporting test data which demonstrate operability for water suppression systems;
  - e. Alternating current (ac) coordination calculations for 4160Vac down to 480Vac electrical systems; and
  - f. List of all fire protection or Appendix R calculations.
3. Assessment and Corrective Actions:
- The three most recent fire protection Quality Assurance audits and/or fire protection self-assessments.
4. Any updates to information previously provided.
5. Classic Fire Protection **(for only selected fire zone/area(s) and/or SSCs to be determined during inspection preparation week):**
- a. Copy of FPP implementing procedures (e.g., administrative controls, surveillance testing, and fire brigade);
  - b. Pre-fire plans for selected fire area(s); and
  - c. List of fire protection system design changes completed in the last 3 years.
6. Electrical **(for only selected fire zone/area(s) and/or SSCs to be determined during inspection preparation week):**
- a. Nuclear safety circuit coordination analysis for fuse and breaker coordination of safe shutdown components;
  - b. Administrative or configuration control procedures that govern fuse replacement (e.g., fuse control procedures);
  - c. Maintenance procedures that verify breaker over-current trip settings to ensure coordination remains functional, for post-fire nuclear safety capability components;
  - d. Last surveillance demonstrating operability of those components operated from the primary control stations;
  - e. Schematic or elementary diagrams for circuits (only for selected SSCs) to be reviewed (C-size paper drawings);
  - f. Cable routing for components and equipment credited for post-fire nuclear safety capability systems and components;
  - g. List of post-fire nuclear safety capability system and component design changes completed in the last 3 years; and
  - h. List of identified fire induced circuit failure analyses.

## FIRE PROTECTION TEAM INSPECTION SUPPORTING DOCUMENTATION

7. Operations:
  - a. List of procedures that implement Cold Shutdown Repairs (if applicable for selected fire area);
  - b. For Cold Shutdown Repairs, provide the following:
    - i. Procedure for inventory and inspection (i.e., needed tools, material, etc.); and
    - ii. Most recent inspection and inventory results.
  - c. List of licensed operator Job Performance Measures for operator actions required to achieve and maintain post-fire nuclear safety performance criteria (for selected SSCs and fire area);
  - d. For Radio communications, provide the following:
    - i. Communications Plan for firefighting and post-fire safe shutdown manual actions;
    - ii. Repeater locations;
    - iii. Cable routing for repeater power supply cables;
    - iv. Radio coverage test results; and
    - v. Radio Dead Spot locations in the plant.
  - e. Environmental and habitability evaluations for post-fire operator actions (temperature, smoke, humidity, SCBAs, etc.).
8. Administrative Control, Oversight, and Corrective Action Programs:
  - a. Self-assessments, peer assessments, and audits of fire protection activities for the last 3 years;
  - b. Self-assessments, peer assessments, and audits of post-fire nuclear safety capability methodology for the last 3 years; and
  - c. List of fire event analysis reports for the last 3 years.
9. Any updates to information previously provided.

### ***III. Information Requested to Be Provided Throughout the Inspection***

1. Copies of any corrective action documents generated as a result of the inspection team's questions or queries during this inspection.
2. Copies of the list of questions submitted by the inspection team members and the status/resolution of the information requested (provided daily during the inspection to each inspection team member).