



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

January 23, 2012

Mr. Michael J. Pacilio  
Senior Vice President, Exelon Generation Company, LLC  
President and Chief Nuclear Officer, Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3 - NOTIFICATION  
OF CONDUCT OF A TRIENNIAL FIRE PROTECTION BASELINE INSPECTION

Dear Mr. Pacilio:

The purpose of this letter is to notify you that the U.S. Nuclear Regulatory Commission (NRC) staff will conduct a triennial fire protection baseline inspection at Peach Bottom Atomic Power Station, Units 2 and 3, beginning in April, 2012. The inspection team will be led by Mr. Keith Young from the NRC Region I office. The team will be composed of personnel from the NRC Region I office. The inspection will be conducted in accordance with NRC Inspection Procedure 71111.05T, the NRC's baseline fire protection inspection procedure.

The schedule for the inspection is as follows:

- Information Gathering Visit - Week of April 15, 2012
- On-site Inspection - Weeks of April 29 and May 13, 2012

The purposes of the information gathering visit are to obtain information and documentation needed to support the inspection, to become familiar with the station fire protection programs, fire protection features, post-fire safe shutdown capabilities, plant layout, mitigating strategies to address Section B.5.b of NRC Order EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures," dated February 25, 2002, and Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(hh)(2); and, as necessary, obtain plant specific site access training and badging for unescorted site access.

An initial list of the documents the team will review during the conduct of the inspection are listed in Enclosures 1 and 2. The team leader will contact you with any additional specific document requests prior to the information gathering visit.

During the information gathering visit, the team will also discuss the following inspection support administrative details: office space size and location; specific documents requested to be made available to the team in their office spaces; arrangements for reactor site access (including radiation protection training, security, safety, and fitness for duty requirements); and the availability of knowledgeable plant engineering and licensing organization personnel to serve as points of contact during the inspection.

We request that during the on-site inspection week you ensure that copies of analyses, evaluations or documentation regarding the implementation and maintenance of the station fire protection program, including post-fire safe shutdown capability, be readily accessible to the team for their review. Of specific interest for the fire protection portion of the inspection are those documents which establish that your fire protection program satisfies NRC regulatory requirements and conforms to applicable NRC and industry fire protection guidance. For the B.5.b portion of the inspection, those documents implementing your mitigating strategies and demonstrating the management of your commitments for the strategies are of specific interest. Also, personnel should be available at the site during the inspection who are knowledgeable regarding those plant systems required to achieve and maintain safe shutdown conditions from inside and outside the control room including the electrical aspects of the relevant post-fire safe shutdown analyses, reactor plant fire protection systems and features, and the station fire protection program and its implementation.

This letter does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing information collection requirements were approved by the Office of Management and Budget, control number 3150-0011. The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

Your cooperation and support during this inspection will be appreciated. If you have questions concerning this inspection, or the inspection team's information or logistical needs, please contact Keith Young, the team leader, in the Region I office at (610) 337-5293.

Sincerely,



John F. Rogge, Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket Nos. 50-277; 50-278  
License Nos. DPR-44; DPR-56

Enclosures:

1. Fire Protection Program Supporting Documentation
2. Mitigating Strategies Supporting Documentation

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We request that during the on-site inspection week you ensure that copies of analyses, evaluations or documentation regarding the implementation and maintenance of the station fire protection program, including post-fire safe shutdown capability, be readily accessible to the team for their review. Of specific interest for the fire protection portion of the inspection are those documents which establish that your fire protection program satisfies NRC regulatory requirements and conforms to applicable NRC and industry fire protection guidance. For the B.5.b portion of the inspection, those documents implementing your mitigating strategies and demonstrating the management of your commitments for the strategies are of specific interest. Also, personnel should be available at the site during the inspection who are knowledgeable regarding those plant systems required to achieve and maintain safe shutdown conditions from inside and outside the control room including the electrical aspects of the relevant post-fire safe shutdown analyses, reactor plant fire protection systems and features, and the station fire protection program and its implementation.

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/RA/

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SUNSI Review Complete: JFR (Reviewer's Initials)

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ROPreports Resource

## **Enclosure 1**

### **Fire Protection Program Supporting Documentation**

The documents and information requested below should generally be made available to the inspection team during the on-site information gathering visit. Electronic format is the preferred media, except where specifically noted. Paper records (hard copy) are of course always acceptable.

Prior to the on-site information gathering visit, the team leader should identify a preliminary list of fire areas being considered for inspection. During the information gathering visit, or shortly thereafter, the fire areas selected for inspection will be determined.

This document request is based on typical documents that a generic plant might have. As such, this generic document request is not meant to imply that any specific plant is required to have all of the listed documents. It is recognized that some documents listed below may not be available for your plant. In addition, the document titles listed below are based on typical industry document names; your plant specific document titles may vary.

#### **A. DESIGN AND LICENSING BASIS DOCUMENTS**

A.1 Fire Protection Program Plan.

A.2 Fire Hazards Analysis.

A.3 Post-fire Safe Shutdown Analysis.

A.4 Post-fire Alternative Shutdown Analysis.

A.5 LIST of post-fire safe shutdown or alternative shutdown systems.

A.6 Fire Protection System Design Basis Document.

A.7 Post-fire Safe Shutdown or Alternative Shutdown Design Basis Document.

A.8 LIST of plant fire protection licensing basis documents including, but not limited to:

- Applicable NFPA codes and standards (i.e., codes of record);
- Deviations from NFPA codes of record;
- NRC approved exemptions for plant fire protection and post-fire safe shutdown or alternative shutdown features;
- NRC Safety Evaluation Reports for fire protection and post-fire safe shutdown or alternative shutdown features.

A.9 Facility Operating License.

A.10 Technical Specifications (electronic format only).

A.11 Technical Requirements Manual (electronic format only).

A.12 Updated Final Safety Analysis Report (electronic format only).

A.13 Individual Plant Examination for External Events (IPEEE) (Fire Chapter ONLY), including:

- Results of any post-IPEEE reviews;
- LIST of actions taken or plant modifications performed in response to the IPEEE results.

A.14 Fire PRA Summary Document (if available).

B. GENERAL PLANT DESIGN DOCUMENTS

B.1 Piping and instrumentation diagrams (P&IDs) for post-fire safe shutdown or alternative shutdown systems (C-size paper drawings).

P&IDs for main fire loop (including fire pumps). Also for sprinkler, CO<sub>2</sub> and Halon systems if in selected fire areas for review.

B.2 AC and DC electrical system single line diagrams, from off-site power down to the lowest safety-related bus level (typically 120 Volts AC and DC) (C-size paper drawings).

B.3 Equipment location drawings which identify the physical plant locations of post-fire safe shutdown or alternative shutdown equipment (C-size paper drawings) (only for selected fire areas).

B.4 Plant layout drawings which identify: (C-size paper drawings).

- Plant fire area boundaries;
- Areas protected by automatic fire suppression and detection;
- Locations of fire protection equipment.

B.5 Fire area barrier drawings (C-size paper drawings) (only for selected fire areas).

C. CLASSIC FIRE PROTECTION

C.1 Fire protection program implementing procedures (e.g., administrative controls, surveillance testing, fire brigade).

- C.2 Last 2 completed surveillance's of fire protection features in the selected fire areas (detection, suppression, damper inspections, damper tests, penetration inspections, barrier inspections, etc.).
- C.3 Hydraulic calculation or analysis for fire protection water system.
- C.4 Last 2 completed annual fire pump pressure and flow tests.
- C.5 Last 2 completed monthly and/or quarterly fire pump tests.
- C.6 Last 2 completed fire loop flow tests and loop flushes.
- C.7 CO<sub>2</sub> and Halon initial discharge testing or calculation that determined appropriate concentrations and soak or hold times can be achieved (only for selected fire areas).
- C.8 Last 5 hot work permits (at power).
- C.9 Last 5 transient combustible permits (at power).
- C.10 For Fire Brigade Drills, provide the following:
- Last 5 fire brigade drill critiques;
  - Last unannounced drill critique;
  - Dates, shifts, and locations of unannounced drills for last three years;
  - Critique of last back-shift drill;
  - Summary of any unsatisfactory drill performance items for last three years;
  - Last unannounced drill critique by a qualified individual independent of the licensee's staff.
- C.11 Fire Brigade Qualifications, including self-contained breathing apparatus (SCBA) and training lesson plans.
- C.12 Flooding analysis for selected fire areas which demonstrates:
- a fire water pipe break in the selected fire areas, won't effect safe shutdown (SSD) capability for equipment in the selected fire areas;
  - a fire water pipe break in an adjacent fire area, won't affect SSD capability for equipment in the selected fire areas.
- C.13 Pre-fire plans (only for selected fire areas).
- C.14 For Emergency Lighting Units in the selected fire areas, provide the following:
- LIST of Preventive Maintenance (PM) and PM frequencies;
  - Last completed surveillances;
  - vendor manual(s);
  - results of black-out testing.

- C.15 Impairment Log (at the start of the inspection), for fire protection features that are out of service.
- C.16 Three Fire Protection screening reviews for recent design changes, modifications, or temporary modifications (e.g., an 86-10 review that screened out).
- C.17 LIST of penetration seal work, re-work, or installation activities, in the last three years. (only for selected fire areas)
- C.18 LIST of fire wrap work, re-work, or installation activities, in the last three years. (only for selected fire areas).
- C.19 Fire protection system health reports for two most recent quarters.
- C.20 Emergency lighting system health reports for two most recent quarters.
- C.21 LIST of fire protection system design changes completed in the last three years (including their associated 10 CFR 50.59 and Generic Letter 86-10 evaluations).
- C.22 Licensee review of industry operating experience, such as:
  - NRC IN 2006-22, Ultra-low Sulfur Diesel Fuel Oil, for diesel fire pump;
  - Evaluation and controls for Bio-Diesel Fuel Oil usage for diesel fire pump.

D. ELECTRICAL

- D.1 Identify whether the cables in the selected fire areas are predominantly Thermoset or Thermoplastic. Specifically identify any Thermoplastic cable in the selected fire areas.
- D.2 Breaker and fuse coordination calculation for post-fire safe shutdown or alternative shutdown equipment (only for selected fire areas).
- D.3 Administrative or configuration control procedures that govern fuse replacement (e.g., fuse control procedures).
- D.4 Maintenance procedures that verify breaker over-current trip settings to ensure coordination remains functional, for post-fire safe shutdown or alternative shutdown equipment.
- D.5 Electrical system health reports.
- D.6 Last surveillance demonstrating operability of those components operated from the remote or alternative shutdown panel.
- D.7 Schematic or elementary diagrams for circuits to be reviewed (C-size paper drawings).
- D.8 Cable routing for components and equipment credited for post-fire safe shutdown or alternative shutdown.



D.9 LIST of post-fire safe shutdown or alternative shutdown design changes completed, in the last three years.

E. SPURIOUS FIRE INDUCED CIRCUIT FAULT

E.1 LIST of identified fire induced circuit failure configurations (only for selected fire areas).

E.2 MSO Expert Panel Report.

F. OPERATIONS

F.1 Copies of licensed operator Job Performance Measures (JPMs) for operator manual actions required by post-fire safe shutdown or alternative shutdown.

F.2 Copies of non-licensed operator training associated with post-fire safe shutdown or alternative shutdown manual actions which would be performed by a non-licensed operator (including JPMs, in-field training walkdowns, simulations, or initial qualification).

F.3 Lesson plans and simulator scenarios for post-fire safe shutdown and alternative shutdown training for licensed and non-licensed operators.

F.4 Time lines for time-critical manual operator actions, including time line validations.

F.5 Thermal hydraulic calculation or analysis that determines the time requirements for time-critical manual operator actions.

F.6 Operating procedures for post-fire safe shutdown from the control room with a postulated fire in the selected fire area.

F.7 Operating procedures for post-fire alternative shutdown from outside the control room.

F.8 LIST of Procedures that implement Cold Shutdown Repairs.

F.9 Provide last performed inventory and inspection of Cold Shutdown equipment (i.e., needed tools, material, etc.).

F.10 For radio communications, provide the following:

- Communications Plan for fire fighting and post-fire safe shutdown manual actions;
- Repeater locations;
- Cable routing for repeater power supply cables;
- Radio coverage test results;
- Radio Dead Spot locations in the plant.

F.11 Exemption requests for operator manual actions for III.G.2 fire areas, that have been submitted but have not yet been approved.

F.12 Environmental and habitability evaluations for post-fire operator manual actions (temperature, smoke, humidity, SCBAs, etc.).

G. ADMINISTRATIVE CONTROL, OVERSIGHT, AND CORRECTIVE ACTION PROGRAMS

G.1 LIST of open condition reports for the fire protection system and for post-fire safe shutdown and alternative shutdown issues.

G.2 LIST of condition reports for fire protection and post-fire safe shutdown and alternative shutdown issues closed in the past three years.

G.3 Self-assessments, peer assessments, and audits of fire protection activities for last three years.

G.4 Self-assessments, peer assessments, and audits of post-fire safe shutdown or alternative shutdown capabilities for last three years.

G.5 LIST of all Generic Letter 86-10 evaluations.

G.6 COPY of all Generic Letter 86-10 evaluations performed in last three years.

## Enclosure 2

### Mitigating Strategies Supporting Documentation

1. LIST of all changes to regulatory commitments made to meet the requirements of Section B.5.b of NRC Order, "Order for NRC Interim Safeguards and Security Compensatory Measures," dated February 25, 2002, the subsequently imposed license conditions, and Title 10 of the *Code of Federal Regulations* (10 CFR) 50.54(hh)(2).
2. LIST of procedures and guidelines that were revised or generated to implement the mitigating strategies. These could be extensive damage mitigation guidelines (EDMGs), severe accident management guidelines (SAMGs), emergency operating procedures (EOPs), abnormal operating procedures (AOPs), etc.
3. A matrix that shows the correlation between the mitigation strategies identified in Nuclear Energy Institute 06-12, Revision 2, "B.5.b Phase 2 & 3 Submittal Guideline," issued December 2006, and the site-specific procedures or guidelines that are used to implement each strategy.
4. Engineering evaluations or calculations that were used to verify the engineering bases for the mitigating strategies.
5. Piping and instrumentation diagrams (P&ID) or simplified flow diagrams for systems relied upon in the mitigating strategies. These could be the type used for training. (C-size paper drawings)
6. LIST of modification packages, or summary descriptions of modifications with simplified drawings, for necessary facility changes to implement the mitigating strategies.
7. Procedures used to inventory equipment (e.g., hoses, fittings, pumps, etc.) required to be used to implement the mitigating strategies.
8. LIST of B.5.b strategies, if any, which have implementing details that differ from that documented in the submittals or the safety evaluation report.
9. Site general arrangement drawings that show the majority of buildings and areas referenced in B.5.b documents (C-size paper drawings).
10. Training records, training matrix, and lesson plans related to B.5.b.
11. Copies of memoranda of understanding (MOU) (e.g., with local fire departments) required to implement any mitigating strategies.