



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE RD. SUITE 210  
LISLE, IL 60532-4352

March 14, 2014

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

SUBJECT: CLINTON POWER STATION  
TRIENNIAL FIRE PROTECTION INSPECTION REPORT  
05000461/2014007

Dear Mr. Pacilio:

On February 14, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed a Triennial Fire Protection Inspection at your Clinton Power Station. The enclosed inspection report documents the inspection results, which were discussed on February 14, 2014, with Mr. B. K. Taber and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

The NRC inspectors documented one finding of very low safety significance (Green) in this report. This finding was determined to involve a violation of NRC requirements. However, because of its very low safety significance and because the issue was entered into your Corrective Action Program, The NRC is treating the issue as a Non-Cited Violation (NCV) in accordance with Section 2.3.2 of the NRC Enforcement Policy. Additionally, a licensee identified violation is listed in Section 4OA7 of this report.

If you contest the subject or severity of any Non-Cited Violation you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector office at the Clinton Power Station. In addition, if you disagree with the cross-cutting aspect assigned to any finding in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region III, and the NRC Resident Inspector at the Clinton Power Station.

M. Pacilio

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In accordance with Title 10, *Code of Federal Regulations* (CFR), Section 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any), will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Robert C. Daley, Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket Nos. 50-461  
License Nos. NPF-62

Enclosure:  
Inspection Report 05000461/2014007  
w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-461

License No: NPF-62

Report No: 05000461/2014007

Licensee: Exelon Generation Company, LLC

Facility: Clinton Power Station, Unit 1

Location: Clinton, IL

Dates: January 13 through February 14, 2014

Inspectors: R. A. Langstaff, Senior Reactor Inspector (Lead)  
D. J. Oliver, Reactor Inspector  
R. A. Winter, Reactor Engineer

Approved by: Robert C. Daley, Chief  
Engineering Branch 3  
Division of Reactor Safety

Enclosure

## SUMMARY

IR 05000461/2014007; 01/13/2014 – 02/14/2014; Clinton Power Station; Routine Triennial Fire Protection Baseline Inspection.

This report covers an announced triennial fire protection baseline inspection. The inspection was conducted by Region III inspectors. One finding was identified by the inspectors. The finding was considered a Non-Cited Violation (NCV) of NRC regulations. The significance of most findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Cross-cutting aspects were determined using IMC 0310, "Aspects Within the Cross Cutting Areas." Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

### A. NRC-Identified and Self-Revealed Findings

#### Cornerstone: Initiating Events

- Green. The inspectors identified a finding of very low safety significance and associated NCV of license condition 2.F for the failure to remove an identified combustible. Specifically, the failure to remove a piece of wood located directly under a safety-related cable tray for a period in excess of three years was a failure to take corrective action as required by the licensee's Quality Assurance Program. The licensee entered the issue into their Corrective Action Program and removed the piece of wood by the end of the inspection.

The finding was determined to be more than minor because the combustible material was located directly beneath a safety-related cable tray and, as such, represented a credible fire scenario. The finding was determined to be of very low safety significance (i.e., Green) because the impact of the fire would be largely limited to one train/division of equipment important to safety. The inspectors determined that the finding has a cross-cutting aspect in the area of human performance because the licensee did not ensure sufficient resources were available to support nuclear safety. Specifically, the failure to remove the identified combustible was due to a lack of resources to schedule and accomplish removing the material. [H.1] (Section 1R05.12(b)(1))

### B. Licensee-Identified Violations

Violations of very low safety significance or severity Level IV that were identified by the licensee have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's Corrective Action Program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

## **REPORT DETAILS**

### **1. REACTOR SAFETY**

#### **Cornerstones: Initiating Events and Mitigating Systems**

##### **1R05 Fire Protection (71111.05T)**

The purpose of the fire protection triennial baseline inspection was to conduct a design-based, plant specific, risk-informed, onsite inspection of the licensee's Fire Protection Program's defense-in-depth elements used to mitigate the consequences of a fire. The Fire Protection Program shall extend the concept of defense-in-depth to fire protection in plant areas important to safety by:

- preventing fires from starting;
- rapidly detecting, controlling and extinguishing fires that do occur;
- providing protection for structures, systems, and components important to safety so that a fire that is not promptly extinguished by fire suppression activities will not prevent the safe-shutdown of the reactor plant; and
- taking reasonable actions to mitigate postulated events that could potentially cause loss of large areas of power reactor facilities due to explosions or fires.

The inspectors' evaluation focused on the design, operational status, and material condition of the reactor plant's Fire Protection Program, post-fire safe shutdown systems, and B.5.b mitigating strategies. The objectives of the inspection were to assess whether the licensee had implemented a Fire Protection Program that: (1) provided adequate controls for combustibles and ignition sources inside the plant; (2) provided adequate fire detection and suppression capability; (3) maintained passive fire protection features in good material condition; (4) established adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems or features; (5) ensured that procedures, equipment, fire barriers and systems exist so that the post-fire capability to safely shut down the plant was ensured; (6) included feasible and reliable operator manual actions when appropriate to achieve safe shutdown; and (7) identified fire protection issues at an appropriate threshold and ensured these issues were entered into the licensee's Problem Identification and Resolution Program.

In addition, the inspectors' review and assessment focused on the licensee's post-fire safe shutdown systems for selected risk significant fire areas. Inspector emphasis was placed on determining that the post-fire safe shutdown capability and the fire protection features were maintained free of fire damage to ensure that at least one post-fire safe shutdown success path was available. The inspectors' review and assessment also focused on the licensee's B.5.b related license conditions and the requirements of Title 10, *Code of Federal Regulations* (10 CFR) Part 50.54 (hh)(2). Inspector emphasis was to ensure that the licensee could maintain or restore core cooling, containment, and spent fuel pool cooling capabilities utilizing the B.5.b mitigating strategies following a loss of large areas of power reactor facilities due to explosions or fires. Documents reviewed are listed in the Attachment to this report.

The fire areas and B.5.b mitigating strategies selected for review during this inspection are listed below and in Section 1R05.13. The fire areas selected constituted three inspection samples and the B.5.b mitigating strategies selected constituted three inspection samples, respectively, as defined in Inspection Procedure (IP) 71111.05T.

Fire Area	Fire Zone	Description
C-2	C-2	712-828 Containment
CB-4	CB-4	781 Div 1 Cable Spread Room
CB-5c	CB-5c	781 Div 1 and 2 Cable Risers

.2 Protection of Safe Shutdown Capabilities

a. Inspection Scope

For each of the selected fire areas, the inspectors reviewed the fire hazards analysis, safe shutdown analysis, and supporting drawings and documentation to verify that safe shutdown capabilities were properly protected.

The inspectors also reviewed the licensee's design control procedures to ensure that the process included appropriate reviews and controls to assess plant changes for any potential adverse impact on the Fire Protection Program and/or post-fire safe shutdown analysis and procedures.

b. Findings

No findings of significance were identified.

.3 Passive Fire Protection

a. Inspection Scope

For the selected fire areas, the inspectors evaluated the adequacy of fire area barriers, penetration seals, fire doors, electrical raceway fire barriers, and fire rated electrical cables. The inspectors observed the material condition and configuration of the installed barriers, seals, doors, and cables. The inspectors reviewed approved construction details and supporting fire tests. In addition, the inspectors reviewed license documentation, such as NRC safety evaluation reports, and deviations from NRC regulations and the National Fire Protection Association (NFPA) standards to verify that fire protection features met license commitments.

The inspectors walked down accessible portions of the selected fire areas to observe material condition and the adequacy of design of fire area boundaries (including walls, fire doors, and fire dampers) to ensure they were appropriate for the fire hazards in the area.

The inspectors reviewed the installation, repair, and qualification records for a sample of penetration seals to ensure the fill material was of the appropriate fire rating and that the installation met the engineering design.

b. Findings

No findings of significance were identified.

.4 Active Fire Protection

a. Inspection Scope

For the selected fire areas, the inspectors evaluated the adequacy of fire suppression and detection systems. The inspectors observed the material condition and configuration of the installed fire detection and suppression systems. The inspectors reviewed design documents and supporting calculations. In addition, the inspectors reviewed license basis documentation, such as, NRC safety evaluation reports, deviations from NRC regulations, and NFPA standards to verify that fire suppression and detection systems met license commitments.

b. Findings

No findings of significance were identified.

.5 Protection from Damage from Fire Suppression Activities

a. Inspection Scope

For the selected fire areas, the inspectors verified that redundant trains of systems required for hot shutdown would not be subject to damage from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems including the effects of flooding. The inspectors conducted walkdowns of each of the selected fire areas to assess conditions such as the adequacy and condition of floor drains, equipment elevations, and spray protection.

b. Findings

No findings of significance were identified.

.6 Alternative Shutdown Capability

a. Inspection Scope

The inspectors reviewed the licensee's systems required to achieve alternative safe shutdown to determine if the licensee had properly identified the components and systems necessary to achieve and maintain safe shutdown conditions. The inspectors also focused on the adequacy of the systems to perform reactor pressure control, reactivity control, reactor coolant makeup, decay heat removal, process monitoring, and support system functions.

The inspectors conducted selected area walkdowns to determine if operators could reasonably be expected to perform the alternate safe shutdown procedure actions and that equipment labeling was consistent with the alternate safe shutdown procedure. The review also looked at operator training as well as consistency between the operations shutdown procedures and any associated administrative controls.

b. Findings

No findings of significance were identified

.7 Circuit Analyses

a. Inspection Scope

The inspectors verified that the licensee performed a post-fire safe shutdown (SSD) analysis for the selected fire areas and the analysis appropriately identified the structures, systems, and components important to achieving and maintaining safe shutdown. Additionally, the inspectors verified that the licensee's analysis ensured that necessary electrical circuits were properly protected and that circuits that could adversely impact safe shutdown due to hot shorts, shorts to ground, or other failures were identified, evaluated, and dispositioned to ensure spurious actuations would not prevent safe shutdown.

The inspectors' review considered fire and cable attributes, potential undesirable consequences, and common power supply/bus concerns. Specific items included the credibility of the fire threat, cable insulation attributes, cable failure modes, and actuations resulting in flow diversion or loss of coolant events.

The inspectors also reviewed cable raceway drawings for a sample of components required for post-fire safe shutdown to verify that cables were routed as described in the cable routing matrices.

The inspectors reviewed circuit breaker coordination studies to ensure equipment needed to conduct post-fire safe shutdown activities would not be impacted due to a lack of coordination. Additionally, the inspectors reviewed a sample of circuit breaker maintenance records to verify that circuit breakers for components required for post-fire safe shutdown were properly maintained in accordance with procedural requirements.

The inspectors verified for cables that are important to SSD, but not part of the success path, and that do not meet the separation/protection requirements of Section III.G.2 of 10 CFR Part 50, Appendix R, that the circuit analysis considered the cable failure modes. In addition, the inspectors have verified that the licensee has either (1) determined that there is not a credible fire scenario (through fire modeling), (2) implemented feasible and reliable manual actions to assure SSD capability, or (3) performed a circuit fault analysis demonstrating no potential impact on SSD capability exists.

b. Findings

(1) Interpretation of Requirements for Multiple Spurious Operations

Based on discussions with the licensee, the inspectors identified several differences in interpretation of requirements between the inspectors and the licensee with respect to the requirements for addressing multiple spurious operations (MSOs).

*Requirement for Addressing Multiple Spurious Operations:* The licensee expressed the belief that addressing MSO's was a voluntary effort on their part versus a requirement. Although the licensee had expended resources to address MSO's, the licensee had not



updated their licensing basis documents, such as their SSD analysis, to reflect the procedure changes and modifications implemented to meet the intent of Nuclear Energy Institute (NEI) 00-01, "Guidance for Post-Fire Safe Shutdown Circuit Analysis," Revision 2.

- *Applicability of Appendix R to MSOs:* The licensee presented the view that the references to hot shorts (plural) in 10 CFR Part 50, Appendix R, Sections III.G and III.L, were only in sections of Appendix R, which pertained to the SSD train, i.e., the train to be free of fire damage. The inspectors noted that the sections with the references to hot shorts (plural) also included associated non-safety circuits that could prevent operation or cause mal-operation of systems necessary to achieve and maintain hot shutdown. As such, the inspectors considered MSO's as required to be addressed.
- *Licensing Basis Applicability for MSOs:* The inspectors noted that although Clinton Power Station is a post-1979 plant, the licensee committed to meeting Appendix R or providing equivalent protection as discussed in Section 9.5.8 of NUREG-0853, Supplement 1. In addition, Section 9.5.1 of the Updated Safety Analysis Report (USAR) noted that the licensee committed to meet Section III.G of 10 CFR Part 50, Appendix R with exceptions identified in their SSD analysis. Except for two sets of redundant valves in series, the licensee did not take any exceptions to Appendix R with respect to MSO's. The licensee presented the view that no general exceptions to MSO's were taken at the time of licensing because the common understanding was MSO's were not a consideration except as identified in Generic Letter 81-12, "Fire Protection Rule" for high-low pressure interfaces.

*Number of MSOs to be evaluated:* The licensee performed evaluation Engineering Change (EC) 383786, "MSO Scenario 5a – Additional Components Load onto Credited EDG," revision 1, to address emergency diesel generator (EDG) loading. Although the licensee evaluated 4 kiloVolt loads, the licensee chose not to evaluate 480 Volt (V) loads. The licensee cited NEI 00-01, Section 4.4.3.4, as a basis for excluding 480V loads from their review. In discussions with the licensee, the inspectors identified two interpretation issues as discussed below. The inspectors requested the licensee to perform a qualitative analysis to gauge the significance of excluding the 480V loads. In response, the licensee reviewed 480V loads greater than 30 horsepower (HP) which had not already been accounted for in the load profile. Seven such additional loads were identified which totaled 300 HP. The potential 300 HP in additional loads was within the margin for the peak ratings of the EDGs. The licensee also noted that the load profile used reflected loss-of-offsite power (LOOP) combined with loss-of-coolant accident (LOCA) loads which was a more demanding load profile than LOOP only loads which would be expected in the event of a fire. With respect to the NEI 00-01 guidance, the interpretation issues were:

- *Extent of Endorsement of NEI 00-01 Chapter 4:* Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants," Revision 2, states that "The approach outlined in Chapter 4 of NEI 00-01, which relies on the Expert Panel Process and the Generic List of Multiple Spurious Operations contained in Appendix G to that document, provides an acceptable methodology for the identification of multiple spurious actuations that may affect safe-shutdown success path SSCs." The

inspectors' view was that the endorsement was limited to use of the expert panel process and the list of MSO's in Appendix G of NEI 00-01 for guidance. The licensee's view was that the entire chapter had been endorsed by the NRC as the NRC had not taken any exceptions.

- *Limiting Analysis of Multiple Spurious Operations to Four Components:* In both Section 3.5.1.2 and Section 4.4.3.4, NEI 00-01 states: "... if the combined MSOs involve more than a total of four components or if the MSO scenario requires consideration of sequentially selected cable faults of a prescribed type, at a prescribed time, in a prescribed sequence in order for the postulated MSO combination to occur, then this is considered to be beyond the required design basis for MSOs." The inspectors considered the statements made with respect to limiting consideration of MSOs to four components to be in the context of considering MSOs from a combination of multiple MSO scenarios. The inspectors' view was that the limitation of the number of MSOs to four components was not applicable within a single scenario. The licensee's point of view was that it was acceptable to limit the review of MSOs to a maximum of four components within a single MSO scenario as well as combinations of MSO scenarios. The inspectors were concerned because the limitation of four components was an arbitrary number of components with no technical basis to support the number four. Excluding review of more than four components could result in failing to address adverse component actuation scenarios which could compromise the SSD of a plant during a fire.

*Determination of SSD Path Components:* High pressure core spray (HPCS) was credited for inventory control in the event of a fire in the west portion of containment. Section III.L of Appendix R to 10 CFR Part 50 and Section 5.1 of Regulatory Guide 1.189, Revision 2, identified the reactor coolant make-up function (i.e., inventory control) as one of the functions necessary to meet post-fire safe-shutdown performance goals. Section 3.1 of NEI 00-01, Revision 2, also identified inventory control as a function required for post-fire safe shutdown. As such, the HPCS system was a system required for hot shutdown (sometimes referred to as a "Green Box" system) versus a system characterized as important to safety (i.e., an "Orange Box" system). However, Section 3.2.2 of USAR, Appendix F, identified that cable damage due to a fire in the west portion of containment could cause spurious actuation of HPCS due to impacts upon the HPCS initiation logic. In the event of inadvertent HPCS operation, operators would be directed by procedure to place the HPCS pump control switch in the stop position to prevent reactor vessel overfill. Placing the HPCS pump control switch in the stop position would prevent automatic initiation of the HPCS system in addition to preventing spurious operation. Manual operation of HPCS from the control room would be required to maintain inventory control. The use of manual actions would normally be considered acceptable for a system characterized as important to safe shutdown (i.e., "Orange Box") but not acceptable for a system required for hot shutdown (i.e., "Green Box"). The inspectors considered crediting the placement of the pump control switch in the off position to be operating outside the normal functioning of the system and to not represent a train free of fire damage. Although the inspectors acknowledged that the automatic feature of HPCS may not explicitly be needed to provide inventory control, the inspectors questioned why the automatic feature was not characterized as a required for hot shutdown component (i.e., a "Green Box" component) and protected accordingly. The licensee's position was that only manual operation of the pump was credited for safe shutdown and automatic operation of the pump was unnecessary. The licensee

noted that Section 3.3.1.1.4.1 of NEI 00-01 stated "The automatic ignition logics for the credited post-fire safe shutdown systems are generally not required to support safe shutdown. Typically, each system can be controlled manually by operator actuation in the main control room or emergency control station." While this statement is true, in general, and certainly applicable for important to safe shutdown functions, it does not address the adequate protection for functions of a required for safe shutdown system that do not manually operate the system, but do adversely affect its safe shutdown function.

These interpretation issues are considered an unresolved item (URI) pending further consideration of the above interpretations. (URI 05000461/2014007-01, Interpretation of Requirements for Multiple Spurious Operations)

## .8 Communications

### a. Inspection Scope

The inspectors reviewed, on a sample basis, the adequacy of the communication system to support plant personnel in the performance of alternative safe shutdown functions and fire brigade duties. The inspectors verified that plant telephones, page systems, sound powered phones, and radios were available for use and maintained in working order. The inspectors reviewed the electrical power supplies and cable routing for these systems to verify that either the telephones or the radios would remain functional following a fire.

### b. Findings

No findings of significance were identified.

## .9 Emergency Lighting

### a. Inspection Scope

The inspectors performed a plant walkdown of selected areas in which a sample of operator actions would be performed in the performance of alternative safe shutdown functions. As part of the walkdowns, the inspectors focused on the existence of sufficient emergency lighting for access and egress to areas and for performing necessary equipment operations. The locations and positioning of the emergency lights were observed during the walkdown and during review of manual actions implemented for the selected fire areas.

### b. Findings

No findings of significance were identified.

## .10 Cold Shutdown Repairs

### a. Inspection Scope

The inspectors reviewed the licensee's procedures to determine whether repairs were required to achieve cold shutdown and to verify that dedicated repair procedures, equipment, and material to accomplish those repairs were available onsite. The inspectors also evaluated whether cold shutdown could be achieved within the required

time using the licensee's procedures and repair methods. The inspectors also verified that equipment necessary to perform cold shutdown repairs was available onsite and properly staged.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The inspectors conducted a review to verify that compensatory measures were in place for out-of-service, degraded or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g., detection and suppression systems, and equipment, passive fire barriers, pumps, valves or electrical devices providing safe shutdown functions or capabilities). The inspectors also conducted a review of the adequacy of short term compensatory measures to compensate for a degraded function or feature until appropriate corrective actions were taken.

b. Findings

No findings of significance were identified.

.12 Review and Documentation of Fire Protection Program Changes

a. Inspection Scope

The inspectors reviewed changes to the approved Fire Protection Program to verify that the changes did not constitute an adverse effect on the ability to safely shutdown. The inspectors also reviewed the licensee's design control procedures to ensure that the process included appropriate reviews and controls to assess plant changes for any potential adverse impact on the Fire Protection Program and/or post-fire safe shutdown analysis and procedures.

b. Findings

No findings of significance were identified.

.13 Control of Transient Combustibles and Ignition Sources

a. Inspection Scope

The inspectors reviewed the licensee's procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and in controlling combustible loading within limits established in the fire hazards analysis. A sample of hot work and transient combustible control permits were also reviewed. The inspectors performed plant walkdowns to verify that transient combustibles and ignition sources were being implemented in accordance with the administrative controls.

b. Findings

(1) Failure to Correct Identified Combustibles

Introduction: The inspectors identified a finding of very low safety significance (Green) and associated Non-Cited Violation of license condition 2.F for the failure to remove an identified combustible. Specifically, the failure to remove a piece of wood located directly under a safety-related cable tray for a period in excess of three years was a failure to take corrective action as required by the licensee's Quality Assurance Program.

Description: On July 22, 2010, the licensee identified that a nominal 2 inch × 4 inch × approximately 4 foot long piece of fire retardant wood was underneath a safety-related cable tray. The wood was identified in Fire Zone A-3f, above the Division 1 battery room, and directly underneath and within 1 foot of a safety-related cable tray. The wood was fastened at one end and could not be readily removed. The licensee entered the issue into their corrective action system under Action Request (AR) 01093294, "Piece of Wood ~2"X4"X4' Found Above Div 1 Battery Room," dated July 22, 2010. Work Order 1359515 was initiated to have the wood removed. The work order was initially scheduled to be worked in April 2012. In October 2011 the work order was rescheduled to April 2013. In January 2013, the work order was removed from the schedule and placed in a hold condition.

During the 2011 NRC Triennial Fire Protection Inspection, the inspectors identified that there were small combustible items, including numerous cigarette butts, located in Fire Zone A-3f above the steam tunnel, the Division 1 battery room, and the Division 2 battery room. The licensee entered the issue into the Corrective Action System under AR 01188547, "NRC FP TRI: Housekeeping above AB Battery Rooms," dated March 17, 2011. The inspectors noted that, normally, such violations of requirements would be considered minor due to the relatively small size of materials identified.

On January 14, 2014, the inspectors identified that the wood was still present. In addition, the inspectors identified two rolls of masking tape, one vacuum cleaner nozzle, a plastic lens for a light, cotton glove liner, latex glove, duct tape, electrical tape, a small plastic bag, and numerous cigarette butts. The licensee entered the issue into the corrective action system under AR 01608123, "FP TRI Construction Debris Found Above Divisional Batt Rms," dated January 14, 2014.

The inspectors considered the identified combustible materials to be conditions adverse to fire protection. The inspectors noted that procedure CC-AA-211, "Fire Protection Program," Revision 5, outlined responsibilities for the fire marshal. Section 3.1.17 of procedure CC-AA-211 listed one of the routine duties as "plant tours to monitor the effectiveness of fire protection administrative control and housekeeping practices." In addition, the inspectors noted that procedure Section 4.4.4 of OP-AA-201-009, "Control of Transient Combustible Material," Revision 12, directed personnel to remove all waste (e.g., debris, scraps, used rags, loose packing material, oil spills) resulting from the work activity from the area immediately following completion of the activity, or at the end of each work shift. Although the identified materials above the battery rooms and steam tunnel in Fire Zone A-3f appeared to be mostly materials left over from construction, the inspectors considered the materials to be akin to the waste described in procedure OP-AA-201-009 as the materials did not support a work activity or structure, system, or component.

In response to the inspectors' concerns regarding timeliness of corrective actions, the licensee initiated AR 01617045, "FP TRI – Timeliness for Resolution of Previous NRC Concern," dated February 4, 2014. On February 13, 2014, the inspectors verified that larger items had been removed from the area. However, numerous small items, such as cigarette butts remained in the area. The inspectors ensured that materials within reach were removed at that time. The licensee initiated AR 01621220, "NRC TRI Debris Found Above Divisional Batt Rms (Inspect #2)," dated February 14, 2014, to address the issue.

Analysis: The inspectors determined that the failure to remove an identified combustible was contrary to the licensee's Quality Assurance Program for corrective action and was a performance deficiency. Specifically, the failure to remove a piece of wood located directly under a safety-related cable tray for a period in excess of three years was a failure to take corrective action.

The inspectors reviewed IMC 0612 Appendix E, "Examples of Minor Issues." Example 4.k described a similar performance deficiency. However, the inspectors determined that the identified performance deficiency met the "not minor if" condition in that the combustible material was located directly beneath a safety-related cable tray. As such, equipment important to safety was located within the zone of influence used to determine credible fire scenarios as described in Task 2.3.4 of IMC 0609, Appendix F, "Fire Protection Significance Determination Process." Consequently, the inspectors determined that the performance deficiency was a finding of more than minor safety significance. Therefore this performance deficiency also impacted the Initiating Events Cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions during shutdown, as well as power operations.

In accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Initial Characterization of Findings," Table 2, the inspectors determined the finding affected the Initiating Events cornerstone. The finding degraded fire protection defense-in-depth strategies, and the inspectors determined, using Table 3, that it could be evaluated using Appendix F, "Fire Protection Significance Determination Process." The inspectors screened the issue to Green under Question 1.4.1-B, because the impact of the fire would be largely limited to one train/division of equipment important to safety – i.e., a credited safe shutdown path would be unaffected.

This finding has a cross-cutting aspect in the area of human performance because the licensee did not ensure sufficient resources were available to support nuclear safety. Specifically, the failure to remove the identified combustibles was due to a lack of resources to schedule and accomplish removing the material. This finding was considered to be reflective of current performance because, in January 2013, the work order to remove the wood was removed from the schedule and placed in a hold condition. (H.1)

Enforcement: License condition 2.F requires the licensee to implement and maintain in effect all provisions of the approved Fire Protection Program as described in the Final Safety Analysis Report (FSAR), as amended, and as approved through Safety Evaluation Report NUREG-0853 dated February 1982 and Supplement Nos. 1 thru 8.

The approved Fire Protection Program was described in Section 9.5.1 of the Final Safety Analysis Report, as amended. Section 9.5.1 of the Final Safety Analysis Report, as amended, states, in part, that the Clinton Power Station Unit 1 Fire Protection Evaluation

Report (FPER) constitutes the bases for the Fire Protection Program at Clinton Power Station.

Section 4 of the Clinton Power Station Unit 1 Fire Protection Evaluation Report outlines compliance with Branch Technical Position (BTP) APCS 9.5-1, Appendix A, "Plants Under Construction and Operating Plants." The licensee's response to Position C.8 of BTP APCS 9.5-1 states that the Clinton Power Station Quality Assurance Program establishes measures for corrective action on conditions adverse to fire protection. Exelon Generation Company Quality Assurance Topical Report NO-AA-10 is the Quality Assurance Program for Clinton Power Station. Section 2.2 of Quality Assurance Topical Report NO-AA-10 Chapter 16 states that measures are established to assure that conditions adverse to quality are identified and corrected.

Contrary to the above, from July 22, 2010, through January 14, 2014, the licensee failed to maintain in effect all provisions of the approved Fire Protection Program. Specifically, the licensee failed to establish measures to assure that conditions adverse to quality were corrected in that a piece of wood directly under a safety-related cable tray identified on July 22, 2010, had not been removed by January 14, 2014. The piece of wood was adverse to the Fire Protection Program in that it presented a combustible hazard to the safety-related cable tray located directly above.

This violation is being treated as a Non-Cited Violation (NCV), consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's Corrective Action Program as AR 01608123 and AR 01617045. The licensee removed the piece of wood by the end of the inspection. (NCV 05000461/2014007-02, Failure to Correct Identified Combustibles).

.14 B.5.b Inspection Activities

a. Inspection Scope

The inspectors reviewed the licensee's preparedness to handle large fires or explosions by reviewing selected mitigating strategies. This review ensured that the licensee continued to meet the requirements of their B.5.b related license conditions and 10 CFR 50.54(hh)(2) by determining that:

- Procedures were being maintained and adequate;
- Equipment was properly staged, maintained, and tested;
- Station personnel were knowledgeable and could implement the procedures; and
- Additionally, inspectors reviewed the storage, maintenance, and testing of B.5.b related equipment.

The inspectors reviewed the licensee's B.5.b related license conditions and evaluated selected mitigating strategies to ensure they remain feasible in light of operator training, maintenance/testing of necessary equipment and any plant modifications. In addition, the inspectors reviewed previous inspection reports for commitments made by the licensee to correct deficiencies identified during performance of Temporary Instruction (TI) 2515/171 or subsequent performances of these inspections.

The B.5.b mitigating strategies selected for review during this inspection are listed below. The offsite and onsite communications, notifications/emergency response organization activation, initial operational response actions and damage assessment activities identified in Table A.3 1 of Nuclear Energy Institute (NEI) 06-12, "B.5.b Phase II and Phase III Submittal Guidance," Revision 2 are evaluated each time due to the mitigation strategies' scenario selected.

<b>NEI 06-12, Revision 2, Section</b>	<b>Licensee Strategy (Table)</b>
2.3.2	SFP [Spent Fuel Pool] Spray Capability (A.2- 3)
3.4.2	DC [Direct Current] Power Supplies to Allow Depressurization of RPV [Reactor Pressure Vessel] & Injection with Portable Pump (A.5-2)
3.4.10	SFP Spray (A.5-10)

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA2 Identification and Resolution of Problems (71152)

a. Inspection Scope

The inspectors reviewed the licensee's Corrective Action Program procedures and samples of corrective action documents to verify that the licensee was identifying issues related to the Fire Protection Program at an appropriate threshold and entering them in the Corrective Action Program. The inspectors reviewed selected samples of condition reports, design packages, and fire protection system non-conformance documents.

b. Findings

No findings of significance were identified.

4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153)

.1 (Closed) Licensee Event Report 05000461/2013-005-00, "Safe Shutdown Analysis Non-Compliance for Diesel Generator Room Ventilation"

a. Inspection Scope

On September 20, 2013, the licensee identified a non-compliance with License Condition 2.F due to the inability to achieve safe shutdown in the event of a fire in Fire Zones CB-1e, CB-1f, CB-2, and CB-4. Circuit failure analysis and post-fire recovery guidance for the EDG room ventilation system were found by the licensee to be technically incorrect, rendering the EDG room ventilation systems unable to be restored for certain fire scenarios.



Specifically, fire-induced circuit failures that could inadvertently actuate the EDG carbon dioxide (CO<sub>2</sub>) fire suppression system would provide a maintained-trip signal to the associated EDG room ventilation system. The safe shutdown analysis, at the time that this condition was discovered, directed operators to restart the EDG room ventilation system fans from the main control room for such scenarios. However, this action alone would not bypass the maintained-trip signal to the fans generated by the CO<sub>2</sub> system. Consequently, the affected EDG unit(s) could eventually fail due to high room temperatures. The licensee determined the cause of this event to be an historical error that occurred in 1998. The inspectors reviewed the corrective actions for this issue and did not identify any concerns. This Licensee Event Report (LER) is closed. This event follow-up review constituted one sample as defined in IP 71153.

b. Findings

The enforcement aspects of this finding are discussed in Section 4OA7.

4OA6 Management Meetings

.1 Exit Meeting Summary

On February 14, 2014, the inspectors presented the inspection results to Mr. B. K. Taber, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

- On September 20, 2013, the licensee identified an inability to achieve safe shutdown in the event of a fire because previous circuit failure analysis and post-fire recovery guidance for the EDG room ventilation system were found to be technically incorrect. The analysis also determined that the affected EDG units may eventually fail due to high room temperatures. The inability to achieve safe shutdown was contrary to License Condition 2.F and the Fire Protection Program As described in the Final Safety Analysis Report as amended. The licensee performed an assessment to assess the safety significance of the issue, which showed that the issue was of very low safety significance (i.e., Green). A Senior Reactor Analyst reviewed the licensee's assessment and concurred with the determination that the issue was of very low safety significance. This issue was entered into the licensee's Corrective Action Program as AR 1561495, "Potential App. R Non-Compliance Found during the FP FASA," dated September 20, 2013. As part of the licensee's corrective actions, USAR Appendix F was planned to be revised to reflect the circuit analysis and procedure 1893.04, "Fire Fighting," Revision 16b, was revised to provide direction to remove fuses, to allow EDG ventilation fans to be started.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee

B. Taber, Site Vice-President  
D. Avery, Regulatory Assurance  
R. Bair, Chemistry Manager  
P. Bulpit, Engineering  
J. Cunningham, Acting Regulatory Assurance Manager  
S. Deal, Operations – Fire Protection  
R. Frantz, Regulatory Assurance  
M. Heger, Engineering  
N. Hightower, Radiation Protection Manager  
D. Kemper, Operations Director  
J. Smith, Site Engineering Director  
J. Stovall, Maintenance Director  
B. Sherman, Acting Engineering Programs Manager  
D. Tapperson, Engineering  
J. Ufert, Operations  
R. Zacholski, Nuclear Oversight

#### Nuclear Regulatory Commission

D. Lords, Acting Senior Resident Inspector

#### Illinois Emergency Management Agency

S. Mischke, Resident Inspector

### **LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

#### Opened

05000461/2014007-01	URI	Interpretation of Requirements for Multiple Spurious Operations (Section 1R05.6(b)(1))
05000461/2014007-02	NCV	Failure to Correct Identified Combustibles (Section 1R05.12(b)(1))

#### Closed

05000461/2014007-02	NCV	Failure to Correct Identified Combustibles (Section 1R05.12(b)(1))
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## LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

### CALCULATIONS

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
CPS 1893.04	Fire Loading Calculation pages 46, 47	Revision 16a
EC 383786	MSO Scenario 5a – Additional Components Load Onto Credited EDG	Revision 1
EC 385262	MSO Scenario 5c – Emergency Service Water Pump Operation at Shutoff Head	Revision 0
EC 385855	Multiple Spurious Operations Master Technical Evaluation	Revision 1
EC 386210	Open Breaker and Defeat OOS Alarm for 1SX003A and 1SX004A – MSO 5c – Spurious Ops of SX 1A Strainer MOVs May Create Flow Diversion	Revision 0
EC 389771	MSO 2-new-9 – RCIC Start with Steam Line Closed Tripping RCIC	Revision 0
EC 390556	Add Shorting Switch to Prevent Spurious Closing of 1E51F068 - MSO 2-NEW-9 - RCIC Operating with Steam Line Closed Tripping RCIC	Revision 0
H705.A04	Automatic Sprinkler: Control Bldg. Cable Spreading Rm. Div 1	January 11, 2013
H710.A03	Automatic Sprinkler: Control Bldg. System No. 35 Margin Discussion	January 11, 2013
IP-M-0177-AB	Fire Loads in CPS Fire Zones Auxiliary Building	Revision 0
IP-M-0532	Appendix R Safe Shutdown Compliance Assessment	Revision 2
MAD Calc 85-73	Hydraulic Calculations for Sprinkler Systems	Revision 0

### CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED DURING INSPECTION

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
00594647	IN 2007-07 Potential Failure of Rods to Insert Due to Fire	February 22, 2007
00965768	Expired Memorandum of Understanding	September 16, 2009
01196176-02	Replace B.5.b Portable Diesel Fire Pump Oil	June 24, 2011
01198568	Diesel Tanks Contain “Bio-Diesel”	April 6, 2011
01380731-03	Extreme Damage Event Response	August 24, 2012

**CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED DURING INSPECTION**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
	Enhancement	
01380731	Extreme Damage Event Response	June 22, 2012
	Enhancement	
01531358	LL 4303.01 Forms from 2Q13 IMD EDMG Training	July 01, 2013
01561495-11	Apparent Cause Evaluation for Potential Non-compliance with the Safe Shutdown Analysis for a Fire Outside the DG Rooms	September 20, 2013
01608123	FP TRI Construction Debris Found Above Divisional Batt Rms	January 14, 2014
01608424	FP TRI-Fluorescent Lights in Aux Elec Room Need Repaired	January 15, 2014
01608436	FP TRI – Staining from Roof Leaks Need Cleaned Up	January 15, 2014
01608552	FP TRI- ID Fire Blanket of CTMT Penetration 1C1E 1EE1GE	January 15, 2014
01608645	FP TRI-ID'd Reinforced Wire Protruding from B.5.b Hose	January 15, 2014
01608649	FP TRI ID'd B.5.b Hose Trailer Storage Door Malfunctioning	January 15, 2014
01609171	NRC TRI Construction Debris Found in Div 1 Cable Spread Room	January 16, 2014
01610440	FP TRI Proc Enhancements Identified by NRC Fire Protection	January 21, 2014
01610447	FP TRI Enhancement Identified by NRC Fire Protection	January 21, 2014
01611621	NRC TRI Tape Located on Fire Protection Piping in CB-5C	January 23, 2014
01613429	FP TRI: Legacy Error Found in 1FP155A, 1FP42SA Documentation	January 28, 2014
01614426	4.0 Critique for Crew C Fire Drill (MCR Portion)	January 29, 2014
01614899	FP TRI Recommended Enhancements to CPS 3822.04C003	January 30, 2014
01614999	FP TRI: Fire Barrier Improvement Opportunity	January 30, 2014
01617045	FP TRI – Timeliness for Resolution of Previous NRC Concern	February 4, 2014
01617093	FP TRI: Transcription Error in Internal Flooding Calculation	February 4, 2014
01619349	FP TRI Evaluate Procedure Enhancements to CPS 44304.01	February 10, 2014
01619361	FP TRI Evaluate Enhancement to CPS 4303.01P011	February 10, 2014
01619366	FP TRI Evaluate Changes to CPS	February 10, 2014

**CORRECTIVE ACTION PROGRAM DOCUMENTS ISSUED DURING INSPECTION**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
	4303.01P018	
01620373	FP TRI USAR App E Figures Cable Tray Dwg 10 Needs Updated	February 12, 2014
01620811	FP TRI – Unit 2 Housekeeping Impact Needs Addressed	February 13, 2014
01621220	NRC TRI Debris Found Above Divisional Batt RMS (Inspect No. 2)	February 14, 2014

**CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
00341729	Piece of Wood ~2"x4"x4' Found Above Div 1 Battery Room	July 22, 2010
00361913	NRC FP TRI: Housekeeping Above AB Battery Rooms	March 17, 2011
00711984	9071.04C001 Flow Path 3 Data OOS	December 14, 2007
00766282	FP-FSA Fire Protection Loop Flow Calculation not per USAR	April 4, 2008
01439805	1FP43J Unexpected Alarm During 9337.81C003	November 14, 2012
01487811	0CO03T DG CO <sub>2</sub> Storage Tank Compressor Excessive Cycling	March 14, 2013
01550943	PI&R: NRC Inspector Comments from Observed Fire Drill	August 27, 2013
01588065	1DR1-630 Stationary Door Will Not Stay Shut	November 20, 2013
01604098	EOID: 0CO02T DG CO <sub>2</sub> Tank Level OOS Low	January 6, 2014
01604435	0CO01T; Local Level Indication Low on all Three CO <sub>2</sub> Tanks	January 6, 2014
01616560	FP TRI Unannounced Fire Drill Critique Item	February 3, 2014

**DRAWINGS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
1893.04M100	Clinton Pre-Fire Plan Layout – 707' Auxiliary Building General Access Area – Fire Zone/Area A-1a	Revision 5
1893.04M107	Clinton Pre-Fire Plan Layout – 707' Auxiliary Building South Hallway – Fire Zone/Area A-6	Revision 1
ASP-1SWP-2	Fire Protection System Aux Elec. Rm. – Pre Action Sys	Revision 11
ASP-1SWP-3	Fire Protection System Cable Spreading	Revision 11

**DRAWINGS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
ASP-1SWP-4	RM's – Wet Pipe Sys Fire Protection System Control Building – Riser Area EL 781'-0"	Revision 6
E27-1003-01A-FP	Fire Detection System Containment Building EL 778'-0" Area 1	Revision A
E30-1003-05A-FP	Fire Detection System Control Building EL 762'-0" (781'-0") Area 5	Revision A
Figure 10	General arrangement Control Building EL. 762'-0"	Revision 12
Figure 11	General arrangement Control Building EL. 781'-0"	Revision 15
Figure 12	General arrangement Control Building EL. 800'-0"	Revision 12
Figure 13	General arrangement Control Building EL. 825'-0"	Revision 7
Figure 9	General arrangement Control and Diesel generator Building EL. 737'-0"	Revision 6
M01-1600 Sheet 12	Environmental Zone Map Control and Diesel Gen. Bldg. Basement Floor Plan EL. 702'-0" and 712'-0"	Revision A
M01-1600 Sheet 6	Environmental Zone Map Auxiliary, Fuel and Containment Basement Floor Plan EL. 707'-6" and 712'-0"	Revision A
M05-1035 Sheet 1	P&ID Diesel Gen Aux Sys (DG) (Starting Air Exhaust and Combustion Sys)	Revision AE
M05-1035 Sheet 2	P&ID Diesel Gen Aux Sys (DG) (Starting Air Exhaust and Combustion Sys)	Revision AB
M05-1035 Sheet 3	P&ID Diesel Gen Aux Sys (DG) (Starting Air Exhaust and Combustion Sys)	Revision AE
M05-1039	P&ID Fire Protection (FP) Control Building	Revision AD
M05-1052	P&ID Shutdown Service Water (SX)	Revision AY
M05-1075	P&ID Residual Heat Removal (RH)	Revision AX
M06-1039	P&ID Fire Protection (FP) Pump House	Revision AC

**DRILL RECORDS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
2012-01U	Fire Drill Record	February 15, 2012
2012-02	Fire Drill Record	February 29, 2012
2012-03U	Fire Drill Record	March 5, 2012
2012-04	Fire Drill Record	March 8, 2012
2012-05	Fire Drill Record	March 14, 2012
2012-06	Fire Drill Record	March 29, 2012
2012-07	Fire Drill Record	March 30, 2012
2012-08	Fire Drill Record	April 26, 2012

**DRILL RECORDS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
2012-09	Fire Drill Record	May 9, 2012
2012-10	Fire Drill Record	May 15, 2012
2012-11U	Fire Drill Record	June 1, 2012
2012-12	Fire Drill Record	June 6, 2012
2012-13	Fire Drill Record	June 12, 2012
2012-14	Fire Drill Record	June 13, 2012
2012-15U	Fire Drill Record	July 11, 2012
2012-16U	Fire Drill Record	July 23, 2012
2012-17U	Fire Drill Record	July 30, 2012
2012-18U	Fire Drill Record	August 7, 2012
2012-19UX	Fire Drill Record	August 23, 2012
2012-20	Fire Drill Record	September 20, 2012
2012-21U	Fire Drill Record	October 4, 2012
2012-22C	Fire Drill Record	November 9, 2012
2012-22E	Fire Drill Record	October 17, 2012
2012-24	Fire Drill Record	November 9, 2012
2012-25	Fire Drill Record	November 12, 2012
2012-26	Fire Drill Record	December 13, 2012
2012-27	Fire Drill Record	December 22, 2012
2013-01UB	Fire Drill Record	February 7, 2013
2013-02	Fire Drill Record	February 15, 2013
2013-03	Fire Drill Record	March 1, 2013
2013-04	Fire Drill Record	March 4, 2013
2013-05	Fire Drill Record	March 13, 2013
2013-06	Fire Drill Record	March 24, 2013
2013-07	Fire Drill Record	April 4, 2013
2013-08	Fire Drill Record	April 16, 2013
2013-09	Fire Drill Record	June 13, 2013
2013-10	Fire Drill Record	June 18, 2013
2013-11	Fire Drill Record	June 19, 2013
2013-12	Fire Drill Record	June 21, 2013
2013-13	Fire Drill Record	July 17, 2013
2013-14	Fire Drill Record	August 1, 2013
2013-15	Fire Drill Record	August 8, 2013
2013-16	Fire Drill Record	August 12, 2013
2013-17	Fire Drill Record	August 26, 2013
2013-18	Fire Drill Record	September 16, 2013
2013-19	Fire Drill Record	September 21, 2013
2013-20	Fire Drill Record	November 13, 2013
2013-21	Fire Drill Record	November 27, 2013
2013-22	Fire Drill Record	December 5, 2013

**DRILL RECORDS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
2013-23	Fire Drill Record	December 18, 2013
2013-24	Fire Drill Record	December 20, 2013
2013-25	Fire Drill Record	December 27, 2013

**PROCEDURES**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
3822.04C003	Quarterly B.5.b Equipment Checklist	Revision 6a
4003.01	Remote Shutdown	Revision 17a
4003.01C001	RSP – Pressure Control	Revision 0a
4003.01C002	RSP – RCIC Operation	Revision 4
4003.01C002	RSP – RCIC Operation	Revision 5a
4003.01C004	RSP – Diesel Generator 1A Operation	Revision 1b
4003.01C012	RSP – DIV 2 Suppression Pool Cooling Operation	Revision 1a
4303.01	Extensive Damage Mitigation Guide	Revision 6
4304.01	Flooding	Revision 6
9069.02	Shutdown Service Water Valve Operability Test	Revision 35
AD-AA-101-1002	Writer's Guide for Procedures and T&RM	Revision 16
CA-AA-211	Fire Protection Program	Revision 5
CPS 1019.05	Transient Equipment/Materials	Revision 21
CPS 1893.04	Fire Fighting	Revision 16d
CPS 1893.04	Fire Fighting	Revision 16b
CPS 1893.04M352	Fire Zone CB-4, 781 Control: Div 1 Cable Spreading room Pre-fire Plan	Revision 5a
CPS 1893.04M354	Fire Zone CB-5c, 781 Control: Div 1 and 2 Cable Risers Pre-fire Plan	Revision 5
CPS 9601.06	Fire Door and Secondary Containment Doors Inspections	Revision 29a
EP-AA-112-100-F-06	ERO Notification or Augmentation	Revision Q
HU-AA-104-101	Procedure Use and Adherence	Revision 4
LOA-SY-003	Extreme Damage Mitigation Guideline	Revision 9
ME-06.00	Guidelines for Determining Fire Loads and Preparing Fire Load Calculation	Revision 9a
OB-BY-201-009	Control of Transient Combustible Materials	Revision 12
OP-AA-201-003	Fire Drill Performance	Revision 12
OP-AA-201-010-1001	B.5.B Mitigating Strategies Equipment Expectations	Revision 2

**VENDOR DOCUMENTS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
LIX-630	Blitzfire Monitor Series Manual	Revision 7
9972708	B.5.b Pump Fuel Oil Sample Results	June 16, 2011



**VENDOR DOCUMENTS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
IR-S121 INFRA RED Manual	S121 Solar Blind Detector	March 4, 1986

**WORK ORDER DOCUMENTS**

<b><u>Number</u></b>	<b><u>Description or Title</u></b>	<b><u>Date or Revision</u></b>
01367888 01	9601.01 C003 Accessible Group 4 Pene Fire Seal Insp't	March 9, 2012
01457050 01	9337.81C004 Smoke Detectors CF (CB 719, 737, 751, 781, 825	June 19, 2012
01543426 01	9601.01 C003 Inaccessible Pene Fire Seal Insp't	October 17, 2013
01647666 01	9601.06R20 VI Fire Door Hardware Inspection	November 22, 2013

### **List of Acronyms Used**

ADAMS	Agencywide Document Access Management System
AR	Action Request
CFR	Code of Federal Regulations
CO <sub>2</sub>	Carbon Dioxide
DC	Direct Current
EDG	Emergency Diesel Generator
HP	Horsepower
HPCS	High Pressure Core Spray
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
LOOP	Loss of Off-site Power
MSO	Multiple Spurious Operation
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records
RPV	Reactor Pressure Vessel
SDP	Significance Determination Process
SFP	Spent Fuel Pool
SSC	Systems, Structures, and Components
SSD	Safe Shutdown
USAR	Updated Safety Analysis Report
URI	Unresolved Item
V	Volts

M. Pacilio

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Sincerely,

/RA/

Robert C. Daley, Chief  
Engineering Branch 3  
Division of Reactor Safety

Docket Nos. 50-461  
License Nos. NPF-62

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