UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE RD. SUITE 210
LISLE, IL 60532-4352

April 23, 2015

Mr. Bryan C. Hanson
Senior VP, Exelon Generation Company, LLC
President and CNO, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION, EVALUATIONS OF CHANGES, TESTS, AND EXPERIMENTS AND PERMANENT PLANT MODIFICATIONS BASELINE INSPECTION REPORT 05000461/2015008

Dear Mr. Hanson:

On March 20, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications inspection at your Clinton Power Station. The enclosed inspection report documents the inspection results which were discussed on March 20, 2015, with Mr. Mark Newcomer, 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.

One NRC-identified finding of very-low safety significance (Green) was identified during this inspection. This finding was determined to involve a violation of NRC requirements. However, because of the 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.

If you contest the subject or severity of the 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 copies to the Regional Administrator, Region III; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at 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 Clinton Power Station.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is 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 No. 50-461
License No. NPF-62

Enclosure:
Inspection Report 05000461/2015008
w/Attachment: Supplemental Information

cc w/encl: Distribution via LISTSERV®

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-461
License No:	NPF-62
Report No:	05000461/2015008
Licensee:	Exelon Generation Company, LLC
Facility:	Clinton Power Station
Location:	Clinton, IL
Dates:	March 2-20, 2015
Inspectors:	George M. Hausman, Senior Engineering Inspector (Lead) James E. Neurauter, Senior Engineering Inspector Lionel Rodriguez, Engineering Inspector
Approved by:	Robert C. Daley, Chief Engineering Branch 3 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

Inspection Report 05000461/2015008; 03/02/2015 - 03/20/2015; Clinton Power Station; Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications.

This report covers a 2-week announced baseline inspection on evaluations of changes, tests, and experiments, and permanent plant modifications. The inspection was conducted by Region III based engineering inspectors. One finding of very-low safety significance was identified by the inspectors. The finding was considered a Non-Cited Violation (NCV) of U.S. Nuclear Regulatory Commission (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 5, dated February 2014.

NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Severity Level IV-Green. The inspectors identified a finding of very-low safety significance, and an associated Non-Cited Violation of Title 10, *Code of Federal Regulations* Part 50, Section 59, “Changes, Tests and Experiments,” (effective January 1, 1997) for a procedure change dated May 2, 1997, where the licensee allowed safety-related switchgear to operate for a limited period of time during plant operation in equipment configurations that were seismically unanalyzed. Specifically, for Safety Evaluation Log 97-060, “CPS [Clinton Power Station] Procedure No. 1014.11,” Revision 0, the licensee failed to include a written safety evaluation which provided the bases that concluded for all switchgear configurations that a seismically unanalyzed condition does not involve an unreviewed safety question, and the possibility for a malfunction of a different type than any evaluated previously in the Safety Analysis Report may be created. The licensee entered the issue into their Corrective Action Program as Action Request 02471583, “NRC Mod 50.59 Inspection Safety Eval 97-060 for CPS 1014.11,” dated March 20, 2015.

  The performance deficiency was determined to be more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of protection against external factors and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, switchgear in a seismically unanalyzed condition when relied upon to perform a safety function did not ensure the availability, reliability, or capability of the associated Mitigating Systems to respond to an initiating event such as an earthquake. The inspectors determined that the underlying technical issue was of very-low safety significance (Green) using a detailed risk evaluation. The inspectors did not identify a cross-cutting aspect associated with the finding because the finding was not representative of current performance. (Section 1R17.1b)

Licensee-Identified Violations

No violations were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R17 Evaluations of Changes, Tests, and Experiments and Permanent Plant Modifications (71111.17T)

.1 Evaluation of Changes, Tests, and Experiments

a. Inspection Scope

The inspectors reviewed six evaluations performed pursuant to Title 10, *Code of Federal Regulations* (CFR), Part 50, Section 59, to determine if the evaluations were adequate, and that prior U.S. Nuclear Regulatory Commission (NRC) approval was obtained as appropriate. The inspectors also reviewed 16 screenings, where licensee personnel had determined that a 10 CFR 50.59 evaluation was not necessary. The inspectors reviewed these documents to determine if:

- the changes, tests, and experiments performed were evaluated in accordance with 10 CFR 50.59 and that sufficient documentation existed to confirm that a license amendment was not required;
- the safety issue requiring the change, tests or experiment was resolved;
- the licensee conclusions for evaluations of changes, tests, and experiments were correct and consistent with 10 CFR 50.59; and
- the design and licensing basis documentation was updated to reflect the change.

The inspectors used, in part, Nuclear Energy Institute (NEI) 96-07, "Guidelines for 10 CFR 50.59 Implementation," Revision 1, to determine acceptability of the completed evaluations, and screenings. The NEI document was endorsed by the NRC in Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," dated November 2000. The inspectors also consulted Part 9900 of the NRC Inspection Manual, "10 CFR Guidance for 10 CFR 50.59, Changes, Tests, and Experiments."

This inspection constituted 6 samples of evaluations, and 16 samples of screenings and/or applicability determinations as defined in Inspection Procedure (IP) 71111.17-04.

b. Findings

Inadequate 50.59 Evaluation for Switchgear in Seismically Unanalyzed Conditions

Introduction: The inspectors identified a finding of very-low safety significance (Green), and an associated Severity Level IV, Non-Cited Violation (NCV) of 10 CFR 50.59, "Changes, Tests and Experiments," (effective January 1, 1997) for a procedure change dated May 2, 1997, where the licensee allowed safety-related switchgear to operate for a limited period of time during plant operation in equipment configurations that were seismically unanalyzed. Specifically, for Safety Evaluation Log 97-060, "CPS [Clinton Power Station] Procedure No. 1014.11", Revision 0, the licensee failed to include a written safety evaluation which provided the bases that concluded for all switchgear configurations that a seismically unanalyzed condition does not involve an unreviewed safety question, and the possibility for a malfunction of a different type than any evaluated previously in the safety analysis report may be created.

Description: On February 27, 1997, the licensee generated Condition Report (CR) 1-97-02-273, “ABB [ASEA Brown Boveri] and General Electric Breakers Not Seismically Qualified in Racked Out Position.” The inspectors noted that the CR and associated Root Cause Report acknowledged that only certain breaker positions had been tested and/or analyzed to seismically qualify the safety-related Division 1, 2, and 3 switchgear.

The CPS Updated Safety Analysis Report (USAR), Section 3.10, “Seismic Qualification of Seismic Category I Instrumentation and Electrical Equipment,” stated that the requirements of the Institute of Electrical and Electronics Engineers (IEEE) 344, “IEEE Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations” and Regulatory Guide (RG) 1.100, “Seismic Qualification of Electric and Mechanical Equipment for Nuclear Power Plants,” were met for the equipment identified in the USAR Section 3.10. Section 3.10, further stated that per Section 6.1.1, of IEEE 344-75, electrical equipment must be tested on a shake table with mounting and configuration similar to actual service, unless adequate justification can be made to extend the qualification to an untested orientation or configuration.

On March 20, 1997, the licensee completed “Risk Evaluation for Seismically Indeterminate Switchgear Configurations,” which was included as an attachment to the licensee’s letter Y-106400 to address the switchgear’s seismically unanalyzed conditions. The purpose of the evaluation was to address the risk significance of the seismically unanalyzed conditions. The evaluation concluded there were no adverse impacts on the intended safety function of the affected switchgear, and other adjacent cubicles’ in-service devices (i.e., relays, instruments, etc.); provided the duration of the seismically unanalyzed conditions only existed for a limited period of time. On April 22, 1997, the licensee applied the results of the evaluation and updated the safety analysis report per USAR Change 7-209, “Section 3.10, Qualification of Seismic Category I Instrumentation and Electrical Equipment.”

On May 2, 1997, the licensee issued Procedure CPS 1014.11, “6900/4160/480V Switchgear/Circuit Breaker Operability Program,” which allowed switchgear in a seismically unanalyzed condition to be considered operable for up to 48 hours as long as administrative controls were implemented. After the 48 hours, the switchgear was then declared inoperable. The licensee’s associated Safety Evaluation Log 97-060, “CPS Procedure No. 1014.11”, Revision 0, concluded that USAR Change 7-209 did not require prior NRC approval.

The inspectors assessed the above changes with respect to the current NEI 96-07, “Guidelines for 10 CFR 50.59 Implementation,” Revision 1. The guidance in NEI 96-07 was endorsed by the NRC in RG 1.187, “Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments.” The inspectors reviewed NEI 96-07, Section 4.3.2, “Does the Activity Result in More Than a Minimal Increase in the Likelihood of Occurrence of a Malfunction of an structure, system, or component (SSC) Important to Safety?,” which stated that changes in design requirements for earthquakes, tornadoes, and other natural phenomena should be treated as potentially affecting the likelihood of malfunction. The inspectors concluded applying Section 4.3.2, Example 3, that allowing the switchgear to be in a seismically unanalyzed condition required prior NRC approval.

Specifically, when in a seismically unanalyzed configuration, the licensee did not verify the design bases requirement that the switchgear will withstand, without functional impairment, the effects of the safe shutdown earthquake (SSE). Therefore, the seismically unanalyzed configuration resulted in more than a minimal increase in the likelihood of occurrence of a malfunction of a SSC important to safety.

Based on the inspectors' review of the licensee's Safety Evaluation Log 97-060, the inspectors determined that the licensee incorrectly concluded that switchgear in a seismically unanalyzed condition did not increase the possibility for a malfunction of equipment important to safety evaluated previously in the USAR. The licensee's USAR Section 3.10 stated that all Class 1E electrical equipment and instrumentation were designed to withstand, without functional impairment, the effects of the SSE. However, for switchgear in a seismically unanalyzed condition, the licensee did not verify that the equipment would function during and following a postulated SSE event. Therefore, the inspectors concluded a seismically unanalyzed configuration increased the possibility of a switchgear malfunction and was an unreviewed safety question that required prior NRC approval.

The licensee entered the inspectors' concern into their Corrective Actions Program (CAP) as Action Request (AR) 02471583, "NRC Mod/50.59 Inspection: Safety Evaluation 97-060 for CPS 1014.11," dated March 20, 2015. The CAP document contained the following recommended corrective actions to address the inspectors' concerns: (1) revise procedure CPS 1014.11 to remove usage of the 48 hour inoperability deferment; (2) perform a past operability review for exceeding technical specification (TS) action completion times; and (3) review USAR Section 3.10 for possible changes required to language on breakers in seismically unanalyzed configurations. In addition, AR 02471583 documented creation of Standing Order 2015-02, "Actions for Safety Related Breaker Racking Operations," to eliminate entering the 48 hour seismic clock prior to revising Procedure 1014.11.

Analysis: The inspectors determined that for Safety Evaluation Log 97-060, "CPS Procedure No. 1014.11", Revision 0, the licensee failed to include a written safety evaluation which provided the bases that concluded for all switchgear configurations that a seismically unanalyzed condition does not involve an unreviewed safety question, and the possibility for a malfunction of a different type than any evaluated previously in the Safety Analysis Report may be created was contrary to 10 CFR 50.59(d)(1), and was a performance deficiency. Specifically, for switchgear in a seismically unanalyzed condition, the licensee did not verify that the equipment will function during and following a postulated SSE event. Therefore, an unanalyzed configuration created a possibility for a switchgear malfunction of a different type than any previously evaluated during a seismic event, and involved an unreviewed safety question.

The inspectors determined the performance deficiency was more than minor because the finding was associated with the Mitigating Systems cornerstone attribute of protection against external factors, and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, switchgear in a seismically unanalyzed condition when relied upon to perform a safety function did not ensure the availability, reliability, or capability of the associated mitigating systems to respond to an initiating event such as an earthquake.

Violations of 10 CFR 50.59 are dispositioned using the traditional enforcement process instead of the Significance Determination Process (SDP) because they are considered to be violations that potentially impede or impact the regulatory process. This violation is associated with a finding that has been evaluated by the SDP, and communicated with an SDP color reflective of the safety impact of the deficient licensee performance. The SDP, however, does not specifically consider the regulatory process impact. Thus, although related to a common regulatory concern, it is necessary to address the violation and finding using different processes to correctly reflect both the regulatory importance of the violation, and the safety significance of the associated finding.

In this case, the inspectors determined the finding could be evaluated using the SDP in accordance with Inspection Manual Chapter 0609, "SDP." Using Attachment 0609.04, "Initial Characterization of Findings," Table 2, the inspectors determined that the finding affected the Mitigating Systems cornerstone. As a result, the inspectors evaluated the finding using Appendix A, "The SDP for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions" and Exhibit 4, "External Events Screening Questions." The inspectors determined the finding required a detailed risk evaluation because the loss of a switchgear during a seismic event would degrade one or more trains of a system that supports a risk-significant system or function. Specifically, the loss of a Division 1, 2 or 3 switchgear could degrade one train of the emergency power system used to shut the reactor down or maintain it in a safe shutdown condition following a seismic event.

The Senior Reactor Analysts (SRAs) performed a detailed risk evaluation of this issue. The change in risk for this performance deficiency was assumed to occur following a seismic event with breakers in the divisional switchgear being in an unqualified configuration not allowed by TS. According to the Operations' logs, there was one instance in the past 3-years when Division 1 was in a seismically unqualified configuration for approximately 10.8 hours.

The SRAs assumed that a seismically-induced loss of offsite power (LOOP) event would suffice for the initiating event for this issue since the frequencies of seismic LOOP events are based on the lowest fragility SSC (e.g., ceramic insulators). According to information from the NRC's "Risk Assessment Standardization Project Tool Box" website, the frequency of a seismic LOOP event at Clinton is 5.81E-05/year (based on United States Geological Survey 2008 Hazard Vectors). For the 10.8 hour exposure time, this frequency is about 7.2E-08/year. Based on this, the SRAs concluded that the delta-core damage frequency of this performance deficiency is very-low (Green).

In accordance with Section 6.1.d, of the NRC Enforcement Policy this violation is categorized as Severity Level IV, because the resulting changes were evaluated by the SDP as having very-low safety significance (i.e., green finding).

The inspectors did not identify a cross-cutting aspect associated with the finding because the finding was not representative of current performance.

<u>Enforcement</u>: Title 10 CFR, Part 50, Section 59, "Changes, Tests, and Experiments," Subsection (b)(1) (effective January 1, 1997) requires, in part, the licensee to maintain records of changes in procedures to the extent that these changes constitute changes in procedures as described in the Safety Analysis Report. These records must include a written safety evaluation which provides the bases for the determination that the change does not involve an unreviewed safety question.

Title 10 CFR, Part 50, Section 59,"Changes. Tests, and Experiments," Subsection (a)(2) (effective January 1, 1997) states, in part, a proposed change shall be deemed to involve an unreviewed safety question if a possibility for a malfunction of a different type than any evaluated previously in the Safety Analysis Report may be created.

Contrary to the above, from May 2, 1997, to March 20, 2015, for Safety Evaluation Log 97-060, "CPS Procedure No. 1014.11", Revision 0, the licensee failed to include a written safety evaluation which provided the bases that concluded for all switchgear configurations that a seismically unanalyzed condition does not involve an unreviewed safety question, and the possibility for a malfunction of a different type than any evaluated previously in the Safety Analysis Report may be created.

This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy because it was a Severity Level IV violation and was entered into the licensee's CAP as AR 02471583, "NRC Mod 50.59 Inspection Safety Eval 97-060 for CPS 1014.11," dated March 20, 2015. The licensee's immediate corrective action created Standing Order Log Number 2015-02, "Actions for Safety Related Breaker Racking Operations," to eliminate entering the 48 hour seismic clock until CPS Procedure 1014.11, "6900/4160/480V Switchgear/Circuit Breaker Operability Program," is revised. (NCV 05000461/2015008-01, Inadequate 50.59 Evaluation for Switchgear in Seismically Unanalyzed Conditions)

.2 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed nine permanent plant modifications that had been installed in the plant during the last 3 years. The modifications were selected based upon risk-significance, safety significance, and complexity. The inspectors reviewed the modifications selected to determine if:

- the supporting design and licensing basis documentation was updated;
- the changes were in accordance with the specified design requirements;
- the procedures and training plans affected by the modification have been adequately updated;
- the test documentation as required by the applicable test programs has been updated; and
- post-modification testing adequately verified system operability and/or functionality.

The inspectors also used applicable industry standards to evaluate acceptability of the modifications. The list of modifications and other documents reviewed by the inspectors is included as an Attachment to this report.

This inspection constituted nine permanent plant modification samples as defined in IP 71111.17-04.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

.1 Routine Review of Condition Reports

a. Inspection Scope

The inspectors reviewed several corrective action process documents that identified or were related to 10 CFR 50.59 evaluations and permanent plant modifications. The inspectors reviewed these documents to evaluate the effectiveness of corrective actions related to permanent plant modifications and evaluations of changes, tests, and experiments. In addition, corrective action documents written on issues identified during the inspection were reviewed to verify adequate problem identification, and incorporation of the problems into the corrective action system. The specific corrective action documents that were sampled and reviewed by the inspectors are listed in the attachment to this report.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On March 20, 2015, the inspectors presented the inspection results to Mr. Mark Newcomer and other members of the licensee staff. The licensee personnel acknowledged the inspection results presented and did not identify any proprietary content. The inspectors confirmed that all proprietary material reviewed during the inspection was returned to the licensee staff.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

D. Avery, Regulatory Assurance
P. Bulpitt, Manager, Design Engineering
J. Cunningham, Acting Regulatory Assurance Manager
J. Grim, Engineering
D. Kemper, Operations Director
M. Kimmich, Engineering Support
S. Kowalski, Senior Manager Design Engineering
S. Lakebrink, Sr., Engineering
M. Newcomer, Site Vice-President
J. Peterson, Regulatory Assurance
C. Propst, Work Management Director
D. Shelton, Operations Services Manager
D. Smith, Engineering
J. Smith, Site Engineering Director
T. Stoner, Plant Manager
R. Zacholski, Nuclear Oversight Manager

U.S. Nuclear Regulatory Commission

R. Daley, Chief, Engineering Branch 3, DRS
C. Hunt, Resident Inspector (Acting)
W. Schaup, Senior Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000346/2015008-01	NCV	Inadequate 50.59 Evaluation for Switchgear in Seismically Unanalyzed Conditions (Section 1R17.1b.)

Discussed

None

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 of 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.

ANALYSIS (ENGINEERING)

Number	Description or Title	Date or Revision
19-AK-13	Analysis of Load Flow, Short Circuit, and Motor Starting Using Electrical Transient Analyzer Program PowerStation	3W
1EMS107	Piping Stress Analysis for Subsystem 1MS107	6A
1EMS108	Piping Stress Analysis for Subsystem 1MS108	4A
1EMS109	Piping Stress Analysis for Subsystem 1MS109	8A
1EMS111	Piping Stress Analysis for Subsystem 1MS111	7A
CQD-4536-1PC0033	Certified Stress Analysis for Primary Containment Penetration 1PC0033	002
EAD-DG-1	Starting kilo Volt Ampere During LOOP Coincident with Loss of Coolant Accident for Diesel Generators 1A and 1B, Revision 4	May 9, 2013
IP-M-0486	Shutdown Service Water (SX) System Hydraulic Network Analysis Model and Flow Balance Acceptance Criteria	7

ASSESSMENTS

Number	Description or Title	Date or Revision
TODI-CPS-14-030	AREVA Engineering Information Record Doc.# 51-9221634-000; CPS EQ Feasibility Study to Increase the EQ Temperature Limits in Fuel Building (FB) dated May 23, 2014	August 15, 2014
Y-106400, Attachment	Risk Evaluation for Seismically Indeterminate Switchgear Configurations	March 20, 1997

10 CFR 50.59 EVALUATIONS

Number	Description or Title	Date or Revision
CL-2012-E-002	Open Breaker and Defeat Out of Service (OOS) Alarm for 1E12F094 - Multiple Spurious Operation (MSO)	0
CL-2013-E-001	Fuel Pool Cooling and Cleanup (FC) Pump Trip Reliability - Low Suction Pressure	0
CL-2014-E-011	Independent Spend Fuel Storage Installation (ISFSI) - Rigging & Floor Loading Evaluation to Support Upgrading the FB Crane, Rev. 0	April 4, 2014
CL-2014-E-031	Temporary Installation of Modified Quad Trip Card for Nuclear System Protection System for Modification Development	1, 2

10 CFR 50.59 EVALUATIONS

Number	Description or Title	Date or Revision
CL-2014-E-033	ISFSI – Extend Secondary Containment Boundary to FB Outer Rail Road (RR) Bay Doors	0
Log 97-060	6900/4160/480V Switchgear/Circuit Breaker Operability Program	0

10 CFR 50.59 SCREENINGS

Number	Description or Title	Date or Revision
CL-2013-S-002	Change USAR Table 3.9-5 to Remove Valves Without Active Safety Function per IR 1102406	0
CL-2013-S-012	Cut / Remove the High Pressure Core Spray (HPCS) Broken Hanger 1HP06003G	0
CL-2013-S-015	Remove Snubber 1MS11106S and Spring Hanger 1MS11107V and Replace Snubber 1MS10706S, 1MS11108S with a Rigid Strut on 1MS80BA-2	0
CL-2013-S-016	Fukushima FLEX Piping Connection for Pipe 1SX13AA	0
CL-2013-S-024	Elimination of 1VR12S SX Inlet Paddle as Designed in EC 373594	0
CL-2013-S-028	Configuration Change Control for Permanent Physical Plant Changes – Attachment F & G Changes	0
CL-2013-S-034	ISFSI - Structural Impacts Due to Upgrading FB Crane	0
CL-2013-S-045	Change Relay 0AP05E427X2-4A Time Setting from 40 Sec to 43 Sec - Relay for 0AP05E-5C Breaker (0VC03CA) and 0AP05E-5D Breaker (0VC04CA) After CV-2 Undervoltage Relay Resets	0
CL-2013-S-055	Remove Snubbers 1MS10705S, 1MS10706S, 1MS10806S, 1MS10808S, 1MS10907S, 1MS10909S and 1MS10910S	0
CL-2014-S-009	To Accept Clearance Order 99033581 for Work Order 740274-02 for 0WO09SV	0
CL-2014-S-008	To Accept Clearance Order 68907 for Work Order 01152913-01 for 0WO09JT	0
CL-2014-S-016	Fukushima FLEX Piping Connection for Pipe 1SX13AB Required to Support NEI 12-06 FLEX Response	0
CL-2014-S-019	Fukushima FLEX Suppression Pool Cooling Modifications Required to Support NEI 12-06 FLEX Response	0
CL-2014-S-033	ISFSI – Extend Secondary Containment Boundary to FB Outer RR Bay Doors	0
CL-2014-S-037	Change Cover Gas Cleanup System Equipment Cubicle Cooling System Design Basis	0
CL-2014-S-047	Update Screening Criteria for Equivalent Changes – CC-AA-103, Attachment G	0

CALCULATIONS

Number	Description or Title	Date or Revision
01FC07	Allowable Value for FC Pump Trip	2
IP-Q-0391	Qualification of 480V ABB Unit Sub Switchgear, Div. I & II Westinghouse Switchgear (4.16kV & 6.9kV) and Div. III GE 4.16kV Switchgear	0

CORRECTIVE ACTION PROGRAM DOCUMENTS (ARs) ISSUED DURING INSPECTION

Number	Description or Title	Date or Revision
02467481	NRC Mod 50.59 Inspection: 0AP05E427X2-4A Preventative Maintenance (PM) Review	March 12, 2015
02469478	NRC Mod 5059. Inspection: Spare Emergency Diesel Generator (EDG) Vendor Technical Information Program Discrepancy	March 16, 2015
02470544	Systems Engineering Not Sufficiently 50.59 Qualified	March 18, 2015
02471178	NRC Mod 50.59 Inspection EC379765 Incorrectly Processed As Engineering Change Package	March 19, 2015
02471530	NRC Mod 50.59 Inspection Inadequate Documentation in Calculation	March 20, 2015
02471583	NRC Mod 50.59 Inspection Safety Eval 97-060 for CPS 1014.11	March 20, 2015
02471597	NRC Mod 50.59 Inspection Excessive Calculation Minor Revisions	March 20, 2015

CORRECTIVE ACTION PROGRAM DOCUMENTS (ARs) REVIEWED

Number	Description or Title	Date or Revision
00570821	Update Operational Requirements Manual (ORM) for Thermal Overload Protection Motor Operated Valves (MOVs)	December 18, 2006
01053498	MS Operations (OPS) 2P - Spurious Opening of RH SSW to RH Cross-Tie Valves	April 7, 2010
01102406	Eval Removal of MOVs from ORM/USAR Tables	August 17, 2010
01304323	1B21N027: Reactor Pressure Vessel RPV Level 3 Actuation	December 18, 2011
01378209	NRC Generic Letter (GL) 89-13 Evaluations	June 15, 2012
01395496	Minimize Potential Trips to Alternative Decay Heat Removal - FC	July 31, 2012
01574113	VC Fan Start Time OOS for 9080.21	October 18, 2013
01577176	C1R14 LL: Time Delay Relay for VC Fan Breakers	October 27, 2013
02386676	NRC Questions Bases for 48 Hr. Seismic Clock	September 26, 2014
CR1-97-02-273	ABB and GE Breakers Not Seismically Qualified in Racked Out Position	February 27, 1997

DRAWINGS

Number	Description or Title	Date or Revision
M01-1600	Environmental Zone Map Control & Diesel Gen. Bldg. Grade Floor Plan EL. 737'-0" CPS Unit 1	A
M02-1037	P&ID FC CPS Unit 1 Clinton, Illinois	W
M05-1052	P&ID SX CPS Unit 1 Clinton, Illinois	AR
M05-1075	P&ID Residual Heat Removal (RHR) CPS Unit 1 Clinton, Illinois	AX
MS-833	Auxiliary Building - Main Steam (MS)	8
OS-1037	Operational Schematic FC System	5

MODIFICATIONS

Number	Description or Title	Date or Revision
EC 362751	Evaluation for Deferral of EQPM for Replacement of HG Transmitters (Reference: Service Request No. 00046434)	0
EC 379765	Division 1 DG Replacement Generator - Critical Spare	0
EC 386327	Install a Parallel Regulator for 1IA09MC	3
EC 390995	Remove Snubber 1MS11106S and Spring Hanger 1MS11107V and Replace Snubber 1MS11108S with a Rigid Strut on 1MS80BA-2	0
EC 391180	Cut and Remove HPCS Broken Hanger 1HP06003G	0
EC 392017	Abandonment of Valve 1SX209	0
EC 392952	Remove Snubbers 1MS10705S, 1MS10706S, 1MS10806S, 1MS10808S, 1MS10907S, 1MS10909S and 1MS10910S	0
IEE 77299	Item Equivalency Evaluation (IEE) for the Ametek Differential Pressure Transmitter P/N PD3200-100-78-22-36-XX-00, CAT ID 1149271-1	August 24, 2012
PE 86293	IEE for the Average Power Range Monitor (APRM) Quad Trip Equivalency Evaluation for the APRM Quad Trip Card	0

OTHER DOCUMENTS

Number	Description or Title	Date or Revision
0001429855	Engine Systems, Inc. Safety-Related Certificate of Conformance	November 4, 2010
002N2180	Part Equivalency Report, 204B7672G002 to 204B7672G004, Quad Trip Card	0
N/A	Westinghouse Electric Corporation Letter to Illinois Power Company - Subject: Switchgear Seismic Qualification Report	March 28, 1997
N/A	OPS Log	July 21, 2014
N/A	OPS Log	September 30, 2014

OTHER DOCUMENTS

Number	Description or Title	Date or Revision
N/A	OPS Log	December 17-18, 2014
DBR-3136	Design Report: Justification for APRM Flow Biased Rod Block Based on Simulated Thermal Power Signal	2
DC-FC-CP	Integrated FC System Design Criteria CPS – Unit 1 – Illinois Power Company	7
DS-IA-01-CP	Design Specification: Instrument Air (IA) System Piping	2
DS-ME-09-CP	Design Specification: Piping Penetration Assemblies	16
DS-MS-01-CP	Design Specification: Main Steam System Piping	17
LER 97-007	Lack of Procedural Guidance for Maintaining Seismic Qualification Results in Division 3 Switchgear Outside Design Basis when GE 4160 Volt Magne Blast Breakers in Racked-Down (Disconnected) Position	0
IST-CPS-BDOC-V-23	Clinton In-Service Testing Program Bases Document - Residual Heat Removal	13
IST-CPS-BDOC-V-31	Clinton In-Service Testing Program Bases Document - Shutdown Service Water	11
NEDC-31890	GE Nuclear Energy Boiling Water Reactor Owners' Group Report on the Operational Design Basis of Selected Safety-Related Motor-Operated Valves in Response to GL 89-10 Phase 1 - Residual Heat Removal System	April 1991
PMRQ 00158460-03	Inspect, Boroscope, Clean 1VY10A as Required	3
PMRQ 00158471-47	Respiratory Equipment Quarterly Breathing Air Samples / IA Sample	47
USAR Change 7-209	Section 3.10, Qualification of Seismic Category I Instrumentation and Electrical Equipment	April 22, 1997
WO 01621452-01	9058.02, 1E21C002 Comprehensive Pump Test	July 21, 2014
WO 01653000-01	9382.10C22 Version # 125Vdc Charger Load Test (DIV III)	December 17, 2014
WO 01700701-01	Perform RHR B Valve Operability per 9053.04C002 / D002	March 12, 2014

PROCEDURES

Number	Description or Title	Date or Revision
CC-AA-309	Control of Design Analyses	7, 8, 9, 10, 11
CC-AA-309-1001	Guidelines for Preparation and Processing Design Analyses	4, 5, 6, 8
CPS 1005.06	Conduct of Safety Reviews	10
CPS 1014.11	6900 / 4160 / 480V Switchgear / Circuit Breaker Operability Program	5a

PROCEDURES

Number	Description or Title	Date or Revision
CPS 1038.01	Changes to the CPS Operating License (Including Technical Specifications)	5
CPS 3312.03	RHR - Shutdown Cooling & Fuel Pool Cooling and Assist	10a
CPS 3317.01	Fuel Pool Cooling and Cleanup	31
CPS 4411.03	Injection / Flooding Sources	10b
CPS 5040.02	Alarm Panel 5040 Annunciators – Row 2	26c
CPS 9053.04	RHR A/B/C Valve Operability Checks	45c
CPS 9053.04C002	RHR Loop B Valve Operability	3b
CPS 9080.21	Diesel Generator 1A – Emergency Core Cooling System Integrated	33e
LS-AA-101	License and Technical Specification Amendment Process	6
LS-AA-104	Exelon 50.59 Review Process	9
SM-AA-300	Procurement Engineering Support Activities	6
SM-AA-300-1001	Procurement Engineering Process and Responsibilities	17

REFERENCES

Number	Description or Title	Date or Revision
8001232-CR	Engine Systems, Inc. Comparison Report for Safety Related Generator Spare for Division 1 EDG for CPS	December 8, 2010
DC-ME-09-CP	Equipment Environmental Design Conditions Design Criteria CPS – Unit 1	12
Rockwell Test Report 290QR000009	Qualification Report for Gould Pressure Transmitters P/N PG3200-100-48-36-XX-00 and PD3200-100-28-22-36-XX-00	March 21, 1986
CPS Standing Order Log Number 2015-02	Actions for Safety Related Breaker Racking Operations	March 20, 2015

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
APRM	Average Power Range Monitor
AR	Action Request
CAP	Corrective Action Program
CFR	*Code of Federal Regulations*
CPS	Clinton Power Station
CR	Condition Report
ECP	Engineering Change Package
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
FB	Fuel Building
FC	Fuel Pool Cooling & Cleanup
GL	Generic Letter
HPCS	High Pressure Core Spray
IA	Instrument Air
IEE	Item Equivalency Evaluation
IEEE	Institute of Electrical and Electronics Engineers
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report or Issue Request
ISFSI	Independent Spent Fuel Storage Installation
LOOP	Loss of Offsite Power
MOV	Motor Operated Valve
MS	Main Steam
MSO	Multiple Spurious Operation
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OPS	Operations
OOS	Out of Service
ORM	Operational Requirements Manual
PARS	Publicly Available Records System
PM	Preventative Maintenance
RHR	Residual Heat Removal
RG	Regulatory Guide
RR	Rail Road
SDP	Significance Determination Process
SRA	Senior Reactor Analyst
SSC	Structure, System, and Component
SSE	Safe Shutdown Earthquake
SX	Shutdown Service Water
TS	Technical Specification
USAR	Updated Safety Analysis Report
WO	Work Order

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Sincerely,

/RA/

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

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