



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

March 30, 2017

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

SUBJECT: BRAIDWOOD NUCLEAR GENERATING STATION: EVALUATIONS OF
CHANGES, TESTS, AND EXPERIMENTS BASELINE INSPECTION
REPORT 05000456/2017007; 05000457/2017007

Dear Mr. Hanson:

On February 17, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an Evaluations of Changes, Tests, and Experiments inspection at your Braidwood Nuclear Generating Station. The enclosed inspection report documents the inspection results, which were discussed on February 17, 2017, with 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 did not identify any findings or violations of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

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

Docket Nos. 50-456; 50-457
License Nos. NPF-72; NPF-77

Enclosure:
Inspection Report 050004562017007;
05000457/2017007

cc: Distribution via LISTSERV®

B. Hanson

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Letter to Bryan C. Hanson from Robert C. Daley dated March 30, 2017

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CHANGES, TESTS, AND EXPERIMENTS BASELINE INSPECTION
REPORT 05000456/2017007; 05000457/2017007

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-456; 50-457
License No: NPF-72; NPF-77

Report No: 05000456/2017007; 05000457/2017007

Licensee: Exelon Generation Company, LLC

Facility: Braidwood Nuclear Generating Station

Location: Braceville, IL

Dates: February 13 – 17, 2017

Inspectors: A. Shaikh, Senior Reactor Inspector (Lead)
J. Robbins, Reactor Inspector
J. Park, Reactor Inspector

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

Enclosure

SUMMARY

Inspection Report 050004562017007; 05000457/2017007; 02/13/2017 – 02/17/2017; Braidwood Nuclear Generating Station; Evaluations of Changes, Tests, and Experiments.

This report covers a 2-week announced baseline inspection on evaluations of changes, tests, and experiments. The inspection was conducted by Region III based engineering inspectors. The U.S Nuclear Regulatory Commission's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6, dated July 2016.

NRC-Identified and Self-Revealed Findings

No findings were identified.

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 (71111.17T)

.1 Evaluation of Changes, Tests, and Experiments

a. Inspection Scope

The inspectors reviewed 9 safety evaluations performed pursuant to Title 10, *Code of Federal Regulations* (CFR), Part 50.59 to determine if the evaluation was adequate and that prior U.S. Nuclear Regulatory Commission (NRC) approval was obtained as appropriate. The inspectors also reviewed 17 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 96-07, "Guidelines for 10 CFR 50.59 Implementation," Revision 1, to determine acceptability of the completed evaluations, and screenings. The Nuclear Energy Institute 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 sample constituted 26 evaluations and screenings as defined in Inspection Procedure 71111.17T.

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 screenings. The inspectors reviewed these documents to evaluate the effectiveness of corrective actions related to

screenings 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

The inspectors presented the inspection results to Mrs. M. Marchionda-Palmer and other members of the licensee staff on February 17, 2017. The licensee personnel acknowledged the inspection results presented, and did not identify any proprietary content.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

M. Marchionda-Palmer, Site Vice President
A. Ferko, Plant Manager
S. Reynolds, Regulatory Assurance Manager
F. Piriano, Design Engineering Manager
R. Schliessmann, Regulatory Assurance
C. Kulbida Design Engineering
J. Morales, Design Engineering
G. Holt, Design Engineering

U.S. Nuclear Regulatory Commission

D. Kimble, Senior Resident Inspector
D. Betancourt, Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened, Closed, and Discussed

None

LIST OF ACRONYMS USED

CFR *Code of Federal Regulations*

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.

10 CFR 50.59 EVALUATIONS

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
2015-055	UFSAR Revision for Reactor Head Lift – Polar Crane Single Failure Proof Equivalency Per NEI 08-05	0
2015-92	Westinghouse Ovation Digital Upgrade for Rod Control Logic Cabinet	0 and 1
2015-064	Fukushima FLEX Piping Connections for Auxiliary Feedwater	0
2015-110	RC-RCP Seal Replace/Upgrade A2R18 / RC-RCP Seal Replace/Upgrade A1R19	0
2016-20	Replace RCP Underfrequency KF Relays with Circuit Shield Type 81 Frequency Relays to Address ABB Part 21 Notification of Potential Defect for KF Relay ZPA	0 and 1
2016-31	20 DT/TA Loop – Two THOT RTD Operation – Cycle 19	0
2014-120	Incorporation of PAD Code Version 4.0 for Byron BWD Fuel Rod Design	0
2016-14	Remove AF Diesel Air Intake Elbow And Blank Off TB Air Intake	0
2016-71	Modification of Combustion Air Intakes for AF Diesel Engines 1AF01PB and 2AF01PB	0
2014-032	Steam Generator Main Steam Safety Valve (MSSV Vent Pipe Removal)	0
2014-101	GL 08-01: Add ECCS Vents in Support of Online Maintenance	0
2014-121	Retention of Temporary Scaffold Installed Beyond 90 Days in Support of Maintenance	0
2015-096	Storage of Reactor Head Stand, Bioshield Wall Extension and Shielded Door Assembly in Containment After A2R18	0
2015-153	Installation of New Pipe Support 2SX08117X for GL 96-06 Load	0
2014-60	New Design Universal Logic Board and Safeguards Driver Board 48 VDC Input	0
2014-89	UFSAR Update to Address Tornado Missile Protection Considerations for Essential Service Water Discharge Extension Lines	0
2015-35	As Left Condition for Unit 1 DRPI MS (IRD43R) AS Coil Open	0
2014-92	Technical Specification (TS) Bases B 3.8.1 Revision for Surveillance Requirement (SR) 3.8.1.14	0
2014-109	Exciter Trip Gen Trip, Generator Field Forcing	0
2014-139	UFSAR Revision for Section 8.3.1 and Table 8.1-1 BOP-DG-11 – Diesel Generator Startup	0
2015-6	Main XFRMR 1E/1W/2E/2W Oil Temperature High	0
2014-106	U2 MSSV Vent Line Modification	0
2014-150	Revision to 1/2BwOSR 0.1-1,2,3 and 1/2BwOSR 01-4 to Incorporate a Revised UHS Temperature Value	0
2015-14	Reduced Elongation Range for the U1 Reactor Vessel Main Closure Studs	0
2016-53	Add Insulation to 2WE171A-2” in the Lower Cable Spreading Room	0
2016-74	Revise Fuel Center Line Melt Temperature Limit Per MUR Analyses	0

CORRECTIVE ACTION PROGRAM DOCUMENTS INITIATED DURING INSPECTION

<u>Number</u>	<u>Description or Title</u>	<u>Date</u>
IR 3975285	NRC Identified a Potential Weakness In 50.59 Evaluation	02/17/17
IR 3974361	6.9 KV Switchgear – Passport Seismic Category Clarification	02/15/17
IR 3975304	NRC Questions on SX Discharge Piping Analysis	02/17/17

CORRECTIVE ACTION PROGRAM DOCUMENTS REVIEWED

<u>Number</u>	<u>Description or Title</u>	<u>Date</u>
IR 2571277	OSP-A Emergent Modification Required for SX Support(s)	10/15/15
IR 2724261	Wiring Discrepancies During Wiring Checks on EC 400918	10/04/16
IR 2648103	2D TAVE Reads 1 Degree Lower After BWISR 3.3.1.10	03/30/16
IR 2478976	CCP – EC Required for Ball Valves in Aux. Bldg.	04/02/15
IR 2521321	50.59 Not Done for Increasing CC Temp from 120°F to 128°F	06/29/15
IR 2712994	Legacy Issue Identified While Wiring 1CX10J for Ovation Mod	09/07/16
IR 2716475	7300 MOD – New Ovation RVP Modules Not Working As Expected	09/15/16
IR 2723804	Wiring Discrepancies Found During Wiring Checks on EC 400433	10/04/16
IR 02466899	Scaffold 50.59 Required to Avoid Unnecessary Rework	03/09/15
IR 01698141	Discrepancies in PBI Noted During 50.59 Review	08/29/14

PROCEDURES

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
LS-AA-104	Exelon 50.59 Review Process	10
BwMP 3100-008	Reactor Vessel Closure Head Installation	41

OTHER DOCUMENTS

<u>Number</u>	<u>Description or Title</u>	<u>Revision</u>
WO 1068690-09	CI-U1 Aux Seismic GAP Repairs – IR #666968 Purge Room 451'	0
Calc. 13.2.33- BRW-15-0105-S	Structural Evaluation of Supports 2SX08117X, 2SX06031X, 2SX06033X and In-Place Beam No. 13801 for GL 96-06 Loads	0
Calc. BRW-12- 0057-M	Documentation of Metal Passive Heat Sinks Margins Inside Containment	9
EC 401770	Details to Secure Open and Closed Ball Valve Handles from Inadvertent Change of State Due to Bumping	0
EC 403574	Installation of New Pipe Support 2SX08117X for GL 96-06 Load	1
EC 397288	GL 08-01: Add ECCS Vents in Support of Online Maintenance	1
M-900	Outdoor Piping Arrangement, Sheet 1Y	K
WCAP-10125 -P-A	Extended Burnup Evaluation of Westinghouse Fuel	1
CN-MRCDA 14-1	One Stud Out of Service Bolt-up and Heat-up Loads	0
EC 394080	Main Steam Safety Valve (MSSV) Vent Line Mod for Tornado Missile Protection	2