



Order No. EA-12-051

RS-15-280

December 15, 2015

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Subject: Report of Full Compliance with March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051)

References:

1. NRC Order Number EA-12-051, "Issuance of Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," dated March 12, 2012
2. NRC Interim Staff Guidance JLD-ISG-2012-03, "Compliance with Order EA-12-051, Reliable Spent Fuel Pool Instrumentation," Revision 0, dated August 29, 2012
3. NEI 12-02, Industry Guidance for Compliance with NRC Order EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," Revision 1, dated August 2012
4. Exelon Generation Company, LLC's Initial Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated October 25, 2012
5. Exelon Generation Company, LLC Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated February 28, 2013 (RS-13-034)
6. NRC letter to Exelon Generation Company, LLC, Request for Additional Information Regarding Overall Integrated Plan for Reliable Spent Fuel Pool Instrumentation, dated June 24, 2013
7. Exelon Generation Company, LLC letter to NRC, Response to Request For Additional Information - Overall Integrated Plan in Response to Commission Order Modifying License Requirements for Reliable Spent Fuel Pool Instrumentation (Order EA-12-051), dated July 19, 2013 (RS-13-178)
8. Exelon Generation Company, LLC First Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated August 28, 2013 (RS-13-126)

9. Exelon Generation Company, LLC Second Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated February 28, 2014 (RS-14-024)
10. Exelon Generation Company, LLC Third Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated August 28, 2014 (RS-14-202)
11. Exelon Generation Company, LLC Fourth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated February 27, 2015 (RS-15-032)
12. Exelon Generation Company, LLC Fifth Six-Month Status Report in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051), dated August 28, 2015 (RS-15-204)
13. NRC letter to Exelon Generation Company, LLC, Peach Bottom Atomic Power Station, Units 2 and 3 – Interim Staff Evaluation and Request for Additional Information Regarding the Overall Integrated Plan for Implementation of Order EA-12-051, Reliable Spent Fuel Pool Instrumentation (TAC Nos. MF0849 and MF0850), dated October 30, 2013
14. NRC letter to Exelon Generation Company, LLC, Peach Bottom Atomic Power Station, Units 2 and 3 – Report for the Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Pool Instrumentation Related to Orders EA-12-049 and EA-12-051 (TAC Nos. MF0845, MF0846, MF0849 and MF0850), dated September 23, 2015

On March 12, 2012, the Nuclear Regulatory Commission (“NRC” or “Commission”) issued Order EA-12-051, “Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation,” (Reference 1) to Exelon Generation Company, LLC (EGC). Reference 1 was immediately effective and directed EGC to install reliable spent fuel pool level instrumentation. Specific requirements are outlined in Attachment 2 of Reference 1.

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan (OIP) pursuant to Section IV, Condition C. Reference 2 endorsed industry guidance document NEI 12-02, Revision 1 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided the EGC initial status report regarding reliable spent fuel pool instrumentation. Reference 5 provided the Peach Bottom Atomic Power Station, Units 2 and 3 OIP.

Reference 1 required submission of a status report at six-month intervals following submittal of the OIP. References 8, 9, 10, 11, and 12 provided the first, second, third, fourth, and fifth six-month status reports, respectively, pursuant to Section IV, Condition C.2, of Reference 1 for Peach Bottom Atomic Power Station, Units 2 and 3.

The purpose of this letter is to provide the report of full compliance with the March 12, 2012 Commission Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation (Order Number EA-12-051) (Reference 1) pursuant to Section IV, Condition C.3 of the Order for Peach Bottom Atomic Power Station, Units 2 and 3.

Peach Bottom Atomic Power Station, Units 2 and 3 have installed two independent full scale level monitors for the Spent Fuel Pool (SFP) in response to Order EA-12-051. Peach Bottom Atomic Power Station, Units 2 and 3 OIP Open Items have been addressed and closed as documented in References 8, 9, 10, 11, and 12, and are considered complete pending NRC closure. The information provided herein documents full compliance for Peach Bottom Atomic Power Station, Units 2 and 3 with Reference 1.

EGC's response to the NRC OIP Requests for Additional Information (OIP RAIs), and the NRC Interim Staff Evaluation (ISE) Open Items (ISE RAIs) identified in References 6 and 13 have been addressed and closed as documented in References 7, 8, 9, 10, 11, 12, and below, and are considered complete pending NRC closure. The following table provides completion references for each NRC OIP RAI and ISE RAI.

OIP Open Item No. 1	Reference 8
OIP RAI No. 1	Reference 7
OIP RAI Nos. 2, 3, 4, 5	Reference 12
OIP RAI No. 7	Reference 10
OIP RAI No. 8	Reference 12 and updated with this submittal as provided below
OIP RAI No. 11	Reference 11
ISE RAI No. 1	Reference 9
ISE RAI Nos. 4, 5, 7	Reference 12
ISE RAI No. 9 (replaces OIP RAI 6)	Reference 11
ISE RAI No. 12 (replaces OIP RAI 9)	Reference 10
ISE RAI No. 13 (replaces OIP RAI 10)	Reference 12 and updated with this submittal as provided below

Table Notes:

- ISE RAIs are not duplicated in the table above if previously issued as OIP RAIs in Reference 6.

EGC's response to the NRC audit questions and additional audit open items have been addressed as documented in the NRC Site Audit Report (Reference 14). Reference 14 contains no remaining audit open items regarding Peach Bottom Atomic Power Station, Units 2 and 3 compliance with NRC Order EA-12-051.

The table below documents the completion of the final remaining open actions as identified in Reference 12. As stated above, EGC provides the response for the following items and considers them to be complete for Peach Bottom Atomic Power Station, Units 2 and 3.

Item	Description	Reference
<p>OIP Item 9 (RAI-8, Ref. 7)</p> <p><u>RAI Question:</u> Please provide the following:</p> <p>a) A description of the capability and provisions the proposed level sensing equipment will have to enable periodic testing and calibration, including how this capability enables the equipment to be tested in-situ.</p> <p>b) A description of how such testing and calibration will enable the conduct of regular channel checks of each independent channel against the other, and against any other permanently-installed SFP level instrumentation.</p> <p>c) A description of how functional checks will be performed, and the frequency at which they will be conducted. Describe how calibration tests will be performed, and the frequency at which they will be conducted. Provide a discussion as to how these surveillances will be incorporated into the plant surveillance program.</p> <p>d) A description of what preventive maintenance tasks are required to be</p>	<p>a) Westinghouse provided test equipment that provides the capability to enable periodic testing and calibration of the proposed level sensing equipment. Westinghouse calibration procedure WNA-TP-04709-GEN and functional test procedure WNA-TP-04613-GEN provide instructions to use the test equipment to perform periodic testing and calibration, including in-situ testing. Peach Bottom Atomic Power Station in-situ test methodology is based on the Westinghouse Two Point Verification Method, LTR-SFPIS-14-55.</p> <p>b) The level displayed by the channels will be verified per the Peach Bottom Atomic Power Station operating procedures, as recommended by Westinghouse vendor technical manual WNA-GO-00127-GEN. If the level is not within the required accuracy per Westinghouse recommended tolerance in WNA-TP-04709-GEN, channel calibration will be performed.</p> <p>c) The functional test and calibration are combined in the same procedure, IC-11-00660. The Peach Bottom procedure is associated with a PM that establishes the required performance of the procedure 60 days prior to a scheduled refueling outage of either unit. These procedures are based off of the Westinghouse Two Point Verification Method and WNA-TP-04709-GEN Spent Fuel Pool Instrument System Calibration</p>	<p><u>Complete</u></p> <p>With this Compliance submittal.</p>

<p>performed during normal operation, and the planned maximum surveillance interval that is necessary to ensure that the channels are fully conditioned to accurately and reliably perform their functions when needed.</p>	<p>Procedure. The procedure establishes the current water level by measuring the distance to the water referenced from the bottom of the launch plate. This measured distance is then compared to the level indication obtaining the As-Found indication value. The probe is then lifted out of the water to a predetermined mark on the probe. The water level at the predetermined mark is then recorded. The probe is lowered back into the water freely suspended from the launch plate. The level indication is recorded. If all three As-Found Level indications are within the tolerance specified, the procedure is exited. If the As-Found values are not within tolerance the calibration is performed to bring the indication within the calibration requirements. The calibration steps of the Peach Bottom procedures were taken from Westinghouse document WNA-TP-04709-GEN Spent Fuel Pool Instrument System Calibration Procedure.</p> <p>d) Peach Bottom Atomic Power Station has developed preventive maintenance tasks for the SFPI per Westinghouse recommendation identified in the technical manual WNA-GO-00127-GEN to assure that the channels are fully conditioned to accurately and reliably perform their functions when needed.</p>	
<p>ISE Item 7 (RAI-13, Ref. 13)</p> <p><u>RAI Question:</u> Please provide a list of the procedures addressing operation (both normal and abnormal response), calibration, test,</p>	<p>Site procedures have been developed for system inspection, calibration and test, maintenance, operation and normal and abnormal responses, in accordance with Exelon's procedure control process. Technical objectives to be achieved in each of the respective procedures are</p>	<p><u>Complete</u> With this Compliance submittal.</p>

<p>maintenance, and inspection procedures that will be developed for use of the SFP instrumentation. The licensee is requested to include a brief description of the specific technical objectives to be achieved within each procedure.</p>	<p>described below:</p> <p>Procedure Objectives to be achieved:</p> <ol style="list-style-type: none"> 1. System Inspection: To verify that visible portions of system components are in place, complete, and in the correct configuration. 2. Calibration and Test: To verify that the system is within the specified accuracy, is functioning as designed, and is appropriately indicating SFP water level. 3. Maintenance: To establish and define scheduled and preventive maintenance requirements and activities necessary to minimize the possibility of system interruption. 4. Operation: To provide sufficient instructions for operation and use of the system by plant operation staff. 5. Responses: To define the actions to be taken upon observation of system level indications, including actions to be taken at the levels defined in NEI 12-02. <p>The list of procedures was provided to the NRC's Khoi Nguyen on June 25, 2015 while he was on site at Peach Bottom to perform the audit. The associated SE tracker item was closed out at that time.</p>	
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MILESTONE SCHEDULE – ITEMS COMPLETE

Milestone	Completion Date
Submit 60 Day Status Report	October 25, 2012
Submit Overall Integrated Plan	February 28, 2013
Submit Responses to RAIs	July 19, 2013
Submit 6 Month Updates:	

Milestone	Completion Date
Update 1	August 28, 2013
Update 2	February 28, 2014
Update 3	August 28, 2014
Update 4	February 27, 2015
Update 5	August 28, 2015
Modifications:	
Conceptual Design	3Q2012
Issue Exelon Fleet contract to procure SFPI Equipment	2Q2013
Begin Detailed Design Engineering	4Q2013
Complete and Issue SFPI Modification Package	1Q2015
Begin Installation	2Q2015
Complete SFPI Installation and Put Into Service	October 09, 2015

ORDER EA-12-051 COMPLIANCE ELEMENTS SUMMARY

The elements identified below for Peach Bottom Atomic Power Station, Units 2 and 3, as well as the site overall integrated plan response submittal (Reference 5), and the 6-Month Status Reports (References 8, 9, 10, 11, and 12), demonstrate compliance with Order EA-12-051.

IDENTIFICATION OF LEVELS OF REQUIRED MONITORING - COMPLETE

Peach Bottom Atomic Power Station, Units 2 and 3 have identified the three required levels for monitoring SFP level in compliance with Order EA-12-051. These levels have been integrated into the site processes for monitoring level during events and responding to loss of SFP inventory.

INSTRUMENT DESIGN FEATURES - COMPLETE

The design of the instruments installed at Peach Bottom Atomic Power Station, Units 2 and 3 complies with the requirements specified in the Order and described in NEI 12-02 "Industry Guidance for Compliance with NRC Order EA-12-051". The instruments have been installed in accordance with the station design control process.

The instruments have been arranged to provide reasonable protection against missiles. The instruments have been mounted to retain design configuration during and following the maximum expected ground motion. The instruments will be reliable during expected environmental and radiological conditions when the SFP is at saturation for extended periods. The instruments are independent of each other and have separate and diverse power supplies. The instruments will maintain their design accuracy following a power interruption and are designed to allow for routine testing and calibration.

The instrument display is readily accessible during postulated events and allows for SFP level information to be promptly available to decision makers.

PROGRAM FEATURES - COMPLETE

Training for Peach Bottom Atomic Power Station, Units 2 and 3 has been completed in accordance with an accepted training process as recommended in NEI 12-02, Section 4.1.

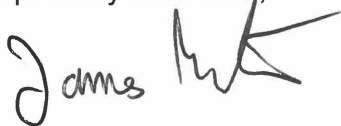
Operating and maintenance procedures for Peach Bottom Atomic Power Station, Units 2 and 3 have been developed and integrated with existing procedures. Procedures have been verified and are available for use in accordance with the site procedure control program.

Site processes have been established to ensure the instruments are maintained at their design accuracy.

This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact David P. Helker at 610-765-5525.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 15th day of December 2015.

Respectfully submitted,



James Barstow
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cc: Director, Office of Nuclear Reactor Regulation
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