Exelon Generation®

Order No. EA-12-051

RS-15-206

August 28, 2015

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

R. E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
NRC Docket No. 50-244

Subject: 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)

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, Order Modifying Licenses with Regard to 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. Constellation Energy Nuclear Group, LLC letter to NRC, 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 26, 2012
5. Constellation Energy Nuclear Group, LLC letter to NRC, 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
6. Constellation Energy Nuclear Group, LLC letter to NRC, Supplement to 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 March 8, 2013
7. Constellation Energy Nuclear Group, LLC letter to NRC, 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 27, 2013 (R. E. Ginna Nuclear Power Plant)

8. Constellation Energy Nuclear Group, LLC letter to NRC, 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 24, 2014 (R. E. Ginna Nuclear Power Plant)
9. Exelon Generation Company, LLC letter to NRC, 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 26, 2014 (R. E. Ginna Nuclear Power Plant)
10. Exelon Generation Company, LLC letter to NRC, 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 20, 2015 (RS-15-062)
11. NRC letter to Constellation Energy Nuclear Group, LLC, R. E. Ginna Nuclear Power Plant – 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 No. MF1147), dated December 5, 2013
12. Letter from J. P. Boska (NRC) to J. E. Pacher (EGC), R. E. Ginna Nuclear Power Plant – Report for the Onsite Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Pool Instrumentation Related to Orders EA-12-049 and EA-12-051 (TAC Nos. MF1152 and MF1147), dated June 18, 2015

On March 12, 2012, the Nuclear Regulatory Commission ("NRC" or "Commission") issued an order (Reference 1) to Exelon Generation Company, LLC (EGC), previously Constellation Energy Nuclear Group, LLC (Exelon, the licensee). Reference 1 was immediately effective and directs 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 pursuant to Section IV, Condition C. Reference 2 endorses 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. References 5 and 6 provided the R. E. Ginna Nuclear Power Plant overall integrated plan.

Reference 1 requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Reference 3 provides direction regarding the content of the status reports. References 7, 8, 9, and 10 provided the first, second, third, and fourth six-month status reports, respectively, pursuant to Section IV, Condition C.2, of Reference 1 for the R. E. Ginna Nuclear Power Plant. The purpose of this letter is to provide the fifth six-month status report pursuant to Section IV, Condition C.2, of Reference 1, that delineates progress made in implementing the requirements of Reference 1. The enclosed report provides an update of milestone accomplishments since the last status report, including any changes to the compliance method, schedule, or need for relief and the basis, if any. The enclosed report also addresses the NRC Interim Staff Evaluation Request for Additional Information Items contained in Reference 11, and any NRC Audit Report open items contained in Reference 12.

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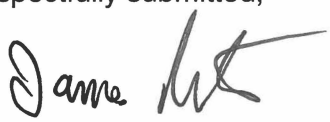
This letter contains no new regulatory commitments. If you have any questions regarding this report, please contact David P. Helker at 610-765-5525.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 28th day of August 2015.

Respectfully submitted,



James Barstow
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Enclosure:

R. E. Ginna Nuclear Power Plant Fifth Six-Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation

cc: Director, Office of Nuclear Reactor Regulation
NRC Regional Administrator - Region I
NRC Senior Resident Inspector – R. E. Ginna Nuclear Power Plant
NRC Project Manager, NRR – R. E. Ginna Nuclear Power Plant
Ms. Jessica A. Kratchman, NRR/JLD/PMB, NRC
Mr. John P. Boska, NRR/JLD/JOMB, NRC

Enclosure

R. E. Ginna Nuclear Power Plant

Fifth Six-Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation

(11 pages)

1 Introduction

R. E. Ginna Nuclear Power Plant, LLC (Ginna) developed an Overall Integrated Plan (Reference 1 in Section 8), documenting the requirements to install reliable Spent Fuel Pool Level Instrumentation (SFPLI), in response to Reference 2. This enclosure provides an update of milestone accomplishments since submittal of the Fourth Six-Month status report including any changes to the compliance method, schedule, or need for relief/relaxation and the basis, if any.

2 Milestone Accomplishments

The following milestones have been completed since the development of the Fourth Six-Month status report (Reference 3), and are current as of July 24, 2015.

- None

3 Milestone Schedule Status

The following provides an update to the milestone schedule to support the Overall Integrated Plan. This section provides the activity status of each item, and the expected completion date noting any change. The dates are planning dates subject to change as design and implementation details are developed.

The revised milestone target completion dates do not impact the order implementation date.

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Submit 60 Day Status Report	October 26, 2012	Complete	
Submit Overall Integrated Plan	February 28, 2013	Complete	
Submit Responses to RAIs	September 23, 2013	Complete	
Submit 6 Month Updates:			
Update 1	August 27, 2013	Complete	
Update 2	February 24, 2014	Complete	
Update 3	August 28, 2014	Complete	
Update 4	February 28, 2015	Complete	
Provide Final Safety Evaluation (SE) Information	September 30, 2014	Complete	
Update 5	August 28, 2015	Complete with this Submittal	

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Modifications:			
Commence Engineering and Design	1Q2014	Complete	3Q2013
Complete Engineering and Design	2Q2014	Complete	4Q2013
Receipt of SFP Instruments	1Q2015	Complete	1Q2014
Commence Installation of SFP Instruments	1Q2015	Complete	4Q2014
Close out Project/Plant Turnover	2Q2015	Complete	1Q2015

4 Changes to Compliance Method

No changes to the compliance methodology have occurred since the February 2015 status report (Reference 3).

5 Need for Relief/Relaxation and Basis for the Relief/Relaxation

Ginna expects to comply with the order implementation date and no relief/relaxation is required at this time.

6 Open Items from Overall Integrated Plan and Draft Safety Evaluation

As noted in the memorandum from C. A. Hunt (NRC) to M. A. Mitchell (NRC), Summary of the November 26, 2013 Public Meeting to Discuss Industry Responses to Staff Interim Evaluations for Spent Fuel Pool Instrumentation (Reference 4), the ISE questions supersede any previous requests for information issued by the staff concerning the spent fuel pool instrumentation. The following table provides a summary of the open items documented in the Interim Safety Evaluation (SE) (Reference 5) and the status of each item. (Note: All open items are complete.)

Draft Safety Evaluation Open Items		
OI#	**Description**	**Status**
1 (RAI-1, Ref. 5)	RAI Question: **Please provide additional information describing how the proposed arrangement of the waveguides and routing of the cabling between the radar horns and the electronics in the Intermediate Floor (Elevation 253 ft. 0 in.) meets the Order requirement to arrange the SFP level instrument channels in a manner that provides reasonable protection of the level indication function against missiles that may result from damage to the structure over the SFP.**	Complete. (See the 2/2014 OIP Update – Reference 7)
2 (RAI-2, Ref. 5)	RAI Question: **Please provide the analyses verifying the seismic testing of the horn and waveguide assembly and the electronics units, and the analysis of the combined maximum seismic and hydrodynamic forces on the cantilevered portion of the assembly exposed to the potential sloshing effects. Show the SFP instrument design configuration will be maintained during and following the maximum**	Complete. (See the 2/2015 OIP Update – Reference 3)

	seismic ground motion considered in the design of the SFP structure.	
3 (RAI-3, Ref. 5)	RAI Question: **For each of the mounting attachments required to attach SFP Level equipment to plant structures, please describe the design inputs, and the methodology that will be used to qualify the structural integrity of the affected structures/ equipment.**	Complete. (See the 2/2014 OIP Update – Reference 7)
4 (RAI-4, Ref. 5)	RAI Question: **Please provide analysis of the maximum expected radiological conditions (dose rate and total integrated dose) to which the equipment will be exposed. Also, please provide documentation indicating how it was determined that the electronics for this equipment are capable of withstanding a total integrated dose of $1x10^3$ Rads. Please discuss the time period over which the analyzed total integrated dose was applied.**	Complete. (See the 2/2014 OIP Update – Reference 7)
5 (RAI-5, Ref. 5)	RAI Question: **Please provide information indicating (a) whether the 80^0C rating for the sensor electronics is a continuous duty rating; and, (b) the maximum**	Complete. (See the 2/2015 OIP Update – Reference 3)

	expected ambient temperature in the room in which the sensor electronics will be located under Beyond Design Basis (BDB) conditions with no ac power available to run Heating Ventilation and Air Conditioning (HVAC) systems.	
6 (RAI-6, Ref. 5)	RAI Question: **Please provide information indicating the maximum expected relative humidity in the room in which the sensor electronics will be located under BDB conditions, with no ac power available to run HVAC systems, and whether the sensor electronics are capable of continuously performing their required functions under this expected humidity condition.**	Complete. (See the 2/2015 OIP Update – Reference 3)
7 (RAI-7, Ref. 5)	RAI Question: **Please provide information describing the evaluation of the comparative sensor design, the shock test method, test results, and forces applied to the sensor applicable to its successful tests, demonstrating the referenced previous testing provides an appropriate means to demonstrate reliability of the sensor under the effects of severe shock.**	Complete. (See the 2/2014 OIP Update – Reference 7)

8 (RAI-8, Ref. 5)	RAI Question: **Please provide information describing the evaluation of the comparative sensor design, the vibration test method, test results, and the forces and their frequency ranges and directions applied to the sensor applicable to its successful tests, demonstrating the referenced previous testing provides an appropriate means to demonstrate reliability of the sensor under the effects of high vibration.**	Complete. (See the 2/2014 OIP Update – Reference 7)
9 (RAI-9, Ref. 5)	RAI Question: **Please provide information describing the evaluation of the comparative display panel ratings against postulated plant conditions. Also provide results of the manufacturer's shock and vibration test methods, test results, and the forces and their frequency ranges and directions applied to the display panel associated with its successful tests.**	Complete. (See the 2/2014 OIP Update – Reference 7)
10 (RAI-10, Ref. 5)	RAI Question: **Please provide the results of seismic testing for shock and vibration effects to demonstrate the reliability of the components within the**	Complete. (See the 2/2014 OIP Update – Reference 7)

	power and control panel under shock and vibration conditions.	
11 (RAI-11, Ref. 5)	RAI Question: **Please provide analysis of the seismic testing results and show that the instrument performance reliability, following exposure to simulated seismic conditions representative of the environment anticipated for the SFP structures at Ginna, has been adequately demonstrated.**	Complete. (See the 2/2014 OIP Update – Reference 7)
12 (RAI-12, Ref. 5)	RAI Question: **Please provide the NRC staff with the final configuration of the power supply source for each channel so the staff may conclude the two channels are independent from a power supply assignment perspective.**	Complete. (See the 2/2014 OIP Update – Reference 7)
13 (RAI-13, Ref. 5)	RAI Question: **Please provide the results of the calculation depicting the battery backup duty cycle requirements, demonstrating battery capacity is sufficient to maintain the level indication function until offsite resource availability is reasonably assured.**	Complete. (See the 2/2014 OIP Update – Reference 7)
14 (RAI-14, Ref. 5)	RAI Question: **Please provide the analysis verifying**	Complete. (See the 8/2014 OIP Update – Reference 8)

	proposed instrument performance is consistent with these estimated accuracy normal and BDB values. Please demonstrate the channels will retain these accuracy performance values following a loss of power and subsequent restoration of power.	
15 (RAI-15, Ref. 5)	RAI Question: **Please describe the evaluation used to validate that the display locations can be accessed without unreasonable delay following a BDB event. Include the time available for personnel to access the display location as credited in the evaluation, as well as the actual time (e.g., based on walk-through) that it will take for personnel to access the display locations. Additionally, please include a description of the radiological and environmental conditions on the paths personnel might take. Describe whether the display locations remain habitable for radiological, heat and humidity, and other environmental conditions following a BDB event. Describe whether personnel are continuously stationed at the display locations or monitor the displays**	Complete. (See the 8/2014 OIP Update – Reference 8)

	periodically.	
16 (RAI-16, Ref. 5)	RAI Question: **Please provide a list of the procedures addressing operation (both normal and abnormal response), calibration, test, maintenance, and inspection 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.**	Complete. (See the 8/2014 OIP Update – Reference 8)
17 (RAI-17, Ref. 5)	RAI Question: **Please provide the following:** **a. Further information describing the maintenance and testing program the licensee will establish and implement to ensure that regular testing and calibration is performed and verified by inspection and audit to demonstrate conformance with design and system readiness requirements. Please include a description of the plans for ensuring that necessary channel checks, functional tests, periodic calibration,**	Complete. (See the 8/2014 OIP Update – Reference 8)

	and maintenance will be conducted for the level measurement system and its supporting equipment. **b. Information describing compensatory actions when both channels are out-of-order, and the implementation procedures.** **c. Additional information describing expedited and compensatory actions in the maintenance procedure to address a condition when one of the instrument channels cannot be restored to functional status within 90 days.**	
18 (RAI-18, Ref. 5)	RAI Question: **Please provide a description of the in-situ calibration process at the SFP location that will result in the channel calibration being maintained at its design accuracy.**	Complete. (See the 8/2014 OIP Update – Reference 8)

7 Potential Draft Safety Evaluation Impacts

There are no potential impacts to the Draft Safety Evaluation identified at this time.

8 References

The following references support the updates to the Overall Integrated Plan described in this enclosure.

1. Constellation Energy Nuclear Generation, LLC, letter to USNRC, "Supplement to Overall Integrated Plan for Reliable Spent Fuel Pool Instrumentation," dated March 8, 2013 (FLL-13-14)
2. NRC Order Number EA-12-051, "Issuance of Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," dated March 12, 2012
3. Exelon Generation, letter to USNRC, "February 2015 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 20, 2015 (RS-15-062)
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5. USNRC letter to Constellation Energy Nuclear Generation, LLC, "Constellation Energy Nuclear Group, R.E. Ginna Nuclear Power Plant, 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. MF1147)," dated December 5, 2013
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