Exelon Generation®

Order No. EA-12-051

RS-13-116

August 28, 2013

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

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Subject: 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)

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. Exelon Generation Company, LLC's Initial 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 October 25, 2012
5. Exelon Generation Company, LLC Overall Integrated Plan 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 February 28, 2013 (RS-13-029)

On March 12, 2012, the Nuclear Regulatory Commission ("NRC" or "Commission") issued an order (Reference 1) to Exelon Generation Company, LLC (EGC). 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. Reference 5 provided the Clinton Power Station, Unit 1 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. The purpose of this letter is to provide the first 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.

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 2013.

Respectfully submitted,

Glen T. Kaegi
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Enclosure:

1. Clinton Power Station, Unit 1 First 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 III
NRC Senior Resident Inspector – Clinton Power Station, Unit 1
NRC Project Manager, NRR – Clinton Power Station, Unit 1
Ms. Jessica A. Kratchman, NRR/JLD/PMB, NRC
Mr. Robert J. Fretz, Jr, NRR/JLD/PMB, NRC
Mr. Robert L. Dennig, NRR/DSS/SCVB, NRC
Illinois Emergency Management Agency - Division of Nuclear Safety

Enclosure

Clinton Power Station, Unit 1

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

(9 pages)

Clinton Power Station, Unit 1

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

1 Introduction

Clinton Power Station, Unit 1, 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 Overall Integrated Plan 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 Overall Integrated Plan (Reference 1), and are current as of August 19, 2013.

- Issued Exelon Fleet contract to procure Spent Fuel Pool Instrumentation (SFPI) on June 18, 2013
- Submitted responses to USNRC RAIs (Ref. 3 and 4) on July 3, 2013

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 25, 2012	Complete	
Submit Overall Integrated Plan	February 28, 2013	Complete	
Submit Responses to RAIs	July 5, 2013	Complete	
Submit 6 Month Updates:			
Update 1	August 28, 2013	Complete with this submittal	
Update 2	February 28, 2014	Not Started	

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
Update 3	August 28, 2014	Not Started	
Update 4	February 28, 2015	Not Started	
Update 5	August 28, 2015	Not Started	
Modifications:			
Conceptual Design	3Q2012	Complete	
Issue Exelon Fleet contract to procure SFPI Equipment	1Q2015	Complete	2Q2013
Begin Detailed Engineering Design	3Q2013	Not Started	4Q2013
Complete and Issue SFPI Modification Package	1Q2014	Not Started	2Q2014
Begin Installation	1Q2015	Not Started	
Complete SFPI Installation and Put Into Service	2Q2015	Not Started	

4 Changes to Compliance Method

There are no changes to the compliance method as documented in the Overall Integrated Plan (Reference 1).

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

Clinton Power Station, Unit 1, 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

The following tables provide a summary of the open items documented in the Overall Integrated Plan or the Draft Safety Evaluation (SE) and the status of each item.

Overall Integrated Plan Open Items		
OI#	**Description**	**Status**
1 (Ref.1)	**Instruments** Continuous level indication will be	Complete. The Westinghouse Spent Fuel Pool

	provided by a guided wave radar system, submersible pressure transducer, or other appropriate level sensing technology that will be determined during the detailed engineering phase of the project.	Level Indication instrumentation was selected consistent with the guidelines of NRC JLD-ISG-2012-03 and NEI 12-02. The instrument is a guided wave radar system. It provides the capability to reliably monitor the spent fuel pool water level under normal and anticipated adverse environmental conditions. The sensor input to the system is a guided wave radar probe. Using the principle of time domain reflectometry (TDR) to detect the SFP water level, microwave signals are pulsed down the cable probe and reflected back from the water surface. This is used to determine the level of the water in the pool. Each water level measurement channel includes a flexible stainless-steel sensor cable probe suspended in the spent fuel pool from a seismic Category 1 bracket attached to the operating deck or to a raised curb at the side of the pool. The cable probe extends to just above the top of the spent fuel racks. The sensor electronics are mounted in seismic and missile protected areas outside of the building housing the SFP to minimize exposure to elevated radiation and environmental conditions which could result from a postulated loss of water inventory in the pool. There is an interconnecting cable between the sensor cable probe and sensor electronics. The sensor electronics provide an instrument standard analog signal to a remote enclosure that will be installed in an accessible location. This enclosure contains the Uninterruptable Power Supply (UPS), backup battery, and water level display. The enclosure also includes the capability to connect an

		emergency or temporary external power source as part of the FLEX mitigating strategies. Attachment 1 shows the components and arrangement of the guided wave radar system spent fuel pool level sensor and electronics enclosure for one channel.
2 (RAI-2, Ref.4)	Final sensor locations and cable routings are not available at this time. This information will be developed during the detailed design process. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in November 2013 with design completion and 100% acceptance of the design in June 2014. The requested information will be provided in the August 2014, 6-month Integrated Plan update.	Not Started.
3 (RAI-3, Ref.4)	Mounting device total loading and attachments are not available at this time. This information will be developed during the detailed design process. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in November 2013 with design completion and 100% acceptance of the design in June 2014. The requested information will be provided in the August 2014, 6-month Integrated Plan update.	Not Started.
4 (RAI-4, Ref.4)	Equipment reliability qualification information is not available at this time. This information will be developed during the detailed design process. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design	Not Started.

	phase in November 2013 with design completion and 100% acceptance of the design in June 2014. The requested information will be provided in the August 2014, 6-month Integrated Plan update.	
5 (RAI-5, Ref.4)	Channel independence information is not available at this time. This information will be developed during the detailed design process. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in November 2013 with design completion and 100% acceptance of the design in June 2014. The requested information will be provided in the August 2014, 6-month Integrated Plan update.	Not Started.
6 (RAI-6, Ref.4)	Equipment total power supply configuration and characteristics are not available at this time. This information will be developed during the detailed design process. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in November 2013 with design completion and 100% acceptance of the design in June 2014. The requested information will be provided in the August 2014, 6-month Integrated Plan update.	Not Started.
7 (RAI-7, Ref.4)	Channel accuracy information is not available at this time. This information will be developed during the detailed design process. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in November 2013 with design completion and 100% acceptance of the design in June 2014. The requested information will be	Not Started.

	provided in the August 2014, 6-month Integrated Plan update.	
8 (RAI-8, Ref.4)	Equipment testing, calibration, functional checks and maintenance requirements are not available at this time. This information will be established during process and procedure development following the detailed design phase. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in November 2013 with design completion and 100% acceptance of the design in June 2014. Following the issue of the design, procedures will start being developed with a projected October 2014 completion date. The requested information will be provided in the February 2015, 6-month Integrated Plan update.	Not Started.
9 (RAI-9, Ref.4)	Channel display location information is not available at this time. This information will be developed during the detailed design process. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in November 2013 with design completion and 100% acceptance of the design in June 2014. The requested information will be provided in the August 2014, 6-month Integrated Plan update.	Not Started.
10 (RAI-10, Ref.4)	Procedural details are not available at this time. This information will be established during process and procedure development following the detailed design phase. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in	Not Started.

	November 2013 with design completion and 100% acceptance of the design in June 2014. Following the issue of the design, procedures will start being developed with a projected October 2014 completion date. The requested information will be provided in the February 2015, 6-month Integrated Plan update.	
11 (RAI-11, Ref.4)	Testing and calibration program requirements and compensatory actions are not available at this time. This information will be established during process and procedure development following the detailed design phase. The current plan for the SFPI design of the system based on the current Exelon Nuclear program schedule for Clinton Power Station is to begin the design phase in November 2013 with design completion and 100% acceptance of the design in June 2014. Following the issue of the design, procedures will start being developed with a projected October 2014 completion date. The requested information will be provided in the February 2015, 6-month Integrated Plan update.	Not Started.

Draft Safety Evaluation Open Items		
OI#	**Description**	**Status**
	None at this time.	

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. Exelon Generation Company, LLC, letter to USNRC, "Overall Integrated Plan 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 February 28, 2013 (RS-13- 029)
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. USNRC letter to Exelon Generation Company, LLC, Request for Additional Information Regarding Overall Integrated Plan for Reliable Spent Fuel Pool Instrumentation, dated June 7, 2013.
4. Exelon Generation Company, LLC, letter to USNRC, "Response to Request for Additional Information – Overall Integrated Plan in Response to Commission Order Modifying License Requirements for Reliable Spent Fuel Pool Instrumentation (Order No. EA-12-051)", dated July 3, 2013 (RS-13-157).

Attachment 1
Spent Fuel Pool Instrumentation System