



Order No. EA-12-051

RS-15-033

February 27, 2015

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

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Subject: 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)

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 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-13-035)
6. 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-13-128)
7. 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-14-025)
8. 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-14-203)

9. NRC letter to Exelon Generation Company, LLC, Quad Cities Nuclear Power Station, Units 1 and 2 – 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. MF1052 and MF1053), dated October 9, 2013

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.

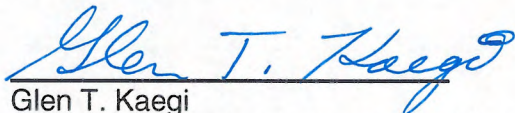
Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an overall integrated plan pursuant to Section IV, Condition C. Reference 2 endorses industry guidance document NEI 12-02, Revision 1 (Reference 3) with clarifications and exceptions identified in Reference 2. Reference 4 provided the EGC initial status report regarding reliable spent fuel pool instrumentation. Reference 5 provided the Quad Cities Nuclear Power Station, Units 1 and 2 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 6, 7, and 8 provided the first, second, and third six-month status reports, respectively, pursuant to Section IV, Condition C.2, of Reference 1 for Quad Cities Nuclear Power Station. The purpose of this letter is to provide the fourth 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 9.

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 27th day of February 2015.

Respectfully submitted,



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

Enclosure:

1. Quad Cities Nuclear Power Station, Units 1 and 2 Fourth 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 – Quad Cities Nuclear Power Station, Units 1 and 2
NRC Project Manager, NRR – Quad Cities Nuclear Power Station, Units 1 and 2
Ms. Jessica A. Kratchman, NRR/JLD/PMB, NRC
Mr. Stephen R. Monarque, NRR/JLD/JPMB, NRC
Mr. Robert L. Dennig, NRR/DSS/SCVB, NRC
Mr. Blake Purnell, NRR/DORL/LPL3-2, NRC
Mr. John P. Boska, NRR/JLD/JOMB, NRC
Illinois Emergency Management Agency - Division of Nuclear Safety

Enclosure

Quad Cities Nuclear Power Station, Units 1 and 2

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

(18 pages)

Quad Cities Nuclear Power Station, Units 1 and 2
 Fourth Six-Month Status Report for the Implementation of SFPLI
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Quad Cities Nuclear Power Station, Units 1 and 2

**Fourth 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

Quad Cities Nuclear Power Station, Units 1 and 2, 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 Third 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 Third six month status report (Reference 9), and are current as of the issuance of this report.

- 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 25, 2012	Complete	
Submit Overall Integrated Plan	February 28, 2013	Complete	
Submit Responses to RAIs	July 3, 2013	Complete	
Submit 6 Month Updates:			
Update 1	August 28, 2013	Complete	
Update 2	February 28, 2014	Complete	
Update 3	August 28, 2014	Complete	
Update 4	February 28, 2015	Complete with this submittal	
Provide Final Safety Evaluation	September 30, 2014	Complete	

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Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
(SE) Info			
Modifications:			
Conceptual Design	3Q2012	Complete	
Issue Exelon Fleet contract to procure SFPI Equipment	2Q2013	Complete	
Begin (Site Specific) Detailed Engineering Design	4Q2013	Complete	
Complete and Issue SFPI Modification Package	2Q2014	Complete	
Begin Installation	4Q2014	Complete	
Complete SFPI Installation and Put Into Service	1Q2015	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

Quad Cities Nuclear Power Station, Units 1 and 2 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(Ref. 1) or the Draft Safety Evaluation (SE)(Ref. 5) and the status of each item. All incomplete RAI questions from the Draft Safety Evaluation are included as Open Items in the Tables below.

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Overall Integrated Plan Open Items(OI)		
OI#	Description	Status
1 (Ref.1)	<u>Open Item:</u> Continuous level indication will be 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.	Complete. (Addressed in Reference 7)
2 (RAI-2, Ref.4)	<u>RAI Question:</u> Please provide a clearly labeled sketch or marked-up plant drawing of the plan view of the SFP area, depicting the SFP inside dimensions, the planned locations/placement of the primary and back-up SFP level sensor, and the proposed routing of the cables that will extend from the sensors toward the location of the read-out/display device.	Complete. (Addressed in Reference 9)
3 (RAI-3, Ref.4)	<u>RAI Question:</u> Please provide the following: a) The design criteria that will be used to estimate the total loading on the mounting device(s), including static weight loads and dynamic loads. Describe the methodology that will be used to estimate the total loading,	Complete (Addressed in Reference 9)

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	<p>inclusive of design basis maximum seismic loads and the hydrodynamic loads that could result from pool sloshing or other effects that could accompany such seismic forces.</p> <p>b) A description of the manner in which the level sensor (and stilling well, if appropriate) will be attached to the refueling floor and/or other support structures for each planned point of attachment of the probe assembly. Indicate in a schematic the portions of the level sensor that will serve as points of attachment for mechanical/mounting or electrical connections.</p> <p>c) A description of the manner by which the mechanical connections will attach the level instrument to permanent SFP structures so as to support the level sensor assembly.</p>	
<p>4 (RAI-4, Ref.4)</p>	<p><u>RAI Question:</u> Please provide the following:</p> <p>a) A description of the specific method or combination of methods you intend to apply to demonstrate the reliability of the permanently</p>	<p>Complete (Addressed in Reference 9)</p>

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	<p>installed equipment under beyond-design-basis ambient temperature, humidity, shock, vibration, and radiation conditions.</p> <p>b) A description of the testing and/or analyses that will be conducted to provide assurance that the equipment will perform reliably under the worst-case credible design basis loading at the location where the equipment will be mounted. Include a discussion of this seismic reliability demonstration as it applies to a) the level sensor mounted in the SFP area, and b) any control boxes, electronics, or read-out and re-transmitting devices that will be employed to convey the level information from the level sensor to the plant operators or emergency responders.</p> <p>c) A description of the specific method or combination of methods that will be used to confirm the reliability of the permanently installed equipment such that following a seismic event the instrument will maintain its required accuracy.</p>	
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<p>5 (RAI-5, Ref.4)</p>	<p><u>RAI Question:</u> Please provide the following:</p> <p>a) A description of how the two channels of the proposed level measurement system meet this requirement so that the potential for a common cause event to adversely affect both channels is minimized to the extent practicable.</p> <p>b) Further information on how each level measurement system, consisting of level sensor electronics, cabling, and readout devices will be designed and installed to address independence through the application and selection of independent power sources, the use of physical and spatial separation, independence of . signals sent to the location(s) of the readout devices, and the independence of the displays.</p>	<p>Complete (Addressed in Reference 9)</p>
<p>6 (RAI-6, Ref.4)</p>	<p><u>RAI Question:</u> Please provide the following:</p> <p>a) A description of the electrical ac power sources and capabilities for the primary and backup channels.</p>	<p>Complete (Addressed in Reference 9)</p>

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	<p>b) Please provide the results of the calculation depicting the battery backup duty cycle requirements demonstrating that its capacity is sufficient to maintain the level indication function until offsite resource availability is reasonably assured.</p>	
<p>7 (RAI-7, Ref.4)</p>	<p><u>RAI Question:</u> Please provide the following:</p> <p>a) An estimate of the expected instrument channel accuracy performance under both (a) normal SFP level conditions (approximately Level 1 or higher) and (b) at the – 16 beyond design-basis conditions (i.e., radiation, temperature, humidity, postseismic and post- shock conditions) that would be present if the SFP level were at the Level 2 and Level 3 datum points.</p> <p>b) A description of the methodology that will be used for determining the maximum allowed deviation from the instrument channel design accuracy that will be employed under normal operating conditions as an acceptance criterion for a calibration procedure to flag to operators and to</p>	<p>Complete (Addressed in Reference 9)</p>

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	<p>technicians that the channel requires adjustment to within the normal condition design accuracy.</p>	
<p>8 (RAI-8, Ref.4)</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>Started</p> <p>a) Westinghouse calibration procedure WNA-TP-04709-GEN and functional test procedure WNA-TP-04613-GEN describe the capabilities and provisions of SFPI periodic testing and calibration, including in-situ testing.</p> <p>b) The level displayed by the channels will be verified per the Quad Cities Station administrative and 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) Functional checks will be performed per Westinghouse functionality test procedure WNA-TP-04613-GEN at the Westinghouse recommended frequency. Calibration tests will be performed per Westinghouse calibration procedure WNA-TP-04709-GEN at the Westinghouse recommended frequency. In accordance with Quad Cities Station modification process, maintenance and operating surveillances will be developed, by March 16, 2015, for calibration, functional test, and channel verification procedures per Westinghouse recommendations to ensure reliable, accurate and continuous SFPI functionality.</p> <p>d) Quad Cities Station will develop, by March 16, 2015, 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>

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	<p>d) A description of what preventive maintenance tasks are required to be 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>9 (RAI-9, Ref.4)</p>	<p><u>RAI Question:</u> Please provide the following: a) The specific location for each of the primary and backup instrument channel displays. b) If the primary and backup display location is other than the main control room, provide justification for prompt accessibility to displays including primary and alternate route evaluation, habitability at display location(s), continual resource availability for personnel responsible to promptly read displays, and provisions for communications with decision makers for the various SFP drain down scenarios and external events. c) The reasons justifying why the locations selected enable the information from these instruments to be considered "promptly accessible" to various drain-down scenarios and</p>	<p>Replaced by Interim SE RAI #12 (Ref. 5).</p>

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	external events.							
10 (RAI-10, Ref.4)	<u>RAI Question:</u> Please provide a description of the standards, guidelines and/or criteria that will be utilized to develop procedures for inspection, maintenance, repair, operation, abnormal response, and administrative controls associated with the SFP level instrumentation, as well as storage and installation of portable instruments.	Replaced by Interim SE RAI #13 (Ref. 5).						
11 (RAI-11, Ref.4)	<u>RAI Question:</u> c) A description of what compensatory actions are planned in the event that one of the instrument channels cannot be restored to functional status within 90 days.	<p>Complete (see also Reference 9)</p> <p>Quad Cities Station revised the compensatory action plan requirements applicable to conditions where the instrument channel(s) are not restored to functional status within the specified time, as specified in the Note. The condition will be entered into the corrective action program in lieu of a report to PORC.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"># Channel(s) Out-of-Service</th> <th style="width: 25%;">Required Restoration Action</th> <th style="width: 50%;">Compensatory Action if Required Restoration Action not completed within Specified Time</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Restore channel to functional status within 90 days (or if channel restoration not expected within</td> <td>Immediately initiate action in accordance with Note below</td> </tr> </tbody> </table>	# Channel(s) Out-of-Service	Required Restoration Action	Compensatory Action if Required Restoration Action not completed within Specified Time	1	Restore channel to functional status within 90 days (or if channel restoration not expected within	Immediately initiate action in accordance with Note below
# Channel(s) Out-of-Service	Required Restoration Action	Compensatory Action if Required Restoration Action not completed within Specified Time						
1	Restore channel to functional status within 90 days (or if channel restoration not expected within	Immediately initiate action in accordance with Note below						

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			90 days, then proceed to Compensatory Action)	
		2	Initiate action within 24 hours to restore one channel to functional status and restore one channel to functional status within 72 hours	Immediately initiate action in accordance with Note below
		Note: Initiate an Issue Report to enter the condition into the Corrective Action Program. Identify the equipment out of service time is greater than the specified allowed out of service time, develop and implement an alternate method of monitoring, determine the cause of the non-functionality, and the plans and schedule for restoring the instrumentation channel(s) to functional status.		
12 (RAI-1, Ref. 4)	<p><u>RAI Question:</u> Please provide the following: a) For level L1, specify how the identified location represents the higher of the two points described in the NEI 12-02 guidance for this level. b) A clearly labeled sketch depicting the elevation view of the proposed typical mounting arrangement for the portions of instrument channel consisting of permanent measurement channel equipment (e.g., fixed level sensors and/or stilling wells, and mounting brackets). Indicate on this sketch the datum values representing L1, L2, and L3 as well as</p>	Complete (Addressed in Reference 4)		

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	<p>the top of the fuel. Indicate on this sketch the portion of the level sensor measurement range that is sensitive to measurement of the fuel pool level, with respect to the L1, L2, and L3 datum points.</p>	
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Draft Safety Evaluation Open Items (Ref. 5 & 6)		
OI#	Description	Status
<p>1 (RAI-1, Ref. 5, 6)</p>	<p><u>RAI Question:</u> Please provide the following: a) Describe the impact of the installation of the gates between the SFPs and transfer canal on the reliability of the SFP level instrumentation for each SFP. Describe the compensatory measures that would be taken to ensure reliable indication in each SFP when the gates are installed. b) Describe the elevation for the bottom of the gate opening or highest elevation of the bottom of the transfer canal to demonstrate that both the primary and backup SFP level instrument channels can measure the same Level 3 elevation in both SFPs.</p>	<p>Complete (Addressed in Reference 8)</p>

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<p style="text-align: center;">2</p> <p>(RAI-4, Ref. 5)</p>	<p><u>RAI Question:</u></p> <p>For RAI3(a) above, please provide the analyses used to verify the design criteria and methodology for seismic testing of the SFP instrumentation and the electronics units, including design basis maximum seismic loads and the hydrodynamic loads that could result from pool sloshing or other effects that could accompany such seismic forces.</p>	<p>Complete with this Submittal</p> <p>The following Westinghouse documents provide the analyses used to verify the design criteria and describe the methodology for seismic testing of the SFP instrumentation and electronics units, inclusive of design basis maximum seismic loads and hydrodynamic loads that could result from pool sloshing and other effects that could accompany such seismic forces:</p> <ul style="list-style-type: none"> a. CN-PEUS-14-5 – Pool-side Bracket Seismic Analysis b. LTR-SEE-II-13-47, WNA-TR-03149-GEN – Sloshing Analysis c. EQ-QR-269, WNA-TR-03149-GEN, EQ-TP-353 – Seismic Qualification of other components of SFPI <p>No equipment failures were noted as a result of seismic test runs. Seismic test data has been documented in the seismic test reports, referenced above.</p> <p>Quad Cities Station specific calculation QDC-1900-S-2109 – Seismic Qualification of SFPI Transmitter and Display boxes will address the seismic qualification of the display panel indicators. This analysis has been finalized.</p>
<p style="text-align: center;">3</p> <p>(RAI-5, Ref.5)</p>	<p><u>RAI Question:</u></p> <p>For each of the mounting attachments required to attach SFP level equipment to plant structures, please describe the design inputs and methodology used to qualify the structural integrity of the affected structures and equipment.</p>	<p>Complete with this submittal</p> <p>Quad Cities Station specific calculations QDC-1900-S-2108 – Evaluation of SFPI Sensor Mounting Detail Anchorage and QDC-1900-S-2109 and EC 393703 were performed. The design criteria used in this calculation and EC 393703 meets the requirements to withstand a SSE and will meet the Quad Cities Station safety related installation requirements. The methods used in the calculation follow IEEE Standard 344-2004 and IEEE Standard 323-2003 for seismic qualification of the instrument. This analysis has been finalized.</p>
<p style="text-align: center;">4</p> <p>(RAI-7, Ref. 5)</p>	<p><u>RAI Question:</u></p> <p>For RAI #6 above, please provide the results for the selected methods, tests and analyses utilized to demonstrate the qualification and reliability of the installed equipment in accordance with the Order requirements.</p>	<p>Complete with this submittal</p> <p>Below is a summary of the test conditions used by Westinghouse to qualify the SFPIS. Environmental Conditions for SFPIS Components installed in the Spent Fuel Pool Area at Quad Cities Station are bounded by below test conditions, except for radiation Total Integrated Dose (TID) 12” above top of fuel rack for beyond design basis conditions (BDB). The BDB radiation TID, 12” above top of fuel rack for Quad Cities is 4.E07 R γ, per calculation BYR13-051 – NEI 12-02 Spent Fuel Pool Doses. The BDB radiation value to which the Westinghouse equipment is</p>

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qualified to is 1.E07 R γ, per Section 5.1.1 of WNA-TR-03149-GEN. The radiation value of 4.E07 R γ is higher than 1.E07 R γ to which Westinghouse qualified the instrument. However, this value of 4.E07 R γ is applicable only when the water is at Level 3. At Level 2 the TID reduces to 2.E07 R γ and it further reduces to 8.E06 at Level 1 and above. With SFP water level at Level 3 the only components of SFPI that are exposed to high radiation are the stainless steel probe and the stainless steel anchor. The materials with which the probe and the anchor are manufactured are resistant to radiation effects. The stainless steel anchor and stainless steel probe can withstand 40-year dose. Westinghouse updated the design specification (WNA-DS-02957-GEN) and LTR-SFPIS-13-35, Revision 1 documentation to include the above technical justification.

Environmental Conditions for SFPIS Components in the Spent Fuel Pool Area

Level sensor probe, coax coupler and connector assembly, launch plate and pool side bracket assembly, and coax cable are designed and qualified to operate reliably in the below specified environmental conditions.

Parameter	Normal for Exelon Plants	BDB
Temperature	50-140°F	212°F
Pressure	Atmospheric	Atmospheric
Humidity	0-95% RH	100% (saturated steam)
Radiation TID γ (above pool)	1E03 Rads	1E07 Rads
Radiation TID γ (12" above top of fuel rack)	1E09 Rads (probe and weight only)	1E07 Rads

Environmental Conditions Outside of the Spent Fuel Pool Area

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The level sensor transmitter and bracket, electronics display enclosure and bracket are designed and qualified to operate reliably in the below specified environmental conditions.

Parameter	Normal	BDB	BDB (Level Sensor Electronics Only)
Temperature	50-120°F	140°F	140°F
Pressure	Atmospheric	Atmospheric	Atmospheric
Humidity	0-95% RH	0-95% (non-condensing)	0-95% (non-condensing)
Duration	3 days	3 days	3 days
Radiation TID γ	≤ 1E03 R γ	≤ 1E03 R γ	≤ 1E03 R γ

Thermal and Radiation Aging – organic components in SFP area

Westinghouse documents EQ-QR-269, EQ-TP-354, WNA-TR-03149-GEN provide thermal and radiation aging program details for the SFPI components. Westinghouse completed their thermal and radiation aging testing programs to qualify the SFPI components to 1.25 years. Exelon has reviewed the documents and found them acceptable.

Additionally, Westinghouse has completed their aging tests to age the system components to 10 years. The tests were completed satisfactorily for Byron Station's configuration and the final test reports were reviewed and found acceptable by Exelon for Quad Cities.

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5 (RAI-12, Ref. 5)	<p><u>RAI Question:</u></p> <p>Please provide the following:</p> <p>a) The specific location for each of the primary and backup instrument channel displays.</p> <p>b) If a display will be located somewhere other than the control room or alternate shutdown panel, please describe the evaluation used to validate that the display location can be accessed without unreasonable delay following a BDB event. Include the time available for personnel to access the display as credited in the evaluation, as well as the actual time (e.g., based on walk-throughs) that it will take for personnel to access the display. Additionally, please include a description of the radiological and environmental conditions on the paths personnel might take. Describe whether the display location remains habitable for radiological, heat and humidity, and other environmental conditions following a BDB event. Describe whether personnel are continuously stationed at the display or monitor the display periodically.</p>	<p>Complete</p> <p>(Addressed in Reference 9)</p>
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6 (RAI-13, Ref. 5)	<p><u>RAI Question:</u></p> <p>Please provide a list of the procedures addressing operation (both normal and abnormal response), calibration, test, maintenance, and inspection procedures that will be developed for use of the spent SFP instrumentation. Please provide a brief description of the specific technical objectives to be achieved within each procedure.</p>	<p>Complete</p> <p>(Addressed in Reference 9)</p>
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7 Potential Draft Safety Evaluation Impacts(Ref. 5)

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- 035)
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7. First Six-Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation, dated August 28, 2013 (RS-13-128).
8. Second Six-Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation, dated February 28, 2014 (RS-14-025).
9. Third Six-Month Status Report for the Implementation of Order EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation, dated August 28, 2014 (RS-14-203).