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NRC Order No. EA-12-051

RS-15-062

February 20, 2015

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
11555 Rockville Pike
Rockville, MD 20852

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

Subject: 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)

Reference: (1) NRC Order Number EA-12-051, Order Modifying Licenses with Regard to Reliable Spent Fuel Pool Instrumentation, dated March 12, 2012 (ML12054A679)

On March 12, 2012, the Nuclear Regulatory Commission (NRC) issued Order EA-12-051 (Reference 1) to Constellation Energy Nuclear Group, LLC (CENG) for R.E. Ginna Nuclear Power Plant, LLC (Ginna). Reference (1) requires submission of a status report at six-month intervals following submittal of the overall integrated plan. Attachment (1) provides the fourth Six-Month Status Report for Ginna pursuant to Section IV, Condition C.2, of Reference (1). This report updates the milestone accomplishments since the submittal of the last status report, including any changes to the compliance method, schedule, or need for relief and the basis, if any.

There are no regulatory commitments contained in this letter.

If there are any questions regarding this letter, please contact Thomas Harding Jr. at 585-771-5219.

A001
NRR

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 20^{h} day of February, 2015.

Respectfully,

Mary G. Korsnick

Mary G. Korsnick

MGK/STD

Attachment (1) Six-Month Status Report (February 2015) for Reliable Spent Fuel Pool Instrumentation

cc: Regional Administrator, Region I, USNRC
NRC Project Manager, NRR – R. E. Ginna Nuclear Power Plant
NRC Senior Resident Inspector – R. E. Ginna Nuclear Power Plant
Director, Office of Nuclear Reactor Regulation

ATTACHMENT (1)

SIX-MONTH STATUS REPORT (FEBRUARY 2015)

FOR RELIABLE SPENT FUEL POOL INSTRUMENTATION

R. E. GINNA NUCLEAR POWER PLANT, LLC
February 20, 2015

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 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 3), and are current as of February 1, 2015.

- The SFPLI has been installed and modification turnover is complete.

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 with this submittal	
Provide Final Safety Evaluation (SE) Information	September 30, 2014	Complete with this submittal	
Update 5	August 28, 2015	Not Started	
Modifications:			

Milestone	Target Completion Date	Activity Status	Revised Target Completion Date
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 August 2014 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.

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)
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. The analysis 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 sloshing effects were performed by the SFP level instrumentation vendor and are summarized below. These analyses show that the SFP instrumentation design configuration will be maintained during and following the maximum seismic ground motion considered in the design of the SFP structure. Seismic Qualification A seismic shake test was performed by AREVA to the requirements of IEEE 344-2004 (Reference 6) for elements of the VEGAPULS 62 ER through air radar to levels anticipated to envelop most if not all plants in the US. The equipment qualified included the VEGAPULS

	seismic ground motion considered in the design of the SFP structure.	62 ER sensor, PLICSCOM indicating and adjustment module, VEGADIS 62 display, Power Control Panel, rotatable horn waveguide assembly, waveguide piping including standard and repair flanges, and pool end and sensor end mounting brackets. The brackets are considered to be the standard design. Modifications to the standard design for specific applications are qualified by analysis. The rotatable horn waveguide assembly can be provided in shorter cantilever lengths than the tested assembly. The shorter cantilever lengths are inherently more rigid than the tested lengths. Therefore, the seismic test results are considered to be also applicable to the shorter cantilever lengths. The test results described above are considered to also be applicable to the VEGADIS 61indicating and adjustment module based on the physical similarity of its housing and electronics module to the tested VEGADIS 62 display. In the test of the VEGAPULS 62 ER, the seismic required response spectra (RRS) used for the testing was in accordance with the RRS curve from EPRI TR-107330 (Reference 7) at 5% damping. This RRS is intended to envelop not only the seismic level for items mounted to building structure, but also the much higher levels that can be experienced for items mounted in or on cabinets due to the additional seismic amplification from cabinet resonances. The waveguide piping between the horn end section and the sensor is supported by mounts provided and qualified by the customer. The seismic test configuration had 10'-7½" between supports for the waveguide piping with standard flanges and 6'- 3½" between supports for the waveguide piping with repair flanges. These distances represent the maximum allowable distances between supports to maintain seismic qualification. Flanges were located both centrally between supports and near one support to test both conditions. Therefore, flanges may be located at any point between the supports. AREVA calculation 32-9208751 (Reference 8) qualifies a generic support configuration for the horn and transmitter assembly of the AREVA spent fuel pool level monitoring system and includes an appendix that qualifies the baseplate and anchor bolts for the horn assembly support for Ginna, which differs from the generic support qualified in the main body of the calculation.

		Ginna calculation DE-ME-13-015 (Reference 9), Assumption 5.8 documents that the Vendor has qualified their standard bolted flange design seismically to a maximum span of 10'-7½". Ginna's design includes a maximum span of 14'-1". This is acceptable based on the low stress levels calculated within this design analysis and the significant difference of the response spectra for the Ginna Auxiliary Building 315' elevation (5g peak) compared to the EPRI TR-107330 response spectra (14g peak) used to qualify the waveguide components, a factor of safety (FS) of 2.8. Increasing the span by 33% is expected to increase the moment, and resulting stress levels, by a factor of 1.77, based on the beam equation for a uniform loading condition. Additionally, an envelope of the response spectra for the 271' and 315' elevations in the Auxiliary Building is conservatively used. The response spectra for the 278' elevation is expected to be much closer to the 271' response spectra (1.2g peak, FS of 11.7), as the local ground elevation is 271' and SFP concrete structure extends from the 278' elevation down to bedrock. The significant increase in accelerations from the 271' to the 315' elevation is due to the transition of the structure from below grade concrete structure to above grade steel framed structure. Additional support is provided by straps which are not credited for the seismic qualification that are installed on the protective steel structures at the transfer slot. Although not credited, these straps will provide additional support for the waveguide pipe. Confirmatory analysis was conducted to verify these straps would not result in any elevated stress conditions. A small portion of the 315' response spectra curve is greater than the curve of the generic EPRI spectra; however, this is at very low frequencies (< 2 Hz). Based on the models in DA-ME-13-015, Attachments B & C, the 1st mode of the actual configuration of the waveguide piping is outside of this range. Mounting of the SFP level transmitter wave guide at Ginna is addressed in DA ME 13-015. Per DA-ME-13-015 piping shall be qualified as seismic category I in accordance with EWR 2512 (Reference 10) and the pipe supports shall be qualified to loading conditions which bound those specified in EWR 2512. Protective steel is not credited for the seismic qualification of the wave

		guide pipe and shall be qualified for seismic II/I conditions. ECP-13-000547 (Reference 11) Form-015-7B-01 establishes installation criteria that all equipment installed at the SFP shall be mounted to retain its design configuration during and following the maximum seismic ground motion considered in the SFP structure (Mounting). All equipment installed shall not impact the operation of Seismic Category I equipment during or after a seismic event. All equipment installed as part of this modification is qualified per IEEE 344-2004 (Reference 12) against the maximum seismic response spectra that envelopes the maximum seismic ground motion for the SSE. The Auxiliary and Standby Auxiliary Feedwater (SAFW) Buildings are Seismic Category I areas. All electrical conduit supports are installed per GC-76.9 (Reference 13), per the standard Impell conduit support drawing series. The Control Panel mounting assembly is mounted to unistrut using the hardware specified in drawing 02-9209819D (Reference 13). <u>Seismic and Hydrodynamic Forces</u> An analysis of the combined maximum seismic and hydrodynamic forces on the cantilevered portion of the assembly exposed to the potential sloshing effects was performed by AREVA in calculation 32-9221237 (Reference 14). The waveguide Type "A" support and horn end assembly are evaluated for deadweight, seismic and sloshing loads. The support is qualified while also identifying a maximum sloshing load that can be withstood by the horn end assembly and waveguide support configuration. In addition, conservative design inputs and/or maximum dimensions are used to optimize the design such that the support design can be used in various nuclear power plants. Calculation 32-9221237 is carried out finding a maximum sloshing pressure value that the horn end assembly and support can withstand. The sloshing wave is assumed to be to the top of the horn end, therefore it is applied to the entire projected surface area of the horn end. Calculation 32-9221237, Appendix A, includes qualification of the seismic and shock loading of the glass horn cover which is affixed to the horn end of the spent fuel pool level instrumentation system. The cover

		is secured to the horn end assembly with the use of silicone elastomer. The qualification demonstrated that the horn cover can withstand very conservative loads with a high factor of safety. The waveguide Type "A" support and horn end assembly with a horn cover are qualified provided the sloshing loads calculated are equal to or below 3.37 psi and within allowable parameter limits. A sloshing force of 3.37 psi (does not include Dynamic Load Factor (DLF)) will result in a maximum I.R. = 1.0 for the shear check on the waveguide pipe. Sloshing loads less than this are acceptable by comparison; site specific loading will be addressed by plant. All other interaction ratios for the support are less than 1.0. The Type "A" standard waveguide support and horn end assembly are qualified using the standard Hilti design guide for Kwik Bolt 3's as a demonstration of the support system's feasibility. The final anchorage design must be qualified using the site specific requirements. The Ginna owner's acceptance review documents that the Ginna specific horn assembly is shorter, therefore more rigid and stronger than Type "A" qualified within this calculation. Also, the smaller assembly will result in less deadweight, seismic and hydrodynamic loading on the waveguide flange, flange bolts and horn assembly support. Calculation 32-9221237 Attachment G-1 independently checks the qualification of the horn assembly with a sloshing load of 2 psi. The Ginna specific support for the horn assembly is also unique as analyzed in 32-9208751 (Reference 8). The support loads evaluated by this analysis are bounded by those evaluated in 32-9208751 and length of the channel used in this analysis is also bounding. Therefore, the support is qualified for deadweight, seismic and hydrodynamic loading. As both the horn and support are shown to be rigid, it is appropriate to use ZPA accelerations. The AREVA ZPA accelerations (1g vertical and 2g horizontal) bounds the actual ZPA anticipated at the Ginna Station Spent Fuel Pool, by greater than 2 times in any given direction (see DA-ME-13-015 (Reference 9) for applicable accelerations). The qualified sloshing load is 3.37 psi. This load bounds the maximum hydrodynamic loading anticipated at Ginna of 1.9 psi or less. Two methods were used to calculate

		the sloshing loads. The first concluded the sloshing load at <1 psi, but conservatively did a check of the horn and support using 2 psi, (Attachment G-1) and the second applied an alternate conservative method bounded the sloshing load at 1.9 psi (Calculation 32-9221237 Attachment G-2).
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)
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)
5 (RAI-5, Ref. 5)	RAI Question: **Please provide information indicating (a) whether the 80^0C rating for the sensor**	Complete. The postulated temperature and humidity in the spent fuel pool area that results from a boiling pool is 100^0C (212^0F) with saturated steam. The electronics in the SFP LI sensor are rated for a maximum continuous duty

	electronics is a continuous duty rating; and, (b) the maximum 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.	temperature of 80°C (176°F) on the condition that the process temperature (that which the flange connection is in contact with) is no greater than 130°C (266°F). The sensor must be located away from the spent fuel pool in an area where the temperature is at or below the rated temperature. (Reference 15) The sensor has been tested in accordance with IEC 60068-2-30 (Reference 16) which varies the temperature from room temperature to elevated temperature at high humidity conditions, to verify that the test item withstands condensation that can occur due to the changing conditions. The sensor has been tested to EN 60529:2000 (Reference 17) to achieve the rating IP66/IP68, which signifies totally dust tight housing, protection against string water jets and waves, and protection against prolonged effects of immersion under 0.2 bar pressure. The SFP LI sensors are located in the Auxiliary Building away from and at a lower elevation than the SFP operating floor. An analysis of the Auxiliary Building environment, under the assumed worsts case conditions with no power available to run HVAC systems (CALC-2014-0006 (Reference 18)), shows that the SFP LI sensors will be subject to a maximum of 126.1°F and a maximum wet bulb globe temperature of 127.5°F. The process temperature at the flange connection is no greater than 212°F. The SFP LI power control panel internal components are rated for a maximum temperature of at least 70°C (158°F). Allowing for 5°C (9°F) heat rise in the panel, the overall panel maximum ambient temperature for operation is 65°C (149°F). The power control panel enclosure is rated NEMA 4X and provides protection to the internal components from the effects of high humidity environments. (Reference 15) The power control panel is located in the Standby Auxiliary Feedwater Building (SAFWB) with a maximum temperature of 120°F for normal and accident conditions. Humidity conditions in the SAFW Building will be bound by outside air humidity. Based on the above SFP LI design/performance criteria and the temperature and humidity environments at the SFP LI locations, the sensor and power supply electronics are capable of continuously performing their required functions under the expected temperature and

		humidity conditions.
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. The postulated temperature and humidity in the spent fuel pool area that results from a boiling pool is 100°C (212°F) with saturated steam (100% relative humidity). The electronics in the SFP LI sensor are rated for a maximum continuous duty temperature of 80°C (176°F) on the condition that the process temperature (that which the flange connection is in contact with) is no greater than 130°C (266°F). The sensor must be located away from the spent fuel pool in an area where the temperature is at or below the rated temperature. (Reference 15) The sensor has been tested in accordance with IEC 60068-2-30 (Reference 16) which varies the temperature from room temperature to elevated temperature at high humidity conditions, to verify that the test item withstands condensation that can occur due to the changing conditions. The sensor has been tested to EN 60529:2000 (Reference 17) to achieve the rating IP66/IP68, which signifies totally dust tight housing, protection against string water jets and waves, and protection against prolonged effects of immersion under 0.2 bar pressure. The SFP LI sensors are located in the Auxiliary Building away from and at a lower elevation than the SFP operating floor. An analysis of the Auxiliary Building environment, under the assumed worsts case conditions with no power available to run HVAC systems (CALC-2014-0006 (Reference 18)), shows that the SFP LI sensors will be subject to a maximum of 126.1°F and a maximum wet bulb globe temperature of 127.5°F. The process temperature at the flange connection is no greater than 212°F. The SFP LI power control panel internal components are rated for a maximum temperature of at least 70°C (158°F). Allowing for 5°C (9°F) heat rise in the panel, the overall panel maximum ambient temperature for operation is 65°C (149°F). The power control panel enclosure is rated NEMA 4X and provides protection to the internal components from the effects of high humidity environments. (Reference 15) The power control panel is located in the Standby Auxiliary Feedwater Building (SAFWB) with a maximum

		temperature of 120°F for normal and accident conditions. Humidity conditions in the SAFW Building will be bound by outside air humidity. Based on the above SFP LI design/performance criteria and the temperature and humidity environments at the SFP LI locations, the sensor and power supply electronics are capable of continuously performing their required functions under the expected temperature and humidity conditions.
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)
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**	Complete. (See the 2/2014 OIP Update)

	vibration.	
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)
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 power and control panel under shock and vibration conditions.**	Complete. (See the 2/2014 OIP Update)
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)
12 (RAI-12,	RAI Question:	Complete.

Ref. 5)	**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.**	(See the 2/2014 OIP Update)
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)
14 (RAI-14, Ref. 5)	RAI Question: **Please provide the analysis verifying 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.**	Complete. (Addressed in Reference 3)
15 (RAI-15, Ref. 5)	RAI Question: **Please describe the evaluation used to validate that the display locations can be accessed without unreasonable delay**	Complete. (Addressed in Reference 3)

	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 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. (Addressed in Reference 3)

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, 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**	Complete. (Addressed in Reference 3)

	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. (Addressed in Reference 3)

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, "August 2014 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 (FLL-14-032)
4. Memorandum from C. A. Hunt (USNRC) to M. A. Mitchell (USNRC), "Summary of the November 26, 2013 Public Meeting to Discuss Industry Responses to Staff Interim Evaluations for Spent Fuel Pool Instrumentation," dated December 26, 2013
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

6. IEEE Standard 344-2004, "Recommended Practice for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations"
7. EPRI TR-107330, "Generic Requirements Specification for Qualifying a Commercially Available PLC for Safety-Related Applications in Nuclear Power Plants"
8. AREVA Document No 32-9208751, :AREVA Spent Fuel Pool Level Monitoring – Horn and Transmitter Support," Revision 002 (Proprietary)
9. DA-ME-13-015, "Seismic Evaluation for SFP Level Indication Radar Guide Pipe and Supports," Revision 000
10. EWR 2512, "Design Criteria, Ginna Station Seismic Upgrade Program," Revision 5
11. ECP-13-000547, "Spent Fuel Pool Level Indication Modifications for Fukushima Response," Revision 0000
12. GC-76.9, "Installation and Inspection of Electrical Equipment, Raceway and Electrical Supports," Revision 00503
13. Drawing 02-9209819D, "Vega Power Control Panel Mounting Assembly (SFP Level Instruments)," Revision 001 (Proprietary)
14. AREVA Document No. 32-9221237, "Qualification for a Waveguide Type "A" Support and Horn End Assembly for AREVA Spent Fuel Pool Level Monitoring Instrumentation," Revision 003 (Proprietary)
15. AREVA Document No. 51-9202556, "Qualification Analysis of VEGAPULS 62 ER Through Air Radar," Revision 005 (Proprietary)
16. IEC 60068-2-30, "Environmental Testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12h + 12h cycle)"
17. EN 60529:2000, "Degrees of Protection Provided by Enclosure (IP Code)"
18. CALC-2014-0006, "Auxiliary Building Environmental Conditions During ELAP," Rev. 0