Dominion Nuclear Connecticut, Inc.
5000 Dominion Boulevard, Glen Allen, VA 23060
Web Address: www.dom.com

Dominion®

January 6, 2015

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

Serial No.: 14-390A
NLOS/ETS: R0
Docket No.: 50-423
License No.: NPF-49

DOMINION NUCLEAR CONNECTICUT, INC.
MILLSTONE POWER STATION UNIT 3
STATUS OF REQUIRED ACTIONS FOR EA-12-051
ORDER MODIFYING LICENSES WITH REGARD TO
RELIABLE SPENT FUEL POOL INSTRUMENTATION

On March 28, 2012 the NRC issued EA-12-051, "Order Modifying Licenses With Regard To Reliable Spent Fuel Pool Instrumentation," which required the installation of a reliable indication of the water level in associated spent fuel storage pools capable of supporting identification of the following pool water level conditions by trained personnel: (1) level that is adequate to support operation of the normal fuel pool cooling system, (2) level that is adequate to provide substantial radiation shielding for a person standing on the spent fuel pool operating deck, and (3) level where fuel remains covered and actions to implement make-up water addition should no longer be deferred. Condition C.3 of the Order required licensees to report to the Commission when full compliance with the requirements of the Order is achieved.

This letter provides notification that Dominion has completed the requirements of Order EA-12-051 and Millstone Power Station Unit 3 is in full compliance with the Order. The attachments to this letter provide: 1) a summary of how the compliance requirements were met and 2) the response to SFPLI RAIs and Safety Evaluation Review Item 11 for Order EA-12-051.

Should you have any questions or require additional information, please contact Margaret Earle at (804) 273-2768.

Respectfully,

Mark Sartain
Vice President – Nuclear Engineering

Vicki L. Hull
NOTARY PUBLIC
Commonwealth of Virginia
Reg. # 140542
My Commission Expires May 31, 2018

Commitment contained in this letter: None

COMMONWEALTH OF VIRGINIA)
)
COUNTY OF HENRICO)

The foregoing document was acknowledged before me, in and for the County and Commonwealth aforesaid, today by Mr. Mark D. Sartain, who is Vice President – Nuclear Engineering, of Dominion Nuclear Connecticut, Inc. He has affirmed before me that he is duly authorized to execute and file the foregoing document in behalf of that company, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged before me this 6TH day of JANUARY, 2015.

My Commission Expires: MAY 31, 2018.

Vicki L. Hull
Notary Public

A001
NRR

Attachments: 1. Order EA-12-051 Compliance Requirements Summary
2. Response to SPFI RAIs and Safety Evaluation Review Item 11

Commitment contained in this letter: None

cc: U.S. Nuclear Regulatory Commission
Region I
2100 Renaissance Blvd
King of Prussia, PA 19406-2713

Mr. Mohan Thadani
NRC Senior Project Manager - Millstone
U.S. Nuclear Regulatory Commission
One White Flint North
Mail Stop 08 G-9A
11555 Rockville Pike
Rockville, MD 20852-2738

Mrs. Lisa M. Regner
U.S. Nuclear Regulatory Commission
One White Flint North
Mail Stop O11 F1
11555 Rockville Pike
Rockville, MD 20852-2738

Mr. Blake A. Purnell
U.S. Nuclear Regulatory Commission
One White Flint North
Mail Stop O12 D20
11555 Rockville Pike
Rockville, MD 20852-2738

Mr. Steven R. Jones
U.S. Nuclear Regulatory Commission
One White Flint North
Mail Stop O10 A1
11555 Rockville Pike
Rockville, MD 20852-2738

NRC Senior Resident Inspector
Millstone Power Station

Attachment 1

Order EA-12-051 Compliance Requirements Summary

Dominion Nuclear Connecticut, Inc.
Millstone Power Station Unit 3

Millstone Power Station Unit 3
Order EA-12-051 Compliance Requirements Summary

BACKGROUND

Millstone Power Station Unit 3 (MPS3) developed an Overall Integrated Plan (OIP) (Reference 1), documenting how the requirements for reliable spent fuel pool level instrumentation (SFPLI) would be achieved, in response to Order EA-12-051, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," (Reference 2). The MPS3 OIP was submitted to the NRC on February 28, 2013 and was supplemented by Six-Month Status Reports (References 3, 4, and 5), in accordance with Order EA-12-051 (the Order). By letter dated November 1, 2013, the NRC provided its Interim Staff Evaluation and Request for Additional Information Regarding Order EA-12-051 (Reference 6).

MPS3 has installed two independent spent fuel pool (SFP) level measurement channels supplied and qualified by Westinghouse in response to Reference 2. On November 13, 2014 MPS3 achieved full compliance with Order EA-12-051, prior to the end of the second refueling outage following submittal of the OIP.

Completion of the elements identified below for MPS3, as well as References 1, 3, 4, and 5, document full compliance with Order EA-12-051 for MPS3.

The design features identified in Attachment 2 of Reference 2 are summarized in Section 6.4 of ETE-CPR-2012-0008, Revision 4. This document has previously been provided to the NRC and is available for their review.

COMPLIANCE SUMMARY

NRC RAI, ISE AND AUDIT ITEMS – COMPLETE

During the ongoing audit process (Reference 7), Dominion Nuclear Connecticut Inc. (DNC) provided responses for the following items for MPS3:

- Request for Additional Information (RAI)
- Interim Staff Evaluation (ISE) Open Items
- ISE Confirmatory Items
- Licensee Identified Open Items
- Audit Questions
- Safety Evaluation Review Items

"The Millstone Station, Units 2 and 3 - 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," (Reference 8) delineated the items reviewed during the Millstone onsite audit. Reference 8 identified one additional audit item related to SFPI for MPS3, specified as Safety Evaluation Review Item 11, which was added following the audit that required supplemental information.

As requested by the NRC, DNC's responses, or references to the source document for the responses, to the SFPLI RAIs and Safety Evaluation Review Item 11 (SE 11) for MPS3 are provided in Attachment 2 of this letter. It is DNC's position that no further actions related to the SFPLI RAIs or SE 11 for MPS3 are required.

MILESTONE SCHEDULE – ITEMS COMPLETE

Millstone Unit 3 Milestone	Completion Date
Submit Overall Integrated Plan	February 2013
Commence Engineering and Design	March 2013
Complete Engineering and Design	June 2014
Complete Procurement of SFP Instruments	August 2014
Commence Installation of SFP Instruments	June 2014
Level Measurement System Functional	November 2014

IDENTIFICATION OF LEVELS OF REQUIRED MONITORING - COMPLETE

MPS3 has identified the three required levels for monitoring SFP level in compliance with Order EA-12-051. These levels have been integrated into the site processes for monitoring level during beyond design basis (BDB) events and responding to loss of SFP inventory.

INSTRUMENT DESIGN FEATURES - COMPLETE

The design of the SFP level measurement instrumentation system installed at MPS3 complies with the requirements specified in Order EA-12-051 and described in NEI 12-02 "Industry Guidance for Compliance with NRC Order EA-12-051." The instrumentation system has been installed in accordance with the station design control process.

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

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

PROGRAM FEATURES - COMPLETE

Training of personnel performing maintenance functions including calibration and surveillance associated with the SFP level instrument channels at MPS3 has been completed. Additional or continuing training will be determined in accordance with an accepted training process as recommended in NEI 12-02, Section 4.1.

Operating procedures, for use of the MPS3 SFP level instrument channels have been developed, and integrated with existing procedures. These procedures have been verified and are available for use in accordance with the site procedure control program.

Westinghouse guidelines (procedures and manuals) are currently available for use in maintenance, calibration and testing of the MPS3 SFP level instrument channels. Site specific maintenance, calibration and testing procedures are being developed in accordance with the design control program, based on these vendor guidelines.

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

REFERENCES

The following references support the MPS3 SFPLI Compliance Summary:

1. Millstone Power Station, Units 3 Overall Integrated Plan with regard to Reliable Spent Fuel Pool Implementation," February 28, 2013 (ML13064A265).
2. NRC Order Number EA-12-051, "Issuance of Order to Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," March 12, 2012.
3. Dominion Nuclear Connecticut, Inc., 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 23, 2013 (Serial No. 12-165D). (ML13242A011).
4. Dominion Nuclear Connecticut, Inc., 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 (Serial No. 12-165E). (ML14069A013).
5. Dominion Nuclear Connecticut, Inc., 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 (Serial No. 14-390). (ML14245A401).
6. Millstone Power Station, Units 2 and 3: NRC Interim Staff Evaluation and Request for Additional Information Regarding to Overall Integrated Plan for Implementation of Order EA-12-051, Reliable Spent Fuel Pool Instrumentation, dated October 29, 2013 (ML13291A115).
7. NRC letter to All Operating Reactor Licensees and Holders of Construction Permits, "Nuclear Regulatory Commission Audits of Licensee Responses to Mitigation Strategies Order EA-12-049," dated August 28, 2013 (ML13234A503).
8. Millstone Power Station, Units 2 and 3 - Report for the Onsite Audit Regarding Implementation of Mitigating Strategies and Reliable Spent Fuel Instrumentation Related to Orders EA-12-049 and EA-12-051 (ML14275A017).

Attachment 2

Order EA-12-051 Response to SFPI RAIs and Safety Evaluation Review Item 11

Dominion Nuclear Connecticut, Inc.
Millstone Power Station Unit 3

Order EA-12-051 Response to SFPI RAIs and Safety Evaluation Review Item 11

Spent Fuel Pool Indication (SPFI) RAIs 2, 7, 8, 9, 10, 11, 13, and 14

Dominion Response:

On October 29, 2013, Dominion Nuclear Connecticut, Inc. (DNC) received an Interim Staff Evaluation (ISE) regarding the Millstone Power Station Units 2 and 3 SFP Level Instrumentation system Overall Integrated Plan (OIP) in a letter from Mr. James Kim to Mr. David Heacock (Reference 1). Responses to RAIs 2, 7, 8, 9, 10, 11, 13, and 14 contained in the ISE were provided to the NRC in Attachment 3 to the second Six-Month Status Report dated February 28, 2014 (Reference 2).

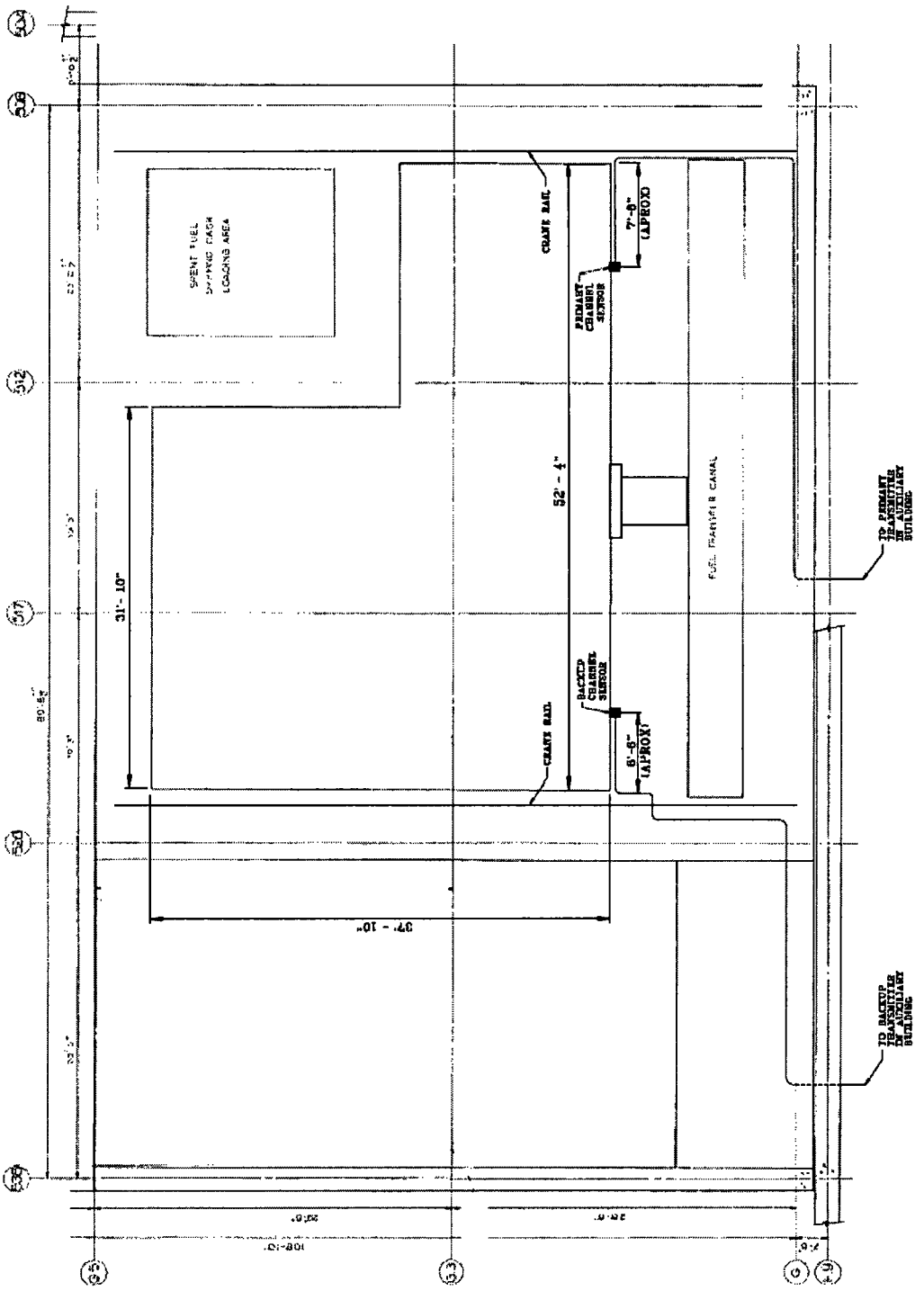
Spent Fuel Pool Indication (SPFI) RAIs 1, 3, 4, 5, 6, 12, 15, 16, and 17

SFPI RAI No. 1

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 these sensors toward the location of the read-out/display device.

Dominion Response:

A plan view sketch of the Millstone Power Station Unit 3 (MPS3) Spent Fuel Pool (SFP) area is provided in the figure below. The sketch depicts the MPS3 SFP inside dimensions, the planned locations/placement of the primary and back-up channel sensors, and the proposed cable routing that extend the sensors toward the location of the electronics.



Millstone Power Station Unit 3 SFP Level Instrumentation Plan View
(EL. 52'-4")

SFPI RAI No. 3

For each of the mounting attachments required to attach SFP Level equipment to plant structures, please describe the design inputs, and the methodology that was used to qualify the structural integrity of the affected structures/equipment.

Dominion Response:

The level sensing probe is attached to the mounting bracket, which is anchored to the SFP structure at the concrete curb using concrete expansion anchors. The anchorage to the Seismic Category I SFP structure concrete curb is designed to meet the requirements of the Millstone Power Station (MPS) design and licensing basis for Seismic Category I components including seismic loads, static weight loads and hydrodynamic loads.

Each of the additional SFP Level Instrumentation System components required to be mounted/anchored are attached to plant structures consistent with the MPS design and licensing basis for Seismic Category I components, and include consideration of design basis maximum seismic loads and static weight loads.

SFPI RAI No. 4

Please provide analysis of the maximum expected radiological conditions (dose rate and total integrated dose) to which the equipment (including transmitters, control boxes, and display panels) will be exposed. Also, please provide documentation indicating how it was determined that the electronics for the SFP level instrumentation is capable of withstanding a total integrated dose of $1X10^4$ Rads. Please discuss the time period over which the analyzed total integrated dose was applied.

Dominion Response:

A radiation dose rate analysis was performed to support the radiological requirements defined by NEI 12-02 (Reference 3) for the MPS3 SFP and Auxiliary Building areas and the results are documented in Calculation CALC-RA-0046, Rev. 0, "Radiological Evaluation following a Beyond Design Basis MPS3 SFP Draindown for NEI 12-02," (Reference 4). The results of the analysis provided dose rates and integrated doses for 7-days post-event conservatively assuming the SFP water level at one foot above the fuel rack. The analysis also provided dose rates and integrated doses for 40-year normal operation. In the SFP area where the coupler and coaxial cable are located, the dose rate analysis resulted in a 7-day integrated dose of $4.6x10^6$ Rads and a 40-year integrated dose of 880 Rads. In the Auxiliary Building where the SFP Level Instrumentation System sensor transmitters and displays cabinets are located, the dose rate analysis resulted in a 7-day integrated dose of 12 Rads and a 40-year integrated dose of 880 Rads. These values were compared to the design criteria of 10^7 Rads for the SFP area and 10^3 Rads for the Auxiliary Building area and formed

the basis for demonstrating reliability of the permanently installed SFP Level Instrumentation System. Calculation CALC-RA-0046, Rev. 0 has previously been provided to the NRC staff and is available for their review.

Radiation test results supplied from Westinghouse in qualification summary test report EQ-QR-269, Rev. 1. "Design Verification Testing Summary Report for the Spent Fuel Pool Instrumentation System," (Reference 5) have qualified the coupler and coaxial connecting cable to greater than 10^7 Rads demonstrating reliability of this permanently installed equipment located in the MPS3 SFP. Westinghouse document EQ-QR-269 is available for review upon request.

The SFP level instrumentation electronics utilize Commercial-off-the-Shelf (COTS) components containing Complementary Metal Oxide Semiconductor (CMOS) devices which have been found to be capable of withstanding ionizing dose radiation levels of up to 10^3 Rads as described in EPRI 1021067, "Nuclear Power Plant Equipment Qualification Reference Manual" Rev 1, and discussed in RG 1.209, "Guidelines for Environmental Qualification of Safety-Related Computer Based Instrumentation and Control Systems in Nuclear Power Plants." Comparing the calculated integrated dose for both the short-term post Beyond Design Basis (BDB) event and the long-term normal operating conditions to the industry accepted limit form the basis to demonstrate reliability of the permanently installed sensor transmitters and display cabinet's equipment located within the MPS3 Auxiliary Buildings under post-BDB event radiological conditions.

SFPI RAI No. 5

Please provide information indicating (a) what are the temperature ratings and whether the temperature ratings for the system electronics (including transmitters, control boxes, and display panels) are continuous duty ratings; and, (b) what will be the maximum expected ambient temperature in the rooms in which the system electronics will be located under BDB conditions in which there are no AC power available to run Heating Ventilation and Air Conditioning (HVAC) systems?

Dominion Response:

a) The temperature rating for the electronic equipment located in the MPS3 Auxiliary Building (transmitter, control box, UPS, display) is 120°F based on a continuous duty rating and 140°F under abnormal conditions. The basis for the temperature ratings is provided in Section 4.5 of Westinghouse design specification WNA-DS-02957-GEN, Rev. 3 (Reference 6). The temperature rating test results for abnormal conditions are provided in Section 4.5 of Westinghouse report EQ-QR-269, (Reference 5). Westinghouse documents WNA-DS-02957-GEN, Rev. 3 and EQ-QR-269 are available for review upon request.

b) For MPS3, the primary and backup channel transmitters, displays, control box, and UPS are mounted within the Auxiliary Building at EL 43'-6". This area of the Auxiliary Building is described in MPS3 EQ specification SP-M3-EE-333, Rev. 7, "Environmental Conditions for Equipment Qualification," (Reference 7) and is not expected to exceed 120°F during normal operations. The maximum temperatures under postulated BDB conditions in which there is no AC power available to run heating ventilation and air conditioning (HVAC) systems is not expected to exceed 134°F. No compensatory actions were assumed in this determination. Calculation MISC-11807, "MP3 Auxiliary Building 43'-6" Elevation Temperature Profile (EQ-Zone AB-06) Following Loss of AC power (ELAP) Beyond Design Basis Scenario," (Reference 8) provides the results of the temperature within the MPS3 Auxiliary Building at EL. 43'-6". Calculation MISC-11807 has previously been provided to the NRC staff and is available for their review.

SFPI RAI No. 6

Please provide information indicating the maximum expected relative humidity in the rooms in which the system electronics will be located under BDB conditions, in which there are no AC power available to run HVAC systems, and whether the sensor electronics are capable of continuously performing its required functions under this expected humidity condition.

Dominion Response:

For MPS3, the primary and backup channel transmitters, display cabinets, control boxes, and UPSs are mounted within the MPS3 Auxiliary Building at EL 43'-6".

The Auxiliary Building areas containing SFP Level Instrumentation System equipment are areas that have conditioned air with ventilation, cooling and heating as necessary. Accordingly, normal steady state relative humidity (RH) levels within these Auxiliary Building areas are typically well below the equipment limit of 95%. The moisture content of the air should remain relatively constant throughout a postulated BDB event as a result of the loss of power to the area HVAC systems. The stagnant air in the affected areas is expected to initially experience a rise in temperature due to residual heat sources, but will experience a temperature decrease over the life of the event. The effect on RH levels is expected to be modestly impacted as a result of the ambient temperature changes, but is not expected to vary significantly enough to approach the 95% RH equipment limit. Due to the various heat loads in the Auxiliary Building (e.g., wall transmission loads from the SFP and the Containment), it is expected that the bulk average temperatures in the vicinity of the SFP Level Instrumentation System will always be greater than the outdoor temperature. Furthermore, since the level instrumentation equipment is energized, it is extremely unlikely that condensation could occur on the equipment surfaces. Accordingly, the maximum humidity for postulated BDB conditions in which there is no AC power available to run heating ventilation and air conditioning (HVAC) systems is expected to be less than 95% relative humidity for either unit's Auxiliary Building.

Equipment testing under normal and abnormal conditions with humidity levels up to 95% was performed by Westinghouse and the results documented in Section 4.5 of report EQ-QR-269 (Reference 5). The results of the testing performed by Westinghouse and the expected maximum post-BDB humidity level of less than 95% form the basis to demonstrate reliability of the permanently installed electronic equipment located within the MPS3 Auxiliary Building under the post-BDB event RH conditions. Westinghouse document EQ-QR-269 is available for review upon request.

SFPI RAI No. 12

Please provide the NRC staff with the final configuration of the power supply source for each channel so that the staff may conclude that the two channels are independent from a power supply assignment perspective.

Dominion Response:

Each instrument channel is normally powered by 120 VAC distribution panels to support continuous monitoring of the SFP level. The 120 VAC distribution panels for the primary and backup channels are powered by different 480 VAC buses. Therefore, the loss of either of the 480 VAC bus will not result in the failure of both instrument channels. On loss of normal 120 VAC power, each channel is equipped with a separate uninterruptible power supply (UPS) that will automatically transfer to a dedicated 72-hour back-up battery. If normal power is restored, then the instrument channels will automatically transfer back to the normal 120 VAC power source. The backup batteries are maintained in a charged state by the associated UPS.

The instrument channels can also be powered through a manually selected alternate AC power source, if available. The Westinghouse SFP Level Instrumentation System design does not include an optional external DC power input.

SFPI RAI No. 15

a) The specific location for the primary and backup instrument channel display.

b) For any SFP level instrumentation displays located outside the MCR, 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-through) 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.

Dominion Response:

a) For MPS3, the primary and backup channel displays are both located in the Auxiliary Building at EL 43'-6". This area is easily accessible by multiple protected pathways. Both display locations allow rapid access to and egress for the emergency response staff from the MCR. All display locations were selected due to its proximity to the MCRs and both allow rapid access for the emergency response staff to and from the displays.

b) For MPS3, radiological habitability at the primary and backup display locations has been evaluated against calculation CALC-RA-0046, (Reference 4) for postulated BDB events and used as the basis to determine radiological conditions for these locations. The access routes are physically separated from the SFP such that heat and humidity from a boiling SFP would not create habitability concerns while accessing these displays. Due to the physical distance from the SFP and shielding from structures, exposure to personnel monitoring SFP levels would remain less than emergency exposure limits allowable for emergency responders to perform this action per the Millstone Emergency Plan. Calculation CALC-RA-0046 has previously been provided to the NRC staff and is available for their review.

SFP level display monitoring will be primarily the responsibility of the Primary Rounds Plant Equipment Operator, who will normally perform periodic monitoring at the location where the primary display are mounted, once dispatched from the Control Room. Travel time from the MCR to the level displays is approximately 15 minutes (round trip) based on walkdowns (including time spent for standard Radiation Control Area entry protocol). The travel time walkdown has been documented in the MPS3 site engineering log. The transit route to the display location is primarily contained within the Control Building and Auxiliary Building boundaries which are Category I structures. A very short part of the pathway will involve transit through the Service Building which is not seismically qualified. If this path is unavailable, alternate routes to the Auxiliary Building have been identified and do not impact the validated travel time.

SFPI RAI No. 16

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. The licensee is requested to include a brief description of the specific technical objectives to be achieved within each procedure.

Dominion Response:

Appropriate quality assurance measures that are consistent with Appendix A-1 of NEI 12-02 (Reference 3) have been established for the SFP level instrumentation as required by order EA-12-051. Procedures for system inspection, calibration and test, maintenance, repair, operation, and normal and abnormal responses have been provided by Westinghouse. Corresponding site specific procedures are being developed based on these vendor guidelines. Technical objectives for the following general types of procedures is as follows:

Type of Procedure -- Objective to be Achieved

1) System Inspection -- To verify the system components are in place, complete, and in the correct configuration, and that the sensor probe is free from significant boric acid deposition.

2) Calibration and Test -- To verify that the system is within specified accuracy, is functioning as designed, and is properly indicating SFP level.

3) Maintenance -- To establish and define scheduled and preventative maintenance requirements and activities necessary to minimize the possibility of interruption.

4) Repair -- To specify troubleshooting steps and component repair and replacement activities in the event of a system malfunction.

5) Operation -- To provide sufficient instructions for operation and use of the system by plant staff personnel.

6) FLEX Support Guideline (FSG) -- To define the actions to be taken upon observation of system level indications, including actions to be taken at the levels defined in NEI 12-02.

SFPI RAI No. 17

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 maintenance procedure to address when one of the instrument channels cannot be restored to functional status within 90 days.

Dominion Response:

a) Channel Check is not a specified requirement in NEI 12-02 (Reference 3). Channel Check is specified in IEEE 338-1987 (Reference 9) for Safety Systems. SFP level instrument channels are not safety related and are not subject to testing requirements of safety related instrumentation. If the plant staff determined a need to confirm that the two channels are performing as expected, the two channels may be read at their display locations. While the SFP is operating within design basis and at normal level, the indicators are compared to each other, and if a discrepancy exists can be compared to an existing narrow range SFP level instrument. The periodic calibration verification will be performed within 60 days prior to a refueling outage considering normal testing scheduling allowances (e.g., 25%). Calibration verification is not required to be performed more than once per 12 months. These calibration requirements are consistent with the guidance provided in Section 4.3 of NEI 12-02. Periodic calibration verification procedures provided by Westinghouse in WNA-TP-04709-GEN, "Spent Fuel Pool Instrumentation System Calibration Procedure" (Reference 10) are in place. Site specific calibration verification procedures are being developed based on Westinghouse document WNA-TP-04709-GEN, which is available for review upon request. Preventive maintenance procedures which include tests, inspection and periodic replacement of the backup batteries have been provided by Westinghouse. A corresponding site specific preventitive maintenance is being developed using recommended vendor guidance.

b) Provisions associated with out-of-service (OOS) or non-functional equipment including allowed outage times and compensatory actions are consistent with the guidance provided in Section 4.3 of NEI 12-02. If one OOS channel cannot be restored to service within 90 days, appropriate compensatory actions, including the use of alternate suitable equipment, will be taken. If both channels become OOS, actions would be initiated within 24 hours to restore one of the channels to operable status and to implement appropriate compensatory actions,

including the use of alternate suitable equipment and/or supplemental personnel, within 72 hours.

Sufficient spare parts will be maintained for the MPS3 SFP Level Instrumentation System, taking into account the lead time and availability of spare parts, in order to expedite maintenance activities, when necessary, to provide assurance that a channel can be restored to service within 90 days.

c) See response to RAI 17b.

Safety Evaluation Review Item

SE#11

Electromagnetic compatibility, as a result of vendor audit

Dominion Response:

The base configuration necessary to meet Criterion B (instrument will function before and after an Electro-Magnetic Compatibility (EMC) event) was confirmed during EMC qualification testing performed by Westinghouse. NRC representatives audited the Westinghouse test documents. As a result Westinghouse specified materials, installation, and grounding requirements necessary to ensure the installed SFP level measurement system meets the tested EMI/RFI qualifications. These requirements and characteristic are detailed in Westinghouse proprietary letter LTR-EQ-14-32, Rev. 2 dated August 1, 2014 (Reference 11), which is available for review upon request.

Additionally, placards have been installed in the Unit 3 Auxiliary Building. The placards read, "Be aware that use of hand-held radios within 3 ft. may cause interference with the SFP level channels. The reading returns to normal when radio usage is stopped."

References:

1. Millstone Power Station, Units 2 and 3: NRC 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, dated October 29, 2013 (ML13291A115).

2. Dominion Nuclear Connecticut, Inc., 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 (Serial No. 12-165E). (ML14069A013).

3. NEI 12-02, Rev. 1, "Industry Guidance for Compliance with NRC Order EA-12-051, "To Modify Licenses with Regard to Reliable Spent Fuel Pool Instrumentation," dated August 2012.

4. Calc-RA-0046, Rev. 0, "Radiological Evaluation following a Beyond Design Basis MPS3 SFP Draindown for NEI 12-02," dated February 14, 2014.

5. Westinghouse document EQ-EE-269, Rev. 1, "Design Verification Testing Summary Report for the Spent Fuel Pool Instrumentation System," dated April 2014.

6. Westinghouse document WNA-DS-02957-GEN, Rev. 3, "Spent Fuel Pool Instrumentation System-System Design Specification," dated March 2014.

7. SP-M3-EE-333, Rev. 7, "Specification for Millstone Unit 3 – Environmental Conditions for Equipment Qualification," dated February 4, 2010.

8. Calculation MISC-11807, Rev. 0, ""MP3 Auxiliary Building 43'-6" Elevation Temperature Profile (EQ-Zone AB-06) Following Loss of AC power (ELAP) Beyond Design Basis Scenario," dated March 17, 2014.

9. IEEE 338-1987, "IEEE Standard Criteria for the Periodic Surveillance Testing of Nuclear Power Generating Station Safety Systems."

10. Westinghouse document WNA-TP-04709-GEN, Rev. 4, "Spent Fuel Pool Instrumentation System Calibration Procedure," dated March 2014.

11. Westinghouse letter LTR-EQ-14-32, Rev. 2, "Spent Fuel Instrumentation System – Hardware Configuration for EMC testing to satisfy Performance Criteria B," dated August 1, 2014.