From: Guzman, Richard
Sent: Monday, March 24, 2014 1:38 PM
To: timothy.brown@duke-energy.com
Subject: Request for Additional Information (RAI) - Oconee PSW (NRC-EEEB) RAI-191-194

Categories: Archive, Followup

Tim,

As you're aware, draft RAIs were provided to your staff electronically on March 14, 2014, and we conducted a conference call on March 20, to cover any clarifications needed to ensure that the right level of detail is provided in the RAI responses. Shown below are the updated RAI questions. To support the timely completion of the NRC staff's review, we request you provide a response to these RAIs within 30 days of the date of this message. This message represents the staff's transmittal of the RAI questions which will be added to ADAMS as the official agency record. Please contact me if you have any questions.

Thanks,

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REQUEST FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST FOR THE LICENSING BASIS
FOR THE PROTECTED SERVICE WATER SYSTEM
DUKE ENERGY CAROLINAS, LLC
OCONEE NUCLEAR STATION (ONS), UNITS 1, 2, AND 3
DOCKET NOS. 50-269, 50-270 AND 50-287

RAI-191 [EEEB4]
In letter dated February 14, 2014 (ADAMS Accession No. ML14055A068), the licensee submitted revised responses to RAIs 134 and 165, regarding licensee's environmental qualification (EQ) of the PSW-related equipment. Specifically, the licensee indicated that the 5.0 kilovolt (kV) motor operated manual transfer switches, located in the Auxiliary Building, which provide an electrical power connection to the High Pressure Injection (HPI) system from the PSW system, are being qualified in accordance IEEE Std. 323-1974, as the total integrated dose value has been revised for this area based on the licensee's revised calculation.

a. The licensee stated that 5 kV motor operated transfer switches (1/2/3HPISXTRN001 and 002) will be qualified by test and analysis for the worst case radiation values, and the test reports will qualify the switches to IEEE Std.323-1974.

Since the licensee has not completed testing and analysis of the above equipment, and a summary result is not submitted for NRC staff's review, the staff requests that the future test and analysis be part of a commitment before the operation of the PSW/HPI system to demonstrate and verify the adequacy of the equipment and components EQ after testing and analysis. The licensee is requested to clarify the method to include this consideration in its response (i.e., as regulatory commitment).

b. In the RAI 165 revised response, the licensee stated that new 5.0 kV manual disconnect/alignment switches (1/2/3HPISXALGN001) are located in the same EQ Zone as the 5.0 kV motor operated transfer switches. The table attached to the RAI response shows the 5.0 kV manual disconnect/alignment switches (Item 3 in the table) are also of the same parameters (i.e., safety class QA-1, qualified temperature, qualified relative humidity, and qualified pressure in a harsh environment). However, the licensee stated that these switches are not required to mitigate a loss of coolant accident because they are not routed through the HPI pump motor path, and therefore, not required to be qualified and will not be included in the EQ program.

   Since these switches will be used to select either the "A" or "B" HPI pump, which means that these switches are electrically connected to the HPI system, and these switches are located in the same EQ Zone as 5.0 kV motor operated manual transfer switches, the NRC staff requests clarification as to why these switches will be qualified as Mild Environment switches per IEEE Std. 323-1983 and not in accordance with IEEE Std. -323-1974.

   According to 10 CFR 50.49, safety-related electric equipment shall remain functional during design basis events, which are defined as conditions of normal operation, including anticipated operational occurrences, design basis accidents, external events, and natural phenomena. Additionally, the licensee's study ONDS-351, Rev 2 "Analysis of Postulated High Energy Line Breaks (HELBs) Outside of Containment" provided in letter dated December 16, 2011 (ML12003A070) states, "The study will serve as the new design basis for Units 1, 2, and 3 and be incorporated into the licensing basis." Since HELB will be the new design basis according the above study, the licensee must demonstrate why these switches are not required to be functional during and following design basis events (i.e. for the design basis events other than LOCA as discussed above). For example, a HELB event that could occur in the Oconee Nuclear Station Turbine Building (TB) resulting in the loss of all 4160 Volt electrical power supply and how it will be capable of shutting down the reactor and maintaining it in a safe shutdown condition during and following such events.

RAI-192 [EEEB5]

In letter dated December 18, 2013 (ADAMS Accession No. ML13358A042), in response to RAI 173 [EEEB2], the licensee identified 7 (seven) PSW component types that have not been resolved for EQ.

These components are:

1) Rosemount Transmitters (models 1154 and 1154H);
2) MINCO/Westinghouse Resistance Temperature Detectors (RTDs)
3) Boston Insulated Wire cables
4) Viking electrical penetrations
5) Limitorque Motor Operated Valve (MOVs)
6) Tape Splice – Scotch 130C /EGS –SAIC, and 7). Power Operated Relief Valve.

The licensee states, "Resolution of the above component limitations will be through a combination of additional component testing, component replacement, and/or providing containment cooling to reduce the containment temperature profile."

Since the licensee has not completed additional testing and analysis of the above equipment and a summary result is not submitted for staff's review, the staff requests that the future test and analysis be part of a commitment before operation of the PSW/HPI system to demonstrate adequacy of the equipment and components qualification after testing and analysis. The licensee is requested to clarify the method to include this consideration in its response (i.e., as regulatory commitment).

RAI-193 [EEEB6]

In letter dated December 18, 2013, in response to RAI 173 [EEEB2], the licensee identified Rosemount Transmitters (models 1154 and 1154H) that will be qualified through a combination of additional component testing, component replacement, and/or providing containment cooling to reduce the containment temperature profile. The NRC staff's review identified 10 CFR Part 21 Notifications [dated April 02, 2012 (ADAMS Accession No. ML12094A371) and September 6, 2011 (ADAMS Accession No. ML11251A198)], issued by Rosemount Nuclear Instruments, Inc. (RNII) on Rosemount transmitters (models 1154 and 1154H), and also NRC Information Notice 89-42, "Failure of Rosemount Models 1153 and 1154 Transmitters," (ADAMS Accession No. ML031180830). Please provide detailed justification on the use of the Rosemount transmitters (model 1154 and 1154H) for the proposed safety related PSW system.

RAI-194 [EEEB7]

Attachment 1 (Revised PSW UFSAR) in letter dated December 18, 2013 states, "The PSW system reduces fire risk by providing a diverse QA-1 power supply to power safe shutdown equipment thus enabling the use of plant equipment for mitigation of certain fires as defined by the ONS Fire Protection Program. For certain scenarios inside the Turbine Building (TB) resulting in loss of 4160V essential power, either the SSF or PSW system is used for reaching safe shutdown."

The NRC staff did not find any discussion and analyses for these "certain scenarios" in the revised UFSAR. The licensee did not provide any details regarding certain scenarios inside the TB that will result in loss of 4160 V essential power in the revised UFSAR. Therefore, the staff is unable to make a conclusion on the aforementioned licensee statement. The

staff requests that the licensee provide more specific information regarding the term “certain scenarios”, including any detailed analyses and whether it has been previously reviewed and approved by the NRC staff.