NRR-DMPSPEm Resource

From: Ruben Crosslin <Ruben.Crosslin@tn.gov>
Sent: Monday, March 18, 2019 8:23 AM
To: Lee, Samson
Cc: Debra Shults; Anthony Hogan; Hon, Andrew
Subject: [External_Sender] RE: RE: State Consultation: Request for Comments on License Amendments to modify Sequoyah Nuclear Plant essential raw cooling water motor control center breakers and to revise the Updated Final Safety Analysis Report (SQN-TS-17-04) (E...

Thank you for providing the Draft Safety Evaluation for our review. Based on our review, we do not think it is necessary to set up a conference call to discuss.

While we generally prefer mechanical interlock systems over administrative controls, the Draft Safety Evaluation appears to address our comment as noted in the following information / excerpts from sections of the Draft Safety Evaluation:

Section 3.1

The staff noted that tie breakers exist only within the same train (such as between 1A A ERCW MCC and 2A A ERCW MCC). Therefore, inadvertent paralleling of the two sources (within the same train) would impact only one safety-related train at any given time.

Since, inadvertent paralleling of power sources would be limited to only one train (for example between 1A/2A related switchgear) at any given time, the plant would be able to meet all its safety-related functions by the other train (1B/2B). Therefore, the NRC staff finds that the licensee would continue to be in compliance with the regulations.

Section 3.2

The staff was particularly concerned regarding the inadvertent out-of-phase paralleling of the offsite or onsite power sources, which could lead to catastrophic damage and which can lead to long-time unavailability of safety related equipment of one train.

In a request for additional information (RAI) dated December 10, 2018 (ADAMS Accession No. ML18344A075), the staff requested the licensee to provide additional information regarding whether the offsite power sources can be inadvertently connected out of phase within the same train (e.g., at ERCW MCCs 1A and 2A).

Based on above, the staff finds that there will not be any catastrophic failure/damage even if the two ERCW MCCs in the same train are inadvertently paralleled through closing of tie breakers.

Based on above, the staff finds that if the offsite power sources are inadvertently paralleled at the ERCW MCCs, but are in-phase, this would not cause a major degradation. However, because the staff considers this to be a reduction in defense-in-depth, the inadvertent paralleling of the two sources must be identified and corrected within reasonable time.

Section 3.3.1

As stated in the LAR, the licensee is relying on administrative controls to ensure that the normal and alternate power sources are not inadvertently paralled to a single ERCW. In the RAI dated December 10, 2018 (ADAMS Accession No.

ML18344A075), the staff requested that the licensee provide additional information regarding the administrative controls being used to ensure that the alternate power supply is only aligned for maintenance purposes, and that the alternate power supplies are not aligned when powered from the EDGs.

Therefore, the NRC staff concludes that the human actions described in the LAR will not adversely impact train separation, redundancy, or independence. Furthermore, the NRC staff finds that the licensee's proposed change does not overly rely on human actions to preclude cross-connection of safety-related buses and maintain independence of the electrical sources.

Section 3.3.2

The NRC staff finds that the licensee has proposed adequate administrative controls, including concurrent verification of breaker manipulations and verification of a dead bus prior to transfer of power supplies, to ensure that the ERCW bus that will be powered by its alternate power supply is de-energized prior to aligning the alternate supply. Based on the above evaluation, the NRC staff finds that the licensee's proposed change includes adequate administrative controls to alert the operators when it is acceptable to perform the required actions, direct the operators to perform the required actions, and has evaluated potential errors and their consequences.

Section 3.3.4

The NRC staff notes that the breaker manipulations associated with transferring the power from the normal to alternate power supply and the verification techniques proposed are not complex or unique, and are not time-limited. The licensee has trained its operators on the procedure changes. Based on the evaluation above, the NRC staff finds that the licensee has adequately validated that plant operators can perform the required actions.

Again, thank you for allowing us to review the Safety Evaluation.

From: Lee, Samson [mailto:Samson.Lee@nrc.gov]
Sent: Tuesday, March 12, 2019 2:53 PM
To: Ruben Crosslin
Cc: Debra Shults; Anthony Hogan; Hon, Andrew
Subject: RE: RE: State Consultation: Request for Comments on License Amendments to modify Sequoyah Nuclear Plant essential raw cooling water motor control center breakers and to revise the Updated Final Safety Analysis Report (SQN-TS-17-04) (EPID:...

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Dear Mr. Crosslin,

Thanks for the State comment. Attached for your information is our draft safety evaluation. Please let us know if it addresses your comment. Please let us know if we should set up a conference call to discuss.

Regards,
Sam Lee, Project Manager

From: Ruben Crosslin [mailto:Ruben.Crosslin@tn.gov]
Sent: Tuesday, March 12, 2019 7:41 AM
To: Lee, Samson
Cc: Debra Shults ; Anthony Hogan ; Hon, Andrew

Subject: [External_Sender] RE: State Consultation: Request for Comments on License Amendments to modify Sequoyah Nuclear Plant essential raw cooling water motor control center breakers and to revise the Updated Final Safety Analysis Report (SQN-TS-17-04) (EPID:...

State of Tennessee (Division of Radiological Health comment: **We strongly prefer the mechanical interlock system over the administrative control upon installation of the new feeder breakers, though we are not opposed to the concept of administrative controls**.

Our comment is based on our understanding of the following:

- The new breakers upon installation are not compatible with the existing interlock system.
- In the event that the administrative controls are not effective, TVA's contention is that "The effects of circulating currents are minimized in this case, due to the high impedance of the connection and similarity/symmetry of the circuit design".

From: Lee, Samson [mailto:Samson.Lee@nrc.gov]
Sent: Thursday, March 07, 2019 1:30 PM
To: Ruben Crosslin
Cc: Debra Shults; Anthony Hogan; Hon, Andrew
Subject: State Consultation: Request for Comments on License Amendments to modify Sequoyah Nuclear Plant essential raw cooling water motor control center breakers and to revise the Updated Final Safety Analysis Report (SQN-TS-17-04) (EPID: L-2018-LLA-0060)

Dear Mr. Crosslin,

The NRC is finalizing the subject license amendments for Sequoyah Nuclear Plant (SQN), Units 1 and 2. In accordance with Title 10 of the Code of Federal Regulations, Section 50.91(b), we are notifying you of the proposed issuance of these amendments. SQN has implemented a design change to remove the existing mechanical (Kirk Key) interlocking scheme from the feeder breakers and tie breakers for Essential Raw Cooling Water (ERCW) Motor Control Centers (MCCs) 1A-A and 2A-A. The amendments approve TVA to complete the implementation of the design change to remove the mechanical interlock device from the feeder breakers and tie breakers from the ERCW MCCs 1B-B and 2B-B and to revise the ERCW System Description in Section 9.2.2.2 of the SQN Updated Final Safety Analysis Report (UFSAR) to describe the normal and alternate power sources for the ERCW system.

The amendment request was published in the Federal Register on June 5, 2018 (83 FR 26107). No public comments were received.

Please let us know, if you have any comments on behalf of the State of Tennessee for the above amendments. Please contact me if you have any questions.

Regards,
Sam Lee, Project Manager
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
301-415-3168

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Tracking Status: None
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