

From: Wengert, Thomas
Sent: Friday, April 9, 2021 8:09 AM
To: Keele Jr, Riley D
Cc: REID, MARK; CLARK, ROBERT W; Dixon-Herrity, Jennifer
Subject: ANO-2 Final RAI RE: License Amendment Request to Adopt a Safety Function Determination Program (EPID L-2020-LLA-0252)
Attachments: ANO-2 - Final RAI Regarding SFDP LAR.pdf

On April 7, 2021, the U.S. Nuclear Regulatory Commission (NRC) staff sent Entergy Operations, Inc. (Entergy) the draft Request for Additional Information (RAI) identified below. This RAI relates to the November 17, 2020, license amendment request (LAR) that proposes to modify the Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specifications (TSs) to incorporate the provisions of Limiting Condition for Operation (LCO) 3.0.6 of the Improved Standard Technical Specifications (ISTS), which provide the actions to be taken when the inoperability of a support system results in the inoperability of a related supported system(s). The proposed changes would add a new Safety Function Determination Program to the Administrative Controls section of the ANO-2 TSs to ensure that a loss of safety function is detected, and appropriate actions are taken, when using the provisions of LCO 3.0.6.

Entergy subsequently informed the NRC staff that the information requested was understood and that no additional clarification of the RAI was necessary. A publicly available version of this final RAI (attached with "Draft" removed) will be placed in the NRC's Agencywide Documents Access and Management System (ADAMS). As agreed, please provide a response to this RAI within 45 days of this correspondence.

From: Wengert, Thomas
Sent: Wednesday, April 07, 2021 3:52 PM
To: Keele Jr, Riley D
Cc: REID, MARK ; CLARK, ROBERT W ; Dixon-Herrity, Jennifer
Subject: ANO-2 Draft RAI RE: License Amendment Request to Adopt a Safety Function Determination program (EPID L-2020-LLA-0252)

By application dated November 17, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20322A426), Entergy Operations, Inc. (the licensee) submitted a license amendment request (LAR) for Arkansas Nuclear One, Unit 2 (ANO-2). The proposed amendment would modify the ANO-2 Technical Specifications (TSs) to incorporate the provisions of Limiting Condition for Operation (LCO) 3.0.6 of the Improved Standard Technical Specifications (ISTS), which provide the actions to be taken when the inoperability of a support system results in the inoperability of a related supported system(s). The proposed changes add a new Safety Function Determination Program to the Administrative Controls section of the TSs to ensure that a loss of safety function is detected, and appropriate actions are taken when using the provisions of LCO 3.0.6.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information, as described in the attached request for additional information (RAI), is required for the staff to complete its review of this application. This RAI is identified as draft at this time to confirm your understanding of the information that the NRC staff needs to complete the evaluation. If the request for information is understood, please respond to this RAI within 30 days of the date of this request.

Please contact me if you would like to set up a conference call with the NRC staff to clarify this request for information.

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NRR/DORL/LPL4
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REQUEST FOR ADDITIONAL INFORMATION
PROPOSED TECHNICAL SPECIFICATION CHANGES
TO ADOPT A SAFETY FUNCTION DETERMINATION PROGRAM
ARKANSAS NUCLEAR ONE, UNIT 2
DOCKET NO. 50-368

By application dated November 17, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20322A426), Entergy Operations, Inc. (the licensee) submitted a license amendment request (LAR) for Arkansas Nuclear One, Unit 2 (ANO-2). The proposed amendment would modify the ANO-2 Technical Specifications (TSs) to incorporate the provisions of Limiting Condition for Operation (LCO) 3.0.6 of the Improved Standard Technical Specifications (ISTS)¹, which provide the actions to be taken when the inoperability of a support system results in the inoperability of a related supported system(s). The proposed changes add a new Safety Function Determination Program to the Administrative Controls section of the TSs to ensure that a loss of safety function is detected, and appropriate actions are taken when using the provisions of LCO 3.0.6. The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is needed to complete its review, as described below.

Regulatory Basis

Per Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(b), each license authorizing operation of a utilization facility will include TSs. The TSs will be derived from the analyses and evaluations included in the safety analysis report, and amendments thereto, submitted pursuant to 10 CFR 50.34 (describing the technical information to be included in applications for an operating license). Pursuant to 10 CFR 50.36(c), TSs are required to include items in, among other things, the following five specific categories related to station operation: (1) safety limits, limiting safety system settings, and limiting control settings; (2) LCOs; (3) surveillance requirements; (4) design features; and (5) administrative controls. The Commission may include such additional TSs as it finds appropriate.

The regulation in 10 CFR 50.36(c)(2) establishes the requirement for TSs to include LCOs. LCOs are the lowest functional capability or performance level of equipment required for the safe operation of the facility. When an LCO is not met, the licensee must shut down the reactor or follow any remedial action permitted by the TSs until the LCO can be met.

As discussed in 10 CFR 50.36(c)(5), administrative controls are the provisions relating to the organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner.

In general, there are two classes of changes to TSs: (1) changes needed to reflect modifications to the design basis (TSs are derived from the design basis), and (2) voluntary changes to take advantage of the evolution in policy and guidance as to the required content and preferred

¹ NUREG-1432, "Standard Technical Specifications - Combustion Engineering Plants: Specifications," Rev. 4.0, Vol. 1, (ADAMS Accession No. ML12102A165), dated April 2012.

format of TSs over time. The proposed amendment relates to the second class of changes. Specifically, the proposed changes are based on TS improvements contained in the ISTS. The NRC staff used this guidance in evaluating the proposed amendment.

Request for Additional Information

1. In the LAR dated November 17, 2020 (Enclosure pages 4, 17, and 18 of 32), the licensee proposes to change LCO 3.3.2.1 to require entry into applicable Actions of the associated emergency diesel generator (EDG) for inoperable Loss of Voltage (LOV) and Degraded Voltage (DV) channels when any DV relay (channel) or both LOV relays on a respective safety bus are inoperable. To address this condition, a new Action 14 is proposed for LCO 3.3.2.1, Table 3.3-3. New Action 14 states in part, "With the number of 460-volt Degraded Voltage (Functional Unit 7.b) channels ...". The licensee explains that while Action 14 is a new action, it was developed from Action 9. Action 9 includes OPERABLE in its description of the channel's condition as follows: "With the number of OPERABLE channels...". In addition, all of the Table 3.3-3 Actions consistently include OPERABLE when describing a channel's condition. Explain why proposed new Action 14 does not include "OPERABLE" to describe the condition of the 460-volt Degraded Voltage channels.
2. In the LAR (Enclosure page 4 of 32) the licensee proposes to add Action 14 item a., which states, "Immediately declare the affected EDG inoperable ...". If the proposed change is adopted, it appears that this may be the first use of the "EDG" acronym in the ANO-2 TSs. In addition, it does not appear to be consistent with other ANO-2 TSs (e.g., the term "diesel generator" is spelled out in specifications for electrical power systems). Explain why the proposed new Action introduces an acronym that is not defined and is inconsistent with the electrical power systems specifications. This similar issue also applies to the proposed Action Note for LCO 3.7.3.1, which also uses the "EDG" acronym.
3. In the LAR (Enclosure pages 5-6 and 20-22 of 32) the licensee indicates that proposed new LCO 3.8.1.1 Actions would be consistent with ISTS. New Action a.2 of LCO 3.8.1.1 is consistent with ISTS by including language that connects the specified completion time interval (24 hours) to the condition (from discovery of ... concurrent with ...) and then the Action (declare ...) as follows: "Within 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant feature(s), declare...". However, other new Actions added to LCO 3.8.1.1, are not consistent with ISTS. For example, the licensee proposed to add new Action b.2, which states, "Within 4 hours, declare...". The ISTS wording applicable to b.2, includes language between "4 hours" and "declare," similar to new Action a.2 described above and as follows: "Within 4 hours, from discovery of ... concurrent with...". Given that the ISTS connects the specified completion time interval "within 4 hours" to the condition using "from the discovery of..." and "concurrent with...", explain why Action b.2 is not written in a manner that aligns with the approach taken for new Action a.2, using similar ISTS wording, as appropriate. For example, following the new Action a.2 approach, why is not new Action b.2 written in part as: "Within 4 hours, from discovery of one diesel generator inoperable concurrent with inoperability of redundant required features, declare..."? The same logic and question apply to proposed new Action c.2 and proposed new Action d.2.
4. In the LAR (Enclosure pages 6 and 16 of 32) the licensee describes the addition of a Note to LCO 3.8.1.2 as similar to the ISTS. The ISTS Note states, "Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A." Condition A is an inoperable offsite power circuit. In contrast with the ISTS,

the proposed ANO-2 Note stops at “de-energized,” leaving off the last few words: “as a result of an inoperable offsite power circuit.” The LAR discussion on the addition of the Note to LCO 3.8.1.2 indicates that the Note would apply with one required train de-energized “as a result of an inoperable offsite circuit.” Explain why the Note was not written, for example, as “Enter applicable ACTIONS of LCO ... with one required train de-energized as a result of an inoperable offsite power circuit,” which would be as described in the LAR and similar to the ISTS. As part of the response, provide an assessment as to whether leaving out the words “as a result of an inoperable offsite circuit” is more or less restrictive as compared to the ISTS. In either case (i.e., more or less restrictive), provide a justification for the omission.

5. In the LAR (Enclosure pages 6-7 and 23 of 32), the licensee describes a proposed revision to LCO 3.8.2.2, modifying and reformatting the single Action into an Action a and a new Action b. The licensee proposes to add the phrase “declare affected required features inoperable OR:” to the introductory statement of the Actions. There is no specified completion time associated with the Action to “declare.” In addition, new Action b. states “Initiate actions to restore ...”. Again, there is no specified completion time associated with the Action to “Initiate...”. Currently (i.e., with the single Action), there is a specified completion time (“immediately”) in the TSs associated with the single Action. Please include the specified completion time or provide justification for the proposed approach.
6. In the LAR (Enclosure pages 7 and 24 of 32), the licensee proposes a revision to LCO 3.8.2.4 Action b, which would add Actions (and reformat the existing Action). The licensee proposes to add the phrase “declare affected required features inoperable OR:” to the introductory text for Action b. However, there is no specified completion time associated with the Action to “declare.” In addition, new Action b.ii states “Initiate actions to restore...” Again, there is no specified completion time associated with the Action to “Initiate...” Currently, there is a specified time (“immediately”) in the TSs associated with Action b. Please include the specified completion time or provide justification for the proposed approach.
7. In the introduction to Section 3.5 of the LAR (Enclosure page 16 of 32) states, in part, that “[T]he proposed Actions are consistent with those included in the ISTS ...”. As described in the LAR (Enclosure page 23 of 32), ISTS LCO 3.8.10 provides an option to “[D]eclare associated support feature(s) inoperable” (Required Action A.1) OR alternatively in part, initiate actions to restore required alternating current (AC), direct current (DC), and AC vital bus electrical power distribution subsystems to operable status (A.2.3) AND declare associated required shutdown cooling (SDC) inoperable (A.2.4). In the LAR (Enclosure page 23 of 32), the licensee states, “... ANO-2 TSs do not currently have corresponding Actions in LCO 3.8.2.2 and LCO 3.8.2.4 which initiate actions to restore the required buses electrical power to operable status and which declare the associated required SDC subsystem(s) inoperable as directed by Required Actions A.2.3 and A.2.4 in ISTS LCO 3.8.10.”

In addition, in the LAR (Enclosure page 24 of 32) the licensee states, “No specific Action is added regarding the SDC system as the added Action to declare affected required features inoperable in both LCO 3.8.2.2 and LCO 3.8.2.4 envelopes this requirement.”

Like the ISTS, the licensee proposes to provide the option to “declare affected features inoperable” OR alternatively in part, initiate actions to restore required AC, DC, and AC vital bus electrical power distribution subsystems (3.8.2.2 Action b. and 3.8.2.4 Action b.ii) to

operable status. However, unlike the ISTS, the proposed ANO-2 Actions after the OR logical connector do not include the statement declaring SDC inoperable. According to ISTS LCO 3.8.10 Bases, ISTS Required Actions (e.g., A.2.1 through A.2.3) do not adequately address the concerns relating to coolant circulation and heat removal. Pursuant to LCO 3.0.6, the SDC Actions would not be entered. Therefore, a Required Action (A.2.4) is provided to direct declaring SDC inoperable, which results in taking the appropriate SDC actions.

Explain how the proposed ANO-2 option to “declare affected features inoperable” envelops the SDC requirement (i.e., declaring the associated SDC system inoperable), given that the ISTS contains a similar option to declare affected features inoperable OR alternate actions in part, that declare SDC inoperable. In the response, please address the proposed use of logical connectors and how the added Action to declare affected required features inoperable, which precedes the OR logical connector, would extend to actions that follow the OR logical connector.