

From: Wengert, Thomas
Sent: Wednesday, February 5, 2020 8:16 AM
To: Arnold, Timothy
Cc: BICE, DAVID B (ANO); Dixon-Herrity, Jennifer
Subject: ANO-2 - Final RAI RE: Alternative Request VRR-ANO2-2019-1 (EPID L-2019-LLR-0088)
Attachments: Final RAI for ANO-2 Alternative Request VRR-ANO2-2019-1.pdf

On February 3, 2020, the U.S. Nuclear Regulatory Commission (NRC) staff sent Entergy Operations, Inc. (the licensee) the draft Request for Additional Information (RAI) identified below. This RAI relates to the Arkansas Nuclear One, Unit 2, alternative (relief) request described below.

On February 4, 2020, the licensee informed the NRC staff that a clarification teleconference was not necessary and that the licensee would respond to this RAI within 30 days of this correspondence. 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).

From: Wengert, Thomas
Sent: Monday, February 03, 2020 12:49 PM
To: Arnold, Timothy
Cc: BICE, DAVID B (ANO) ; Dixon-Herrity, Jennifer
Subject: ANO-2 - Draft RAI RE: Alternative Request VRR-ANO2-2019-1 (EPID L-2019-LLR-0088)

By letter dated September 3, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19246B361), Entergy Operations, Inc. (the licensee) requested approval of alternative testing associated with the inservice testing (IST) program fifth 10-year interval for Arkansas Nuclear One, Unit 2 (ANO-2). Specifically, the licensee requested an alternative (VRR-ANO2-2019-1) to a requirement of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) related to the test frequency of certain Service Water system valves.

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 alternative request. 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 to clarify this request for information.

Tom Wengert
U.S. Nuclear Regulatory Commission
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REQUEST FOR ADDITIONAL INFORMATION (RAI)
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO ALTERNATIVE REQUEST VRR-ANO2-2019-1
FOR THE INSERVICE TESTING PROGRAM FIFTH 10-YEAR INTERVAL
ENERGY OPERATIONS, INC
ARKANSAS NUCLEAR ONE, UNIT 2
DOCKET NO. 50-368

By letter dated September 3, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19246B361), Entergy Operations Inc. (Entergy, the licensee), requested approval of alternative testing associated with the inservice testing (IST) program fifth 10-year interval for Arkansas Nuclear One, Unit 2 (ANO-2). The U.S. Nuclear Regulatory Commission (NRC, the Commission) staff has determined the following additional information is needed to complete its review of alternative request VRR-ANO2-2019-1.

RAI VRR-ANO2-2019-1

Applicable Regulations

Title 10, Section 50.55a, of the *Code of Federal Regulations* (10 CFR 50.55a), "Codes and Standards," lists all the American Society of Mechanical Engineers (ASME) Codes that have been incorporated by reference, including the ASME Code for Operation and Maintenance of Nuclear Power Plants (OM Code) with conditions, that the NRC has approved for use. The regulation in 10 CFR 50.55a defines the requirements for applying industry codes and standards to nuclear power facilities. Each of these facilities is subject to the conditions in paragraphs (a), (b), and (f) of 10 CFR 50.55a, as they relate to inservice testing (IST).

The regulation in 10 CFR 50.55a(f)(4)(ii) requires that an IST activity conducted during each 120-month interval following the initial interval must be conducted in compliance with the requirements of the latest edition and addenda of the OM Code incorporated by reference in the version of 10 CFR 50.55a(a) that is in effect 12 months before the start of the interval and subject to the conditions listed in 10 CFR 50.55a(b). This Code Edition is called the "Code of Record." Therefore, the applicable Code of Record for the ANO-2 fifth 10-year IST interval is the 2012 Edition of the OM Code.

Appendices A and B of 10 CFR Part 50, require that licensees provide confidence that safety-related equipment are capable of performing their safety functions under design-basis conditions.

Pursuant to 10 CFR 50.55a(z)(1) and (2), the Commission may authorize the licensee to implement an alternative to Code requirements if: (1) the applicant or licensee can demonstrate that the proposed

alternative would provide an acceptable level of quality and safety, or (2) the Code requirement presents a hardship without a compensating increase in the level of quality and safety.

Background

Service Water (SW) valves 2CV-1541-1 and 2CV-1560-2 are normally closed motor-operated, 18" Tricentric stainless steel butterfly stop valves that have a primary active open safety function to direct SW return flow to the Emergency Cooling Pond (ECP), a secondary active close function to isolate a ruptured SW header to ensure long-term cooling capability is maintained, and to serve as SW boundary isolation valves. These valves are leak tested to verify that seat leakage does not exceed the leakage allowed based on maintaining the minimum volume of water in the ECP to meet design basis accident requirements. As required by ASME OM Code, the licensee has set valve leakage acceptance criteria for the close safety function as follows:

- 1) Inventory analysis for the ECP assumes a total loss of 30 gallons per minute (gpm) from the SW boundary valves of both units combined. Currently, the analysis assumes the allowable leakage to be evenly distributed among the valves or 2.5 gpm per valve.
- 2) A maintenance limit intended to initiate corrective maintenance has been established to be less than or equal to 1.5 gpm.
- 3) Valve operability threshold is greater than or equal to 9.0 gpm.

The ASME OM Code leak test is required to be completed once every 2 years. The leak test is normally performed during refueling outages, which are typically every 18 months. In its alternative request VRR-ANO2-2019-1, Entergy proposes to test one valve each refueling outage with the individual valve test frequency of once every two refueling outages. Refueling outages at ANO-2 occur on an 18-month cycle. Therefore, this would alter the leak testing frequency to approximately three (3) years, depending on outage durations and/or unscheduled outages.

Issue

The alternative request is similar to a previously-approved request with respect to the ANO-2 Fourth 10-year IST interval (Reference: NRC letter to Entergy dated January 21, 2010, "Arkansas Nuclear One, Unit 2 – Request for Alternative VRR-ANO2-2009-1 for the Fourth 10-Year Inservice Testing Interval (TAC No. ME2407)" (ADAMS Accession No. ML093370316)). In the previous alternative request, the licensee committed to perform leak testing of 2CV-1541-1 and 2CV-1560-2 on a rotating basis (once every 3 years for each valve) in accordance with plant procedures. In its previous request, the licensee stated, "If problems are found with the sample valve that results in leakage in excess of the limiting value for operability described in the test procedure, both valves will be tested during the same outage to verify operability." However, a similar statement is not included in the current alternative request.

Request

Please explain the actions that Entergy will take should a valve leakage test value exceed the valve operability threshold, and/or explain why the commitment to leak test the other valve, should the sample valve exceed the operability threshold, is not included in current alternative request VRR-ANO2-2019-1.