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10 CFR 50.55a(z)(2)

1CAN122001

December 10, 2020

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

Subject: Responses to Request for Additional Information for the
Request for Relief related to American Society of Mechanical Engineers
(ASME) Code Case N-770-5 Supplemental Examination Requirements
ANO1-ISI-034

Arkansas Nuclear One, Unit 1
NRC Docket No. 50-313
Renewed Facility Operating License No. DPR-51

- References:
- 1) Entergy Operations, Inc. (Entergy) letter to U. S. Nuclear Regulatory Commission (NRC), "Request for Relief related to American Society of Mechanical Engineers (ASME) Code Case N-770-5 Supplemental Examination Requirements ANO1-ISI-034," (ADAMS Accession No. ML20227A112), dated August 11, 2020
 - 2) U. S. NRC email to Entergy (T. Wengert to R. D. Keele, Jr.), "RE: ANO-1 - Final RAI RE: Relief Request ANO1-ISI-034 (EPID L-2020-LLR-0110)," dated November 19, 2020

Via Reference 1, Entergy Operations, Inc. (Entergy), proposed an alternative (ANO1-ISI-034) to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Case N-770-5, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR [Pressurized Water Reactor] Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS W86182 Weld Filler Material with or without Application of Listed Mitigation Activities," as conditioned by Title 10 of the *Code of Federal Regulations* Part 50 (10 CFR 50) 55a(g)(6)(ii)(F), for the deferral of the volumetric examination of the High Pressure Injection (HPI) Nozzle "D" dissimilar metal weld at Arkansas Nuclear One, Unit 1 (ANO-1).

The U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is required for the staff to complete its review of this application. The staff has provided a request for additional information (RAI) via Reference 2.

Enclosed is a copy of the RAIs and the associated responses.

There are no new regulatory commitments included in this letter.

If there are any questions or if additional information is needed, please contact Riley Keele, Manager, Regulatory Assurance, at (479) 858-7826.

Respectfully,

ORIGINAL SIGNED BY RON GASTON

Ron Gaston

RWG/rwc

Enclosure: Response to Request for Additional Information Related to Request for Relief –
 ANO1-ISI-034

cc: NRC Region IV Regional Administrator
 NRC Senior Resident Inspector – Arkansas Nuclear One
 NRC Project Manager – Arkansas Nuclear One

Enclosure

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**Response to Request for Additional Information
Related to Request for Relief – ANO1-ISI-034**

**Response to Request for Additional Information
Related to Request for Relief – ANO1-ISI-034**

By Reference 1, Entergy Operations, Inc. (Entergy), proposed an alternative (ANO1-ISI-034) to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code Case N- 770-5, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR [Pressurized Water Reactor] Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS W86182 Weld Filler Material with or without Application of Listed Mitigation Activities," as conditioned by 10 CFR 50.55a(g)(6)(ii)(F), for the deferral of the volumetric examination of the High Pressure Injection (HPI) Nozzle "D" dissimilar metal weld at Arkansas Nuclear One, Unit 1 (ANO-1). Entergy requested authorization of the proposed alternative under the requirements of 10 CFR 50.55a(z)(1), such that, "The proposed alternative would provide an acceptable level of quality and safety."

Requirement / Issue

The U.S. Nuclear Regulatory Commission (NRC) staff review found that the supporting technical basis addresses the structural integrity concern but does not adequately address the basis for leak tightness through the period of the extended inspection frequency in order to be authorized under 10 CFR 50.55a(z)(1). However, in Section V of the proposed alternative, Entergy identified the regulatory requirements for another option for authorization of this request under 10 CFR 50.55a(z)(2), "Hardship without a compensating increase in quality and safety." In Section II of Reference 1, Entergy provided a hardship basis for the proposed alternative.

The requested extension would allow the next volumetric examination of HPI nozzle "D" weld to be performed during the same refueling outage as the next required volumetric examination of the other three HPI nozzle welds at ANO-1 (i.e., the dissimilar metal welds at HPI nozzles "A," "B," and "C"), which were last examined during the fall 2016 refueling outage (1R26) and are due for reexamination in fall 2022 (1R30). Performance of all four high pressure injection nozzle welds in such a coordinated manner would result in personnel dose savings for the site, promoting As Low As Reasonably Achievable (ALARA) practices associated with this significant non-destructive examination activity, and minimizes the human performance challenges by allowing a more focused approach to work by performing the inspection in one outage versus two.

Request

To facilitate the NRC staff's review of the licensee's proposed alternative under 10 CFR 50.55a(z)(2), the following additional information is needed to reach a regulatory decision (Reference 2).

RAI-1

Provide an estimate of the radiological dose savings that would be realized by the proposed alternative by performing the inspections all at one time. Include within this estimate all duplication of effort required for the examination for the "D" HPI nozzle weld alone versus performing the examination in coordination with the other nozzle welds.

Response to RAI-1

It is estimated that approximately 1.65 REM would be saved in the spring 2021 outage by performing all four examinations at the same time. This savings includes the estimated dose for construction and subsequent removal of the required scaffolding and insulation. Also included in this estimate is the removal and re-installation of a temperature element that would interfere with the examination, and preparation of the examination area.

RAI-2

Due to the continuing COVID-19 public health emergency, provide an estimate of the additional number of licensee staff and contractors required to perform this examination during the spring 2021 refueling outage and any other relevant details to address minimizing the potential impact on licensee/contractor personnel and to the local community.

Response to RAI-2

This examination is to be performed by phased-array ultrasonic testing (UT). This is the only examination of this type that is scheduled to be performed during the spring 2021 refueling outage (1R29). This one examination requires four (4) contractors to complete and it is the only examination these individuals would perform. The other activities (e.g., erecting scaffolding) will be performed by individuals already tasked to outage activities.

The contractors are scheduled to be on-site and in the local community for two weeks. The individuals would need to be housed in a local hotel/motel, and utilize local establishments for meals and other services, both of which would involve some level of contact with or proximity to local residents.

References

- 1) Entergy Operations, Inc. (Entergy) letter to U. S. Nuclear Regulatory Commission (NRC), "Request for Relief related to American Society of Mechanical Engineers (ASME) Code Case N-770-5 Supplemental Examination Requirements ANO1-ISI-034," (ADAMS Accession No. ML20227A112), dated August 11, 2020
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