

From: Lingam, Siva
Sent: Thursday, November 19, 2020 4:22 PM
To: Michael.Dilorenzo@aps.com
Cc: Dixon-Herrity, Jennifer; Colaccino, Joseph; Lehman, Bryce; Carl.Stephenson@aps.com; Sarah.Kane@aps.com; Nawaporn.Aaronscooke@aps.com; Pettis, bob; Ma, John
Subject: Palo Verde 2 -Verbal Authorization of RR 66 to Extend Containment Tendon Inspection by One Year Based on 10 CFR 50.55a(Z)(2) (EPID L-2020-LLR-0145)

By teleconference call on November 19, 2020, the U.S. Nuclear Regulatory Commission (NRC) staff provided verbal authorization to Arizona Public Service Company (APS, the licensee) for the subject relief request (RR) for Palo Verde Nuclear Generating Station, Unit 2 (Palo Verde, Unit 2) based on the following explanation.

Participants:

NRC APS

Joseph Colaccino Nawaporn AaronsCooke
Jennifer Dixon-Herrity Boris Bolf
Bryce Lehman Michael DiLorenzo
Siva Lingam Sarah Kane
Carl Stephenson

VERBAL AUTHORIZATION BY THE OFFICE NUCLEAR REGULATION

10 CFR 50.55a REQUEST TO DEFER ASME CODE INSERVICE INSPECTION OF CONTAINMENT TENDON

INSPECTION DUE TO PANDEMIC (COVID-19)

PALO VERDE NUCLEAR GENERATING STATION, UNIT 2

ARIZONA PUBLIC SERVICE COMPANY (APS)

DOCKET NO. 50-529

NOVEMBER 19, 2020

Technical Evaluation read by Joseph Colaccino, Chief of the Structural, Civil, and Geotechnical Engineering Branch (ESEB), Office of Nuclear Reactor Regulation

By letter dated November 5, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20315A156), Arizona Public Service Company (APS, the licensee) submitted a COVID-19 relief request to extend containment tendon inspection at Palo Verde Nuclear Generating Station, Unit 2 (Palo Verde, Unit 2) by 1 year, based on Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(z)(2).

Pursuant to 10 CFR 50.55a(z)(2), the licensee requests U.S. Nuclear Regulatory Commission (NRC) approval of Relief Request 66 regarding the interval between containment tendon inspections as

specified per paragraph IWL-2420 of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI, Subsection IWL, as required by 10 CFR 50.55a. Relief is requested on the basis that compliance with the Code specified inspection interval during the COVID-19 pandemic would result in hardship without a compensating increase in the level of quality and safety for Palo Verde, Unit 2 .

The U.S. Federal Government made a declaration of emergency due to COVID-19 pursuant to the Stafford Act on March 13, 2020, while the U.S. Centers for Disease Control and Prevention (CDC) has determined that COVID-19 poses a serious public health risk. Due to the COVID-19 pandemic, the licensee has enacted guidelines to limit outside contractors, including those that perform examinations for the inservice inspection program in order to minimize the potential of inadvertently spreading the COVID-19 virus to Palo Verde personnel.

The licensee stated in its letter dated November 5, 2020, that it currently does not have the internal capability and equipment to perform the inspection and this must be done by the vendor. Ten contractors needed to perform the containment tendon inspections have recently travelled to states that have confirmed cases of COVID-19 (Arkansas, South Carolina, North Carolina, Illinois, and Indiana). The CDC identified higher rates of infection per 100,000 in the last week in each state the contractors were traveling from than the current rate in Arizona. In general, this work activity involves a team of people working in close proximity and does not allow for social distancing, which can be a large contributor towards the spread of the virus. The licensee is proposing a one-time, 1-year extension of the containment post-tensioning system inspection period to allow time to safely and effectively accomplish the inspection. The duration of the proposed alternative would extend from the current February 8, 2021, deadline for performing the Unit 2, 35th year IWL Containment Post-Tensioning System Inspection until February 8, 2022.

In the letter dated November 5, 2020, the licensee stated that a regression analysis of the lift-off was performed for the license renewal application. The NRC staff's review of this analysis demonstrated that the average prestress in tendons should remain above the applicable minimum required values for at least 60 years of operation and that all tendons should, therefore, maintain their design basis function for the extended period of operation. The material condition of other components (e.g., concrete, bearing surfaces, grease, button heads, etc.) showed only minor degradation in a few areas; none indicating a need for significant corrective action.

In the letter dated November 5, 2020, the licensee stated that the following results of the 25th and 30th Year Tendon Surveillances performed on Palo Verde's Unit 2 confirmed that the functional integrity of the selected post-tensioning system met the applicable code requirements:

- The chemical tests of the in-service grease were all within required specifications for moisture content and soluble ions.
- All inspected tendon ends were found with no evidence of free water and were acceptable per subparagraph IWL-3221.3(e).
- Soluble ion concentrations and moisture contents were within acceptable limits for all inspected tendons, per subparagraph IWL-3221.4.

- Some of the button heads were cracked, but did not meet the rejection criteria; therefore, they were acceptable.
- All inspected tendon anchorage components were found with an acceptable corrosion level of 'A' or 'B,' which were acceptable per subparagraph IWL-3221.3. No cracks were identified in the anchor heads.
- All cracks observed within the 24-inch perimeter of the concrete surrounding each inspected bearing plate were less than 0.01 inch in width, per subparagraph IWL-3221.3(d).
- All tendon grease caps were properly installed to their respective tendon ends, and all tendon grease caps were refilled with grease to acceptable levels, per subparagraph IWL-3221.4.

In the letter dated November 5, 2020, the licensee stated that the following results of the 25th Tendon Surveillances performed on Palo Verde's Unit 2, confirmed that the functional integrity of the selected post-tensioning system met the applicable code requirements (these were not completed for the 30th year surveillance):

- All as-found tendon lift-off forces exceeded the prescribed lower limit value.
- The hydraulic jacks used for tendon lift-offs were calibrated before and after the surveillance period and were found to be within an acceptable variation of +/- 1.5 percent.
- All test wires removed and tested were found to have acceptable corrosion levels of 'A', diameter values within the acceptable range, and acceptably high ultimate stress, yield stress, and elongation percent values, per subparagraph IWL-3221.2
- All detensioned tendons were retensioned to acceptable forces and had acceptable elongations, per subparagraph IWL-2523.3.

In the letter dated November 5, 2020, the licensee stated that:

A visual examination of the Unit 2 Concrete Containment's exterior surface was completed in August of 2017. No conditions were identified which would require structural repair or more frequent examinations. The condition of the exterior concrete surface was deemed acceptable, per [subparagraph] IWL-3211.

Based on the NRC staff's evaluation of the information provided by the licensee, the NRC staff finds that (1) reasonable assurance of adequate protection based on the operating experience that the average prestress in tendons should remain above the applicable minimum required values for at least 60 years of operation, (2) the 2017 visual examination of the Unit 2 concrete containment's exterior surface indicated no structural problems or needed more frequent examinations, and (3) all the surveillance data met the ASME BPV Code, Section XI, Subsection IWL, as required by 10 CFR 50.55a. Therefore, the licensee's hardship justification is acceptable.

Authorization read by Jennifer Dixon-Herrity, Chief of the Plant Licensing Branch IV, Office of Nuclear Reactor Regulation

As Chief of the Plant Licensing Branch IV, Office of Nuclear Reactor Regulation, I agree with the conclusion of the Structural, Civil, and Geotechnical Engineering Branch.

The NRC staff concludes that the proposed relief for Palo Verde, Unit 2 will provide reasonable assurance of adequate safety to extend containment tendon inspection by 1 year, based on 10 CFR 50.55a(z)(2). The NRC staff finds that complying with the requirements of the ASME Code, Section XI, as required by 10 CFR 50.55a, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2).

The NRC staff concludes that the proposed relief for Palo Verde, Unit 2 will provide reasonable assurance of adequate safety for the containment building. The NRC staff finds that complying with the requirements of the ASME Code, Section XI, as required by 10 CFR 50.55a, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(z)(2).

Therefore, effective November 19, 2020, the NRC authorizes the use of the proposed alternative at Palo Verde, Unit 2, to extend from the current February 8, 2021, deadline for performing the Unit 2, 35th year IWL Containment Post-Tensioning System Inspection until February 8, 2022.

All other requirements in ASME Code, Section XI for which relief was not specifically requested and approved in this relief request remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

This verbal authorization does not preclude the NRC staff from asking additional clarification questions regarding the proposed relief while subsequently preparing the written safety evaluation.

Siva P. Lingam
U.S. Nuclear Regulatory Commission
Project Manager
Palo Verde Nuclear Generating Station, Units 1, 2, and 3
Grand Gulf Nuclear Station
Entergy Fleet
Location: O-9E22; Mail Stop: O-9E03
Telephone: 301-415-1564
E-mail address: Siva.Lingam@nrc.gov

Hearing Identifier: NRR_DRMA
Email Number: 901

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From: Lingam, Siva

Created By: Siva.Lingam@nrc.gov

Recipients:

"Dixon-Herrity, Jennifer" <Jennifer.Dixon-Herrity@nrc.gov>
Tracking Status: None
"Colaccino, Joseph" <Joseph.Colaccino@nrc.gov>
Tracking Status: None
"Lehman, Bryce" <Bryce.Lehman@nrc.gov>
Tracking Status: None
"Carl.Stephenson@aps.com" <Carl.Stephenson@aps.com>
Tracking Status: None
"Sarah.Kane@aps.com" <Sarah.Kane@aps.com>
Tracking Status: None
"Nawaporn.Aaronscooke@aps.com" <Nawaporn.Aaronscooke@aps.com>
Tracking Status: None
"Pettis, bob" <Robert.Pettis@nrc.gov>
Tracking Status: None
"Ma, John" <John.Ma@nrc.gov>
Tracking Status: None
"Michael.Dilorenzo@aps.com" <Michael.Dilorenzo@aps.com>
Tracking Status: None

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