



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 20, 2020

Mr. Fadi Diya
Senior Vice President and
Chief Nuclear Officer
Ameren Missouri
Callaway Energy Center
8315 County Road 459
Steedman, MO 65077

SUBJECT: CALLAWAY PLANT, UNIT NO. 1 – COVID-19 RELIEF REQUEST CC-01
CONTAINMENT TENDON INSPECTION (EPID L-2020-LLR-0058)

Dear Mr. Diya:

By letter dated April 6, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20097F643), Union Electric Company (dba Ameren Missouri, the licensee), submitted a relief request, for Callaway Plant, Unit No. 1 (Callaway), from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Subsection IWL, for the period beginning on June 30, 2020, and ending on June 30, 2021.

Specifically, pursuant to the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(z)(2), the licensee submitted Relief Request CC-01 requesting to postpone required ASME Code, Section XI inspections of the unbonded post-tensioning system for 1 year on the basis that complying with the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

As set forth in the enclosed safety evaluation, the U.S. Nuclear Regulatory Commission (NRC) staff has determined that complying with the specified requirement 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 the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, the NRC staff authorizes the proposed alternative at Callaway for the period beginning on June 30, 2020, and ending on June 30, 2021, during the Callaway third 10-year Containment Exterior and Tendon Inspection Program interval.

F. Diya

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If you have any questions, please contact the Project Manager, John Klos at 301-415-5136 or via e-mail at John.Klos@nrc.gov.

Sincerely,

/RA/

Jennifer L. Dixon-Herrity, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure:
Safety Evaluation

cc: Listserv



UNITED STATES
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SAFETY EVALUATION

BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST CC-01 CONTAINMENT TENDON INSPECTION REQUIREMENTS

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

1.0 INTRODUCTION

By letter dated April 6, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20097F643), Union Electric Company (dba Ameren Missouri, the licensee), requested relief from the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Subsection IWL for the period beginning on June 30, 2020, and ending on June 30, 2021, for Callaway Plant, Unit No. 1.

Specifically, pursuant to the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) paragraph 50.55a(z)(2), "Hardship without a compensating increase in quality and safety," the licensee submitted Relief Request CC-01 requesting to postpone required ASME Code, Section XI inspections of the unbonded post-tensioning system for 1 year on the basis that complying with the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

2.0 REGULATORY EVALUATION

Pursuant to 10 CFR 50.55a(g)(4), "Inservice inspection standards requirement for operating plants," throughout the service life of a nuclear power facility, components that are classified as Class CC pressure retaining components must meet the requirements set forth in Section XI of the ASME Code, Subsection IWL, as incorporated by reference in paragraph (a)(1)(ii) subject to the conditions listed in paragraph (b)(2)(ix) of 10 CFR 50.55a. Section XI, Subsection IWL of the ASME Code, provides rules for inservice inspection and repair/replacement activities of the reinforced concrete and post-tensioning system components of Class CC containment structures. The appropriate edition of the code to be used for successive 120-month inspection intervals is determined pursuant to paragraph 10 CFR 50.55a(g)(4)(ii). Alternatives to the requirements of 10 CFR 50.55a(g) may be authorized by the NRC pursuant to 10 CFR 50.55a(z)(2) if the licensee demonstrates that the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Enclosure

Pursuant to 10 CFR 50.55a(g)(4)(ii), the licensee's code of record for the third 10-year containment inservice inspection interval is the 2007 Edition with the 2008 Addenda, of ASME Code, Section XI, Subsection IWL. Subarticle IWL-2420, "Unbonded Post-Tensioning Systems," specifies in paragraph (a) that "[u]nbonded post-tensioning systems shall be examined in accordance with IWL-2520 at 1, 3, and 5 years following the completion of the containment Structural Integrity Test and every 5 years thereafter." It further specifies in paragraph (c) that "[t]he 10-year and subsequent examinations shall commence not more than 1 year prior to the specified dates and shall be completed not more than 1 year after such dates. If plant operating conditions are such that examination of portions of the post-tensioning system cannot be completed within this stated time interval, examination of those portions may be deferred until the next regularly scheduled plant outage." Table IWL-2500-1, "Examination Category L-B, Unbonded Post-Tensioning System," provides the examination and test requirements for the post-tensioning system components.

Callaway's specified date for the 35th surveillance year subsequent examination, pursuant to IWL-2420(a), is June 2019. Therefore, per IWL-2420(c), Callaway's deadline for the completion of the 35th year inspection is June 30, 2020. By this relief request, the licensee requests postponing the completion date for the 35th year surveillance to no later than June 30, 2021, pursuant to 10 CFR 50.55a(z)(2) because of hardship or unusual difficulty imposed by the national emergency declaration due to the COVID-19 pandemic.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Proposed Alternative

The licensee's alternative request CC-01 applies to inspection of the containment unbonded post-tensioning system inspections. Specifically, the request applies to the requirement in subparagraph IWL-2420(c) which states that, "[t]he 10-year and subsequent examinations [of unbonded post-tensioning systems] shall commence not more than 1 year prior to the specified dates and shall be completed not more than 1 year after such dates. If plant operating conditions are such that examination of portions of the post-tensioning system cannot be completed within this stated time interval, examination of those portions may be deferred until the next regularly scheduled plant outage."

The licensee's proposed alternative corresponding to the above code requirement is a one-time 12-month extension to the completion date of the unbonded post-tensioning system examination for the 35th year inspection. Currently the inspection deadline is June 30, 2020; however, the proposed alternative would postpone the required inspections to be completed no later than June 30, 2021. The alternative is requested from June 30, 2020, through June 30, 2021. The licensee requested authorization for use of the proposed alternative pursuant to 10 CFR 50.55a(z)(2), on the basis that complying with the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, due to the ongoing national emergency related to the COVID-19 pandemic.

In its request, the licensee noted that on March 13, 2020, the United States government declared a national emergency associated with the COVID-19 outbreak. The Centers for Disease Control and Prevention (CDC) has determined that COVID-19 poses a serious health risk. The licensee noted that completing the containment post-tensioning system inspections at this time could create the potential for the inadvertent spread of the virus from contract inspectors to Callaway staff. Exposure of Callaway staff to the virus could impact the availability

of enough staff to safely operate the plant and could result in additional related health risks to the licensee's personnel.

Callaway is currently in Stage 2 of its COVID-19 action plan, which limits the number of workers onsite to only those required to operate the plant. Additional personnel who need to be onsite to support plant operations must be individually approved for site access and undergo health screenings prior to entering the protected area. Stage 3 of the action plan would require essential staff to be sequestered onsite. Based on the action plan, the containment post-tensioning system inspection, which was scheduled to begin on March 30, 2020, has been postponed. The licensee noted that it is unclear if the current restrictions will be relaxed in time to complete the proposed inspection and its deadline; therefore, a 12-month extension is requested.

In its request, the licensee stated that the prior containment post-tensioning surveillances have been completed successfully with no abnormal degradation. The abstract from the most recent inspection was included as an attachment to the relief request and the report concluded that the structural and functional integrity of the post-tensioning system was acceptable.

3.2 NRC Staff Evaluation

The NRC staff reviewed the information provided in the proposed alternative request, as well as general information available regarding the COVID-19 pandemic, and noted that the CDC has identified social distancing as a method for mitigating the spread of the COVID-19 virus and defines social distancing as remaining out of congregate settings, avoiding mass gatherings, and maintaining distance (approximately 6 feet or 2 meters) from others when possible. The NRC staff also noted that the subject containment inspections require a significant number of contractors to be onsite working closely with licensee personnel in conditions that may not be conducive to social distancing. Therefore, the NRC staff finds that completing the inspections as required would result in a hardship or unusual difficulty.

In addition, the NRC staff reviewed the licensee's past inspection results and noted that the inspections have been completed successfully with no indications of degradation to the post-tensioning system that would compromise the structural integrity of the containment building. The results from the most recent inspection (2015), showed that all the as-found tendon lift-off forces exceeded the predicted lower limit, and a regression analysis demonstrated that the forces would not drop below the minimum required value (MRV) at the next surveillance period. In addition to the information provided in the licensee's request, the NRC staff reviewed the safety evaluation report for the Callaway license renewal (ADAMS Accession No. ML15068A342) and noted that the licensee's regression analysis demonstrated the lift-off forces in the post-tensioning system will remain above the MRV for the current period and the duration of the renewed license. The NRC staff also noted that the licensee conducted a drone inspection of the exterior of the containment building in February 2020 and determined that only minor cosmetic repairs were necessary. Since 1) the previous inspection results were all acceptable, 2) the regression analysis shows that the tendon forces in the post-tensioning system is expected to remain above the MRV for each tendon type for the current period and the duration of the renewed license, and 3) the recent drone visual inspection showed no significant signs of degradation; therefore, the NRC staff finds that conducting the required inspections of the unbonded post-tensioning system by the current June 30, 2020, deadline will not provide an increase in quality or safety commensurate while considering the increased hardship.

Based on its review, the NRC staff finds that it is acceptable for the licensee to defer completion of the required ASME Section XI, Table IWL-2500-1 (L-B) inspections of the containment post-tensioning system for 1 year, or until no later than June 30, 2021. The NRC staff also finds that there is reasonable assurance that the structural integrity of the containment building will be maintained until June 30, 2021.

4.0 CONCLUSION

As set forth above, the NRC staff determines that complying with the specified requirement would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Accordingly, the NRC staff also concludes that the licensee has adequately addressed the regulatory requirements set forth in 10 CFR 50.55a(z)(2). Therefore, the NRC staff authorizes the proposed alternative at Callaway for the period beginning on June 30, 2020, and ending on June 30, 2021, during the Callaway third 10-year Containment Exterior and Tendon Inspection Program interval.

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

Principal Contributor: B. Lehman

Date: April 20, 2020

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 CONTAINMENT TENDON INSPECTION (EPID L-2020-LLR-0058)
 DATED APRIL 20, 2020

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