

From: Galvin, Dennis
Sent: Tuesday, June 16, 2020 3:32 PM
To: Drew Richards (amrichards@stpegs.com)
Cc: Nic Boehmisch (nboehmisch@stpegs.com)
Subject: South Texas Project –2nd Round Request for Additional Information - Proposed Alternative to ASME Code Requirements for the Repair of Essential Cooling Water System Class 3 Buried Piping (EPID: L 2019-LLR-0096)
Attachments: STP RR CFRP Piping Repair Final 2nd Round RAI L-2019-LLR-0096 2020-06-16.pdf

Mr. Richards,

By letter dated September 26, 2019 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML19274C393), as supplemented by letters dated November 26, 2019 (ADAMS Accession No. ML19331A202), and March 9, 2020 (ADAMS Accession No. ML20069L499), STP Nuclear Operating Company (the licensee) requested Nuclear Regulatory Commission (NRC) approval of a proposed alternative to Section XI, IWA-4221(b) of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), which requires repaired/replacement piping to meet the original Construction Code requirements. The proposed alternative is to allow the use of a carbon fiber reinforced polymer (CFRP) composite system for the internal repair of the buried Essential Cooling Water (ECW) piping during the third and fourth 10-year ISI intervals at South Texas Project Electric Generation Station (STP), Units 1 and 2.

The NRC staff has determined that additional information is needed to complete its review. The request for additional information (RAI) was transmitted to the licensee in draft form on June 10, 2020. A RAI clarification call was held on June 16, 2020, and the licensee indicated that it could provide responses to the RAIs by July 16, 2020. The NRC staff agreed with this date.

If you have any questions, please contact me at (301) 415-6256 or Dennis.Galvin@nrc.gov.

Respectfully,

Dennis Galvin
Project Manager
U.S Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Division of Operating Reactor Licensing
Licensing Project Branch 4
301-415-6256

Docket No. 50-498, 50-499

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Subject: South Texas Project –2nd Round Request for Additional Information - Proposed
Alternative to ASME Code Requirements for the Repair of Essential Cooling Water System Class 3
Buried Piping (EPID: L 2019-LLR-0096)

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From: Galvin, Dennis

Created By: Dennis.Galvin@nrc.gov

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"Nic Boehmisch (nboehmisch@stpegs.com)" <nboehmisch@stpegs.com>

Tracking Status: None

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REQUEST FOR ADDITIONAL INFORMATION
PROPOSED ALTERNATIVE TO ASME SECTION XI REQUIREMENTS FOR
REPAIR/REPLACEMENT OF ESSENTIAL COOLING WATER CLASS 3
BURIED PIPING IN ACCORDANCE WITH 10 CFR 50.55a(z)(1)
STP NUCLEAR OPERATING COMPANY
SOUTH TEXAS PROJECT UNITS 1 AND 2
DOCKET NOS. 50-498 AND 50-499

By letter dated September 26, 2019 (Agencywide Documents and Access Management System (ADAMS) Accession No. ML19274C393), as supplemented by letters dated November 26, 2019 (ADAMS Accession No. ML19331A202), and March 9, 2020 (ADAMS Accession No. ML20069L499), STP Nuclear Operating Company (the licensee) requested Nuclear Regulatory Commission (NRC) approval of a proposed alternative to Section XI, IWA-4221(b) of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), which requires repaired/replacement piping to meet the original Construction Code requirements. The proposed alternative is to allow the use of a carbon fiber reinforced polymer (CFRP) composite system for the internal repair of the buried Essential Cooling Water (ECW) piping during the third and fourth 10-year ISI intervals at South Texas Project Electric Generation Station (STP), Units 1 and 2.

To complete its review, the NRC staff requests the following additional information.

EMIB/NPHP ROUND 2-RAI-1

At a May 11, 2020 public skype meeting at the American Society of Mechanical Engineer's Boiler and Pressure Vessel (ASME) Code meeting on development of a Carbon Fiber Repair Process (CFRP) ASME Code Case, new data was presented showing the effect of curing temperature and test temperature on the tensile strength of CFRP. The data preliminarily identifies an issue with a potential reduction in strength to be considered in the final application design strength for the life of the repair (e.g. approximately a 50 percent reduction in strength at design or maximum operating temperatures versus strength at room temperature when the polymer is cured at room temperature). The preliminary data suggested that the strength of the CFRP depends on the curing temperature and will have an impact on the CFRP strength used in the design evaluations.

The staff needs additional information to ensure that the final installed material strength is comparable to the design strength. Therefore, the staff requests that the licensee describe the processes planned for implementation of the CFRP. This description should include the following:

(a) details to address the application of in-field curing of each layer, including temperature, duration of curing and a description of how each layer is cured through the installation process.

(b) details to address verification testing of the final field sample strength, including location of test samples to be evaluated, number of tests, testing temperature, curing temperature, and a description of the testing process.

(c) an assessment of how the licensee will validate the design strength used to develop the CFRP and used in design evaluations with the final field sample strength tests.