



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

October 28, 2014

Mr. Fadi Diya  
Senior Vice President and  
Chief Nuclear Officer  
Union Electric Company  
P.O. Box 620  
Fulton, MO 65251

SUBJECT: CALLAWAY PLANT, UNIT 1 – REQUEST FOR ADDITIONAL INFORMATION  
ROUND 2 RE: REVISION TO FINAL SAFETY ANALYSIS REPORT  
STANDARD PLANT SECTION 3.6 FOR HIGH DENSITY POLYETHYLENE  
CRACK EXCLUSION (TAC NO. MF3202)

Dear Mr. Diya:

By application dated December 6, 2013, as supplemented September 2, 2014, to the U.S. Nuclear Regulatory Commission (NRC), Union Electric Company (dba Ameren Missouri, the licensee) submitted a license amendment request to revise the Final Safety Analysis Report-Standard Plant (FSAR-SP) Section 3.6.2.1.2.4, "ASME [American Society of Mechanical Engineers] Section III and Non-Nuclear Piping – Moderate-Energy," to include a new pipe crack exclusion allowance at Callaway Plant, Unit 1.

The NRC staff has determined that additional information, as requested in the enclosure, is needed to complete its review. These questions were provided to Mr. T. Elwood of your staff on October 21, 2014. Please provide a response to the questions within 45 days of the date of this letter. If circumstances result in the need to revise the requested response date, please contact me at 301-415-2296 or via e-mail at [Fred.Lyon@nrc.gov](mailto:Fred.Lyon@nrc.gov).

Sincerely,

A handwritten signature in cursive script that reads "CF Lyon".

Carl F. Lyon, Project Manager  
Plant Licensing Branch IV-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-483

Enclosure:  
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

LICENSE AMENDMENT REQUEST TO REVISE FSAR-SP 3.6

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. 50-483

By application dated December 6, 2013 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML13340A775), as supplemented September 2, 2014 (ADAMS Accession No. ML14245A653), to the U.S. Nuclear Regulatory Commission (NRC), Union Electric Company (dba Ameren Missouri, the licensee) submitted a license amendment request (LAR) to revise the Final Safety Analysis Report-Standard Plant (FSAR-SP) Section 3.6.2.1.2.4, "ASME [American Society of Mechanical Engineers] Section III and Non-Nuclear Piping – Moderate-Energy," to include a new pipe crack exclusion allowance at Callaway Plant, Unit 1.

The NRC staff has determined that the additional information requested below is needed to complete its review.

**Mechanical and Civil Engineering Branch (EMCB)-Callaway-MF3202-HDPE-RAI-9**

The response to EMCB-Callaway MF3202-HDPE-RAI-8 contains Table 1 in Attachment 1 of the licensee's letter dated September 2, 2014 (Page 10 of 10). Please provide the following additional information:

- (a) Please clarify whether the computed stresses and the crack postulation threshold limits in Table 1 are for the ASME Class 3 High Density Polyethylene (HDPE) moderate energy piping (not the buried portion; that is, the portion between the buried portion and the metallic piping interface) in the Control Building Basement, and in the Ultimate Heat Sink (UHS) Penetration Room
- (b) The computed stresses in Table 1 include stresses based on ASME equations (9-B) and (10). Please clarify if equation 9-B portion of the stresses include contribution from axial force and moment from dead weight (non-buried portion of the HDPE piping) in addition to pressure, Operating Basis Earthquake (OBE), and Seismic Anchor Movement (SAM). Further, pages 4 of 15 through 14 of 15 of Attachment 4, Section 5 of the licensee's letter dated December 6, 2013, mention pressure, OBE, and SAM, and do not mention dead weight. If it does not include contribution from dead weight, please explain the rationale.
- (c) Table 1 (Page 10 of 10 in Attachment 1 of the licensee's letter dated September 4, 2014) shows a temperature of 175 degrees Fahrenheit (°F) as the thermal mode analyzed for the Essential Service Water (ESW) return trains in Control Room Basement and UHS Penetration Room. The equation 10 portion

Enclosure

of computed stresses for the return trains therefore includes 175 °F thermal mode. Please clarify if the equation 9-B allowable stress ( $S_h$ ) used in the crack postulation threshold limit for HDPE corresponds to the allowable stress at 175 °F. In case  $S_h$  at 175 °F is not used, please explain the rationale.

- (d) Provide a brief discussion related to the fire hazard of the non-buried sections of the HDPE piping in the Control Building Basement, in the UHS Penetration Room, and in the yard vault on any safety-related commodities in the vicinity. Please also address the fire resistance characteristics of the insulation and any wrapping used on the HDPE piping.

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*/RA/*  
Carl F. Lyon, Project Manager  
Plant Licensing Branch IV-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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Enclosure:  
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cc w/encl: Distribution via Listserv

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ADAMS Accession No.: **ML14294A775**

\*email dated October 20, 2014

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