Ameren MISSOURI

Callaway Plant

April 4, 2017

ULNRC-06362

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

Ladies and Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
RENEWED FACILITY OPERATING LICENSE NPF-30
SPECIAL REPORT 2017-01 (PAM REPORT):
INOPERABILITY OF A POST ACCIDENT
MONITORING (PAM) INSTRUMENT

Enclosed Special Report 2017-01 (PAM Report) addresses inoperability of the Containment Radiation Level Function for greater than 7 days. Callaway Plant Technical Specification (TS) 5.6.8, "PAM Report," requires submittal of such a report within 14 days after entry into Condition F of TS 3.3.3, "Post Accident Monitoring (PAM) Instrumentation." Condition F of TS 3.3.3 was entered on March 23, 2017, due to both channels of Containment Radiation Level High Range instrumentation (TS Table 3.3.3-1, Function 9) being inoperable.

No new commitments are identified in this correspondence. None of the material in this report is considered proprietary by Union Electric.

If you have any questions or require additional information, please contact Mr. Thomas Elwood, Supervising Engineer, Regulatory Affairs and Licensing at 314-225-1905.

Sincerely,

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Special Report 2017-01

PAM Report

Requirement

Callaway Plant Unit 1 Technical Specification (TS) 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," contains requirements for the Containment Level Radiation (High Range) instrumentation. TS 3.3.3 Limiting Condition For Operation (LCO) requires two Containment Level Radiation instrumentation channels to be Operable during MODES 1, 2, and 3. With both of the required Containment Level Radiation instruments inoperable, Required Action C.1 specifies, "Restore all but one channel to OPERABLE status." The specified completion time is 7 days. With two of the required Containment Level Radiation instrumentation channels inoperable for more than 7 days, Required Action F.1 applies, which specifies, "Initiate action in accordance with Specification 5.6.8."

TS 5.6.8, "PAM Report," states "When a report is required by Condition B or F of LCO 3.3.3, 'Post Accident Monitoring (PAM) Instrumentation,' a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status."

Background:

Callaway Plant declared both channels of the Containment Radiation Level (High Range) instrumentation inoperable on March 16, 2017 in response to receipt and evaluation of industry operating experience (OE) concerning this instrumentation. During inspections at H.B. Robinson it was identified that the Containment Radiation Level detectors could be affected by thermally induced current (TIC) and/or moisture intrusion into the coaxial Amphenol (N) style connector for this instrumentation by water permeating the Rockbestos RSS-6-104/LE coaxial cable jacket during a Loss of Coolant Accident (LOCA) or Main Steam Line Break (MSLB). The issue is applicable to Callaway Plant and could impact the indication outputs of both Containment Radiation Level detectors.

Technical Specification (TS) 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," Condition C was entered when both Containment Radiation Level channels were declared inoperable. TS Table 3.3.3-1, Function 9, "Containment Radiation Level (High Range)," requires both channels to be OPERABLE. Required Action C.1 of TS 3.3.3 requires restoring all but one channel to OPERABLE status within 7 days. On March 23, 2017, TS 3.3.3 Condition F was entered when the Required Action and associated Completion Time of Condition C was not met. Required Action F.1 requires initiation of action in accordance with TS 5.6.8, "PAM Report," which requires a report to be submitted within 14 days after entry into Condition F.

Containment Radiation Level (High Range) is a Type A, Category 1 variable per Regulatory Guide 1.97, Rev.2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident" provided to monitor significant radiation releases and to provide release assessment for use by operators in determining the need to invoke site emergency plans. Containment radiation level is used to determine if a high energy line break (HELB) has occurred and whether the event is inside or outside of containment.

Preplanned Alternate Method of Monitoring

An alternate means of monitoring, as described in the Bases for TS 3.3.3 Required Action F.1, is available as directed by plant procedure HTP-ZZ-07010, "Alternate Method for Obtaining CHARMS Readings." The procedurally directed alternate method uses portable survey instruments which would be used to measure radiation levels at pre-determined locations external to the Reactor Building. Correlations are provided to determine a Containment radiation level based on the external survey results.

Cause of the Inoperability

Callaway Plant declared both channels of Containment Radiation Level (High Range) inoperable on March 16, 2017 due to potential adverse effects of thermally induced current (TIC) and/or water permeation of the Rockbestos coaxial cable jacket during a LOCA or MSLB.

Plans and Schedule for Restoring the Instrumentation Channel to OPERABLE status

Containment Radiation Level detectors and cables are located inside the Containment Building. Due to the location of the cables, significant dose could be incurred during examination and repair of the cables. An engineering evaluation is in progress. If more robust cables are determined to be needed, an implementation schedule will be developed to install them, once a determination has been made from the ongoing evaluation.