PO Box 620 Fulton, MO 65251

April 26, 2010

ULNRC-05697

U.S. Nuclear Regulatory Commission Attn: Document Control Desk Mail Stop P1-137 Washington, DC 20555-0001

10 CFR 50.90

Ladies and Gentlemen:



DOCKET NUMBER 50-483 CALLAWAY PLANT UNION ELECTRIC CO. APPLICATION FOR AMENDMENT TO FACILITY OPERATING LICENSE NPF-30 <u>REVISION TO TECHNICAL SPECIFICATION 3.3.2 FUNCTION 6.g</u> <u>ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS) INSTRUMENTATION AUXILIARY FEEDWATER ACTUATION ON TRIP OF ALL MAIN FEEDWATER PUMPS TAC NO. ME3595 (LDCN 10-0011)</u>

Reference: ULNRC-05687 dated March 29, 2010

In the above reference, AmerenUE submitted an application for amendment to Facility Operating License Number NPF-30 for the Callaway Plant.

That amendment application proposed changes to Technical Specification (TS) 3.3.2, "Engineered Safety Feature Action System (ESFAS) Instrumentation," that would revise Condition J to allow one or more inoperable channels for Function 6.g of TS Table 3.3.2-1.

During the NRC staff's review a request for additional information (RAI) was identified. Attachment 1 provides the requested information. The information provided in Attachment 1 does not affect the licensing evaluations submitted in the referenced application or alter their conclusions.

AmerenUE continues to request approval of this proposed license amendment prior to May 14, 2010. AmerenUE further requests that the license amendment be made effective upon NRC issuance to be implemented within 30 days. As was the case with the referenced application, no commitments are contained in this correspondence.

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If you have any questions on this amendment application or the attached information, please contact me at (573) 676-8719 or Mr. Thomas Elwood at (314) 225-1905.

I declare under penalty of perjury that the foregoing is true and correct.

Very truly yours,

Executed on: <u>4/26/2010</u>

Scott A. Maglio

Regulatory Affairs Manager

Attachment 1: RAI Responses

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cc: U.S. Nuclear Regulatory Commission (Original and 1 copy) Attn: Document Control Desk Washington, DC 20555-0001

> Mr. Elmo E. Collins, Jr. Regional Administrator U.S. Nuclear Regulatory Commission Region IV 612 E. Lamar Blvd., Suite 400 Arlington, TX 76011-4125

> Senior Resident Inspector Callaway Resident Office U.S. Nuclear Regulatory Commission 8201 NRC Road Steedman, MO 65077

Mr. Mohan C. Thadani (2 copies) Senior Project Manager, Callaway Plant Office of Nuclear Reactor Regulation U. S. Nuclear Regulatory Commission Mail Stop O-8G14 Washington, DC 20555-2738 ULNRC-05697 April 26, 2010 Page 4

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RESPONSES TO NRC REQUEST FOR ADDITIONAL INFORMATION (RAI) <u>QUESTIONS REGARDING LICENSE AMENDMENT REQUEST LDCN 10-0011</u>

By letter dated March 29, 2010 (i.e., letter ULNRC-05687), AmerenUE (Callaway Plant licensee) submitted a request to amend Technical Specification 3.3.2 on an exigent basis. The NRC staff has reviewed the licensee's request and has identified a need for additional information. To complete its review of the proposed TS changes, the staff requests the licensee's response to the following two questions.

1. Has the licensee considered a redesign of the turbine-driven MFW pump oil pressure channels to avoid an incorrect status indication for the turbine-driven MFW pump when it is in reset?

Response:

As discussed in the Operating Experience Review section of Attachment 1 to ULNRC-05687, under item 4.0 "Technical Analysis," the oil pressure channels serve their design function of indicating whether the main feedwater pump (MFP) turbines are tripped; however, those channels do not provide definitive indications that the MFPs are, in fact, providing feedwater flow to the steam generators. Low MFP turbine hydraulic oil pressure is a "direct" indication that the MFP turbine is tripped but an "indirect" indication of the MFP capability to supply feedwater to the steam generators. The MFP turbine hydraulic oil pressure provides a false indication of an MFP's capability to supply feedwater to the steam generators when the MFP turbine is "Reset" in MODES 1 and 2 but the pump is not actively supplying flow to the steam generators. This situation is routinely created during normal plant startup when one MFP is in operation but the other MFP turbine has been "Reset" for various maintenance and operational activities. Since the current version of TS 3.3.2 Condition J does not recognize having more than one MFP trip channel inoperable, the plant is in a TS LCO 3.0.3 condition each time a MFP is placed in a "Reset" condition in the LCO Applicability when two channels are rendered inoperable but the MFP is not providing flow to the SGs.

Various redesign options and remedies for this situation might include:

• A design change could be pursued to install manual trip switches that would force a trip on the Function 6.g circuitry when a MFP turbine is "Reset" but the MFP is not yet providing feedwater flow to the steam generators. However, this would still require a change to Condition J of TS 3.3.2 since two channels on the same MFP would be rendered inoperable by the forced trip. Artificially imposing a trip on the Function 6.g channels would make them incapable of responding as designed to their full range of inputs. The oil pressure switches can experience a pressure range of 0-200 psig. The expected performance of the switches is for the channel to trip at a decreasing pressure below 81.5 psig and for the channel to reset if the pressure rises 20 psi above the nominal setpoint. When a trip is forced on the channel, it can not meet this expected performance for the full range of inputs. The TS Definitions for Channel Calibration, Channel Operational Test, and TADOT require that an operable channel provide the desired outputs for known values of channel inputs. This design change would facilitate compliance with revised Action J.1, but would not eliminate the need for the TS change to the TS 3.3.2 Condition J wording.

- A design change could be pursued to reduce the number of channels from two per MFP to one per MFP; however, this would require a TS change to the Required Channels column for Function 6.g of TS Table 3.3.2-1. The advantage of this change would be that the existing TS 3.3.2 Condition J would cover the situation where one MFP is "Reset" and not providing feedwater flow to the steam generators since this would involve only one inoperable channel as opposed to the LCO 3.0.3 entry as discussed above. Disadvantages include loss of redundancy, increased likelihood of inadvertent AFW actuations, and maintaining separation criteria (if channel 1 were associated with MFP 'A' and channel 4 were associated with MFP 'B', separation issues would have to be overcome for both channels providing inputs to the Channel I BOP ESFAS cabinet SA036A or to the Channel IV BOP ESFAS cabinet SA036B).
- A design change could be pursued to provide a different input to BOP ESFAS for AFW actuation on a loss of main feedwater flow; however, this would require a TS change to the title of Function 6.g in TS Table 3.3.2-1. For instance, the main feedwater flow transmitters could provide this input. However, these transmitters and the associated circuitry are non-Class 1E and would have to be upgraded.

No design change could be implemented prior to the May 14, 2010 need date for this amendment. Design changes for Refuel 17 (which began on April 17, 2010) were issued to work planners over a year ago on April 5, 2009. A design change to Function 6.g, which is associated with the BOP ESFAS protection system, would only be prudent if due diligence and the proper attention to detail were given to developing the modification package and considering all of the consequences of that design change. This can not be accomplished prior to the established need date. In addition, none of the precedents and references cited in ULNRC-05687 included design changes at those plants.

AmerenUE does intend to pursue a different option for dealing with Function 6.g in the long term. As part of the risk-informed industry initiative 8a, we are evaluating whether this function is a candidate for relocation from TS 3.3.2 since it does not satisfy the criteria of 10 CFR 50.36(c)(2)(ii) for TS inclusion. It does not mitigate any accident (Criterion 3) nor is it risk-significant (Criterion 4). Likewise, Criteria 1 and 2 (reactor coolant pressure boundary degradation and initial condition of an accident analysis) do not apply to Function 6.g.

2. If a redesign were to be implemented, would the requested TS change still be required?

Response:

See the response to question 1. The TS change is still required by May 14, 2010.