

July 29, 2005

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Station P1-137
Washington, D.C. 20555

ULNRC-05178

Ladies and Gentlemen:

DOCKET NUMBER 50-483
UNION ELECTRIC COMPANY
CALLAWAY PLANT

TECHNICAL SPECIFICATION REVISIONS ASSOCIATED WITH THE
STEAM GENERATOR REPLACEMENT PROJECT



- References:
1. ULNRC-05056 dated September 17, 2004
 2. ULNRC-05117 dated February 11, 2005
 3. ULNRC-05145 dated May 26, 2005
 4. ULNRC-05157 dated June 17, 2005
 5. ULNRC-05159 dated June 17, 2005
 6. ULNRC-05169 dated July 15, 2005
 7. ULNRC-04158 dated December 3, 1999

In Reference 1 above AmerenUE transmitted an application for amendment to Facility Operating License Number NPF-30 for the Callaway Plant in support of the replacement steam generators to be installed during Refuel 14 (fall 2005). This letter provides additional information on three issues recently raised by the NRC staff during the review of that application.

In Reference 5 above AmerenUE responded to several requests for additional information (RAIs) from the NRC Reactor Systems Branch. The following discussion provides additional clarification and a new commitment regarding the responses to RAI Questions 11, 12, and 45.

RAI #11

In the response to Question 11 in Reference 5 it is stated that "the calculated values bound the maximum allowable PORV setpoints specified in the current Pressure Temperature Limits Report (PTLR); therefore, the PTLR is not being revised for the RSG project." The NRC staff would like to know the calculated values and maximum allowable PORV setpoints.

A001

The statements made in Section 4.3.5 of Appendix A to Reference 1 and in the response to Question 11 in Reference 5 were predicated on an assumption by Westinghouse that AmerenUE would limit the operation of reactor coolant pumps (RCPs) below a reactor coolant system (RCS) temperature of 200°F such that a maximum of two (2) RCPs would be allowed to operate whenever the RCS temperature was $\leq 200^\circ\text{F}$. AmerenUE has decided to implement Cold Overpressure Mitigation System (COMS) setpoints that have no RCP operation restrictions. These COMS setpoints are more limiting than their counterparts that have RCP operation restrictions, but will not present any undue burdens on plant operation. Since these COMS setpoints are more limiting than those currently presented in the PTLR, the PTLR will be revised and the COMS setpoints will be changed to implement the RSG project. The attachment to this letter shows the draft PTLR changes, which provide the new calculated values for RSG as well as the current maximum allowable PORV setpoints. The current COMS setpoints have not been revised since the initial PTLR submittal to NRC in Reference 7.

RAI #12

The NRC staff would like to know what computer methodology was used to perform the sensitivity discussed in the last paragraph of the response to Question 12 in Reference 5.

At the request of the NRC reviewer during the meeting held on May 18, 2005, Westinghouse performed an additional calculation based on the Loss of Load/Turbine Trip analysis in Section 6.3.4 of Appendix A to Reference 1 (which is the FSAR Chapter 15 deterministic-style analysis) crediting the second safety grade signal to demonstrate the adequacy of the installed primary safety valve (PSV) capacity in preventing over-pressurization of the RCS. The methodology, including the computer code used - RETRAN, is identical to that of Section 6.3.4 of Appendix A. The difference in these analyses involves the high pressurizer pressure reactor trip function, credited as the first safety grade signal in the FSAR Chapter 15 deterministic-style analysis; that trip was conservatively ignored in the additional sensitivity discussed in the last paragraph of the response to Question 12 in Reference 5.

RAI #45

Regarding question 45, a telecon was held on July 26, 2005 between Westinghouse and the NRC to discuss NRC's concern about the impact of non-integer size breaks on the limiting small break loss of coolant (SBLOCA) peak clad temperature (PCT) analyses. Callaway was a participant on that telephone call. The NRC staff recently identified a potential issue related to the impact of non-integer size breaks on the limiting SBLOCA PCT analysis for another plant which is considering a power up-rate. NRC approached Westinghouse to determine the extent of this issue on the analyses they have performed for other licensees. With respect to Callaway's amendment request for SG replacement (Reference 1 above), NRC has theorized that a break between the 3-inch analyzed small break case (which did not result in accumulator injection) and the 4-inch analyzed small break case (which did result in accumulator injection) to stem the cladding

July 29, 2005

Page 3

temperature rise) would result in a higher PCT value than reported for those analyzed cases. AmerenUE and Westinghouse believe this to be a generic industry issue.

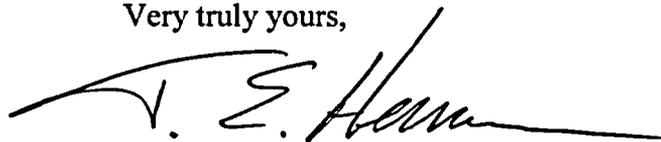
New large break and small break LOCA analyses were performed in support of the Callaway steam generator replacement project. Callaway's reanalyses were performed by Westinghouse using NRC-approved methodologies. Large break LOCA analysis results demonstrate a limiting PCT of 1939°F (per the responses to questions 16 and 17 in Reference 5) and SBLOCA analysis results demonstrate a limiting PCT of 1043°F (for the 4-inch case in Table 6.2.2-5 of Appendix A to Reference 1). These results demonstrate that Callaway is large break limited with respect to PCT and has greater than 1150°F margin to the 2200°F regulatory limit for SBLOCA. AmerenUE and Westinghouse have a high degree of confidence that this issue would not result in the PCT for SBLOCA becoming limiting or encroaching upon 2200°F.

The following commitment is submitted with the intent that its formal transmittal would allow NRC to proceed with completing the Safety Evaluation and issue the license amendment for the Callaway steam generator replacement project:

"In support of AmerenUE's license amendment request (Reference 1 above), associated with the steam generator replacement project, AmerenUE has initiated a corrective action program item (CAR 200406948 Action 27) that will track this issue. Callaway staff will follow this generic industry issue and will assess non-integer intermediate breaks consistent with the generic resolution. AmerenUE will provide a status update and discuss the method of how this issue will be assessed in the next required 10 CFR 50.46 report."

References 2, 3, 4, and 6 above provided various RAI responses, supplemental Technical Specification changes, and additional RAI response clarification in support of this amendment request. Nothing in the information provided above invalidates the findings of the licensing evaluations contained in Attachment 1 of Reference 1. The requested approval date and implementation plans for this amendment application remain unchanged from Reference 1. If you have any further questions on this amendment application, please contact us.

Very truly yours,



Timothy E. Herrmann
Manager-Nuclear Engineering Services

GGY/

Attachment - Draft PTLR Changes

ULNRC-05178

July 29, 2005

Page 4

cc: U.S. Nuclear Regulatory Commission (Original and 1 copy)
Attn: Document Control Desk
Mail Stop P1-137
Washington, DC 20555-0001

Mr. Bruce S. Mallett
Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4005

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

Mr. Jack N. Donohew (2 copies)
Licensing Project Manager, Callaway Plant
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop 7E1
Washington, DC 20555-2738

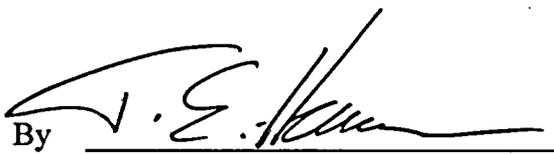
Missouri Public Service Commission
Governor Office Building
200 Madison Street
PO Box 360
Jefferson City, MO 65102-0360

Deputy Director
Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

STATE OF MISSOURI)
)
COUNTY OF CALLAWAY)

SS .

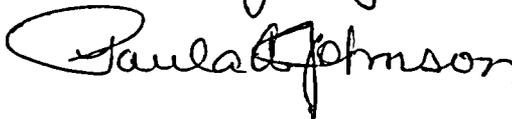
Timothy E. Herrmann, of lawful age, being first duly sworn upon oath says that he is Manager, Nuclear Engineering Services, for Union Electric Company; that he has read the foregoing document and knows the content thereof; that he has executed the same for and on behalf of said company with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By 

Timothy E. Herrmann
Manager, Nuclear Engineering Services

SUBSCRIBED and sworn to before me this 29th day of July, 2005.

PAULA A. JOHNSON
Notary Public - Notary Seal
STATE OF MISSOURI
Callaway County
My Commission Expires: July 31, 2007



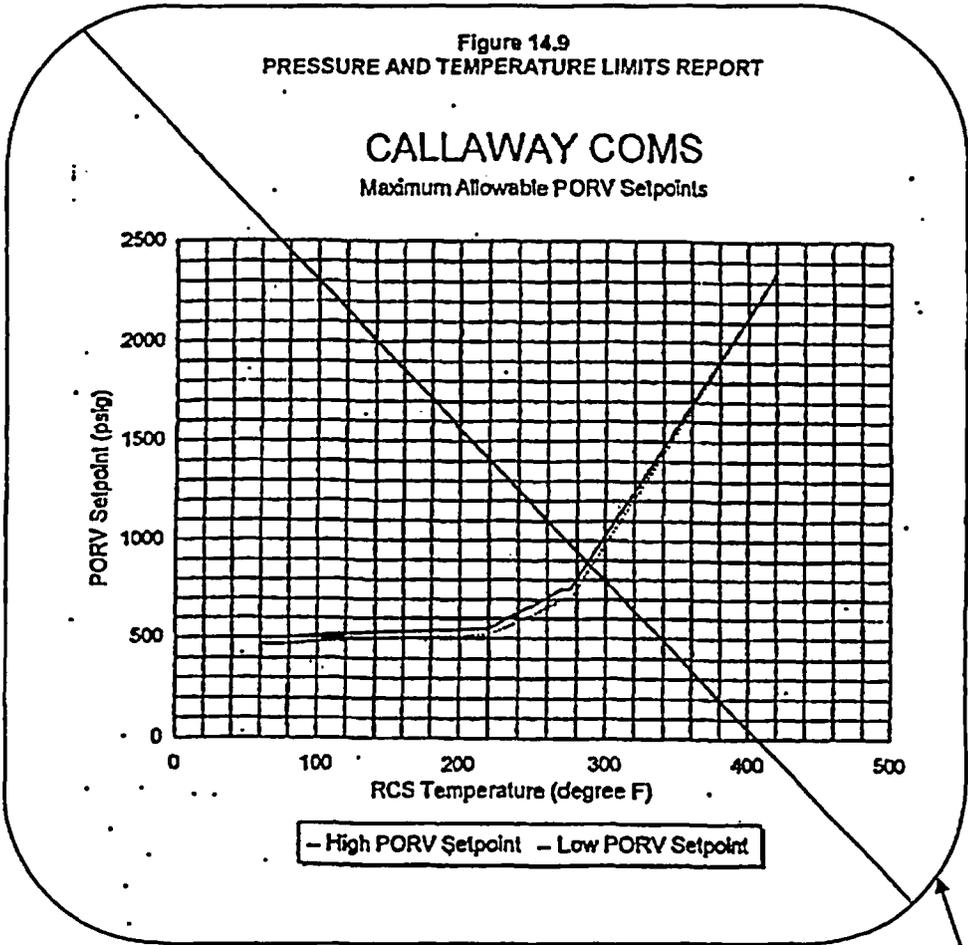


FIGURE 2.2-1 Maximum Allowed PORV Setpoint for the Cold Overpressure Mitigation System

See
Insert 2

Figure 14.9
PRESSURE AND TEMPERATURE LIMITS REPORT

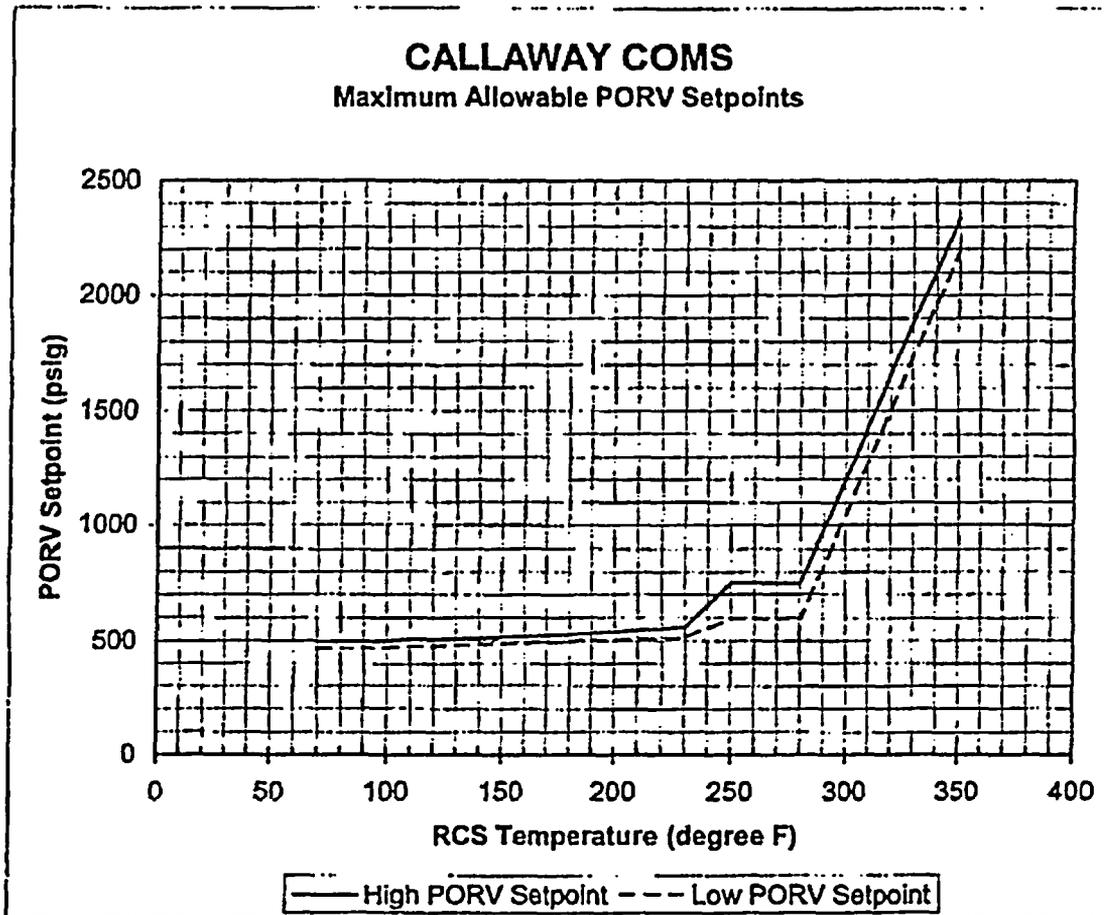
TABLE 2.2-1
CALLAWAY PLANT COMS MAXIMUM ALLOWABLE PORV SETPOINTS AT 20 EFPPY

Breakpoint Number	Maximum Allowable Function Generator Setpoints (Breakpoints)		
	Temperature - RCS (°F)	High Setpoint (psig)	Low Setpoint (psig)
1	60	501	471
2	76	501	471
3	130	525	495
4	170	555	505
5	220	550	520
6	245	650	600
7	270	750	700
8	275	750	700
9	420	2350	2350

NOTE: Setpoints assume that 0 reactor coolant pumps are running for T < 100°F and that 4 reactor coolant pumps are in operation for T ≥ 100°F.

all 4 or less RCPs are in operation

Temperature - RCS (°F)	High Setpoint (psig)	Low Setpoint (psig)
70	496	466
80	496	466
90	496	466
180	527	497
230	558	512
250	750	597
270	750	597
280	750	597
350	2335	2185



INSERT 2
FIGURE 14.9