Ameren MISSOURI

Callaway Plant

March 30, 2012

ULNRC-05844

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

10 CFR 50.55a(a)(3)(ii)

Ladies and Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
10CFR50.55a REQUEST: PROPOSED ALTERNATIVE
REGARDING ASME OM CODE REPLACEMENT INTERVAL FOR MAIN STEAM
ISOLATION VALVE ACTUATOR RUPTURE DISKS

Pursuant to 10 CFR 50.55a(a)(3)(ii), Union Electric Company (Ameren Missouri) hereby requests NRC approval of attached Relief Request VR-01 regarding requirements of the ASME OM Code, Mandatory Appendix 1, I-1360 for periodic replacement of Class 2 and 3 non-reclosing pressure relief devices. (The Code Edition currently applicable to Callaway is the ASME OM Code 2001 Edition through 2003 Addenda.) At Callaway, such relief devices include the rupture disks associated with the actuators for the main steam line isolation valves (MSIVs). Per the noted OM Code requirement, the rupture disks are to be replaced every 5 years (unless historical data indicates a requirement for more frequent replacement).

The current MSIV rupture disks were installed when the MSIV actuators were replaced in 2007, i.e., during Refuel 15 which was conducted during the spring of that year. The rupture disks are therefore required to be replaced this spring (2012), i.e., during the current Operating Cycle while the plant is or is expected to remain on line. Per the attached 10 CFR 50.55a request, however, Ameren Missouri proposes an alternative wherein the interval for replacing the MSIV rupture disks would be extended to the next refueling outage, i.e., by approximately one year, on a one-time basis. This would allow the replacement work to be done with the plant in a shutdown condition. Details regarding justification for the proposed alternative are provided in the attached request.

Ameren Missouri appreciates your prompt attention to this matter. No new regulatory commitments have been made or identified in this letter or its attachment. Please contact me at 573-823-4970 or Tom Elwood at 314-225-1905 for any questions you may have regarding this request.

Sincerely,

S. A. Maglio
Regulatory Affairs Manager

TBE/nls

Attachment

cc: Mr. Elmo E. Collins
Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV
1600 East Lamar Boulevard
Arlington, TX 76011-4511

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-8B1
Washington, DC 20555-2738

Index and send hardcopy to QA File A160.0761

Hardcopy:

Certrec Corporation
4150 International Plaza Suite 820
Fort Worth, TX 76109
(Certrec receives ALL attachments as long as they are non-safeguards and may be publicly disclosed.)

Electronic distribution for the following can be made via Other Situations ULNRC Distribution:

A. C. Heflin
F. M. Diya
C. O. Reasoner III
L. H. Graessle
S. A. Maglio
R. Holmes-Bobo
F. J. Bianco
J. C. Pitts
B. N. Oquejiofor
NSRB Secretary
T. B. Elwood
Mr. Bill Muilenburg (WCNOC)
Mr. Tim Hope (Luminant Power)
Mr. Ron Barnes (APS)
Mr. Tom Baldwin (PG&E)
Mr. Wayne Harrison (STPNOC)
Ms. Linda Conklin (SCE)
Mr. John O'Neill (Pillsbury Winthrop Shaw Pittman LLP)
Missouri Public Service Commission

10 CFR 50.55a Request Number VR-01

Proposed Alternative

In Accordance with 10 CFR 50.55a(a)(3)(ii)

Hardship or Unusual Difficulty without Compensating Increase in Level of Quality or Safety

1. **ASME Code Components Affected**

Rupture Disc Number	System	Safety Class	Category
ABPSE0001	Main Steam (AB)	2	D
ABPSE0002	Main Steam (AB)	2	D
ABPSE0003	Main Steam (AB)	2	D
ABPSE0004	Main Steam (AB)	2	D

2. **Applicable Code Edition and Addenda**

ASME OM Code 2001 Edition through 2003 Addenda

3. **Applicable Code Requirement**

Mandatory Appendix 1, I-1360: Class 2 and 3 non-reclosing pressure relief devices shall be replaced every 5 years unless historical data indicates a requirement for more frequent replacement.

Safety Class 2: Represents the ASME Code Class of the rupture discs.

Category D: Represents valves that are actuated by an energy source capable of only one operation, such as rupture discs or explosively actuated valves.

4. **Reason for Request**

Pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (a)(3)(ii), relief is requested from the requirement of the ASME OM Code, Mandatory Appendix 1, I-1360. The basis of the relief request is that the proposed alternative (explained later) would extend the 5-year replacement interval one time, from April 11, 2012 until June 2013 (Refuel 19).

The Main Steam Isolation Valve (MSIV) Rupture Discs (ABPSE0001/2/3/4) are currently scheduled to be replaced online per the mentioned ASME OM Code requirement. The rupture discs were installed in 2007 (Refuel 15). Performing this surveillance activity will involve significant maintenance activities and out-of-service time, including the hanging of tags (workman's protection assurance), performing the rupture disc replacement work, clearing tags, and performing applicable post maintenance tests (PMT). Isolating the rupture discs for this work makes the MSIVs inoperable and requires entry into plant Technical Specification (T/S) 3.7.2.F actions: 8 hours to restore or hot standby in the next 6 hours. Based on the short T/S duration time and the time needed to replace these rupture discs online, the T/S completion time may be exceeded during this surveillance activity. In light of the short T/S completion time, the rupture disc replacement activity poses elevated risk to continued plant operations if the surveillance is performed online.

5. Proposed Alternative and Basis for Use

The proposed alternative is a one-time extension of the current replacement interval such that its end date would be extended from April 11, 2012 to June 2013. This would allow replacing the rupture discs during Callaway's next refuel. Replacing the rupture discs online by surveillance due dates would result in elevated risk to the plant, without a compensating increase in the level of quality or safety.

The rupture discs are 1.375 inches diameter stainless steel (316SS), rated 150 psig at 450 F. The rupture discs are subjected to day-to-day plant operating conditions of a nominal temperature of 142 F and pressure of 3.04 psia. For such conditions, the calculated stress acting on the rupture disc(s) was found to be significantly less than the fatigue strength or endurance limit [39,000 psi] for the 316SS stainless steel, as provided in the ASM Handbook, Volume 19, Fatigue and Fracture, ASM International (1996), Page 1814. Based on this evaluation, the rupture discs are not expected to fail due to fatigue before they are replaced in the next refuel outage (June 2013 – Refuel 19).

The safety function of the rupture discs is to open to allow the lower piston chamber (LPC) of the MSIV actuators to vent and close the MSIV within the required time frame. To close an MSIV, the LPC must be open or vented. Two vent lines are provided for each MSIV actuator. The normal, non-safety vent line is routed from the actuator through a locked open manual valve and back to the condenser. The backup vent line is routed from the MSIV actuator through a locked open manual isolation valve and a safety-related rupture disc set at 150 psig to an equipment floor drain. A one-time extension of the 5-year surveillance replacement interval for the rupture discs would not prevent the rupture disc(s) from performing its safety function.

Using the provisions of this relief request as a one-time alternative to the specific requirement of the ASME OM Code Mandatory Appendix 1 I-1360, pursuant to 10 CFR 50.55a (a)(3)(ii), relief from the identified ASME OM Code requirement is requested.

6. Duration of Proposed Alternative

The proposed alternative would be a one-time extended replacement interval for the MSIV rupture discs such that the interval would expire June 2013 instead of April 11, 2012. Subsequent rupture discs replacements will be in accordance with the ASME OM Code requirements.

7. Precedents

A related relief request was approved for the Southern Nuclear Operating Company, Hatch Nuclear Plant Units 1 and 2, Docket Nos. 50-321 and 50-366. Valve Relief Request RR-V-5, was approved for the In-service Testing (IST) fourth 10-year interval for both units. Relief was approved to replace four HPCI system rupture discs every 6 years (3rd refuel) versus every 5 years per the ASME OM Code Mandatory Appendix 1.