

March 21, 2001

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

ULNRC-04417

Gentlemen:

DOCKET NUMBER 50-483
UNION ELECTRIC COMPANY
CALLAWAY PLANT
BDMS ELIMINATION



References: 1. ULNRC-04257 dated May 25, 2000
2. ULNRC-04400 dated March 2, 2001

Union Electric Company herewith revises the application for amendment to Facility Operating License No. NPF-30 for the Callaway Plant submitted in the above referenced letters.

The Boron Dilution Mitigation System (BDMS), a microprocessor-based system driven by inputs from the source range neutron flux channels, is currently required by 10CFR50.36(c)(2)(ii) Criterion 3 for inadvertent boron dilution event mitigation. The BDMS, as currently configured, will no longer be credited and the automatic valve swap-over function will be eliminated. In lieu of crediting the BDMS for automatic event mitigation, alarms, indicators, procedures and controls will direct a manual response to inadvertent boron dilution transients. Operator action will be credited to mitigate this event in MODES 3, 4, and 5.

As proposed in Reference 2, the operational details associated with the position of the letdown divert valve, BGLCV0112A, would have been controlled outside of the Technical Specifications (TS). However, given the importance of this valve's position in the reanalysis, a decision has been made to address the control of this valve within the context of the TS, subject to an LCO Note described below.

As part of the proposed license amendment, an annunciator is being added to alarm in the control room whenever the letdown divert valve is not directing letdown flow to the Volume Control Tank (VCT), i.e., whenever the letdown divert valve is not in the "VCT" position. In addition, the system interface between the Chemical and Volume Control System (CVCS) and the Boron Recycle System is being modified such that the Reactor Coolant System (RCS) and CVCS nominally form a closed system consistent with the reanalysis assumptions. In MODES 1 and 2, the letdown divert valve will normally be operated with its hand control switch (BGHIS0112A) in the "AUTO" position

ADD 1

and the valve will either send letdown flow to the VCT (annunciator window dark, no alarm) or divert flow to the recycle holdup tank(s) depending on VCT level (annunciator window lit, alarm present). Prior to entering MODE 3 from MODE 2 during a plant shutdown and prior to entering MODE 5 from MODE 6 during a plant startup, the letdown divert valve hand control switch will nominally be placed in the manual "VCT" position such that the valve will send letdown flow to the VCT. The annunciator window will, therefore, be dark during MODES 3 through 5, except when the letdown divert valve is operated under administrative controls during planned evolutions requiring a high degree of operator involvement and awareness. In these shutdown MODES, water processing requirements dictate that it be possible to divert letdown flow to the recycle holdup tanks (RHTs), either by manual action placing the divert valve hand control switch in the "RHT" position or by placing the divert valve hand control switch in the "AUTO" position and allowing VCT level to determine the flow diverted to the RHT(s).

The attached TS 3.3.9 mark-ups include all changes provided in Reference 2 as well as the following additional LCO Note:

" BGHIS0112A may be re-positioned as necessary during planned evolutions under administrative controls."

When BGHIS0112A is in either the "RHT" or "AUTO" position, the high VCT water level alarm channel setpoint of 70% of span may not be exceeded during an inadvertent boron dilution event. Therefore, administrative controls will be implemented which require heightened operator involvement and awareness when BGHIS0112A is not in the "VCT" position. Administrative controls include reactivity management controls that ensure appropriate operator response to alarms and indications indicative of a boron dilution event. These administrative controls will include verification of the boron concentration of the makeup prior to plant evolutions requiring repositioning the divert valve and restoration requirements to return the valve to the manual "VCT" mode upon evolution completion (these plant evolutions are defined as cooldown and heatup). All other evolutions will be addressed by reactivity management controls. LCO 3.3.9 is satisfied when these administrative controls are in effect and the LCO Note is being exercised.

Since the attachment represents an additional administrative control, the conclusions of the licensing evaluations documented in Attachments 1 and 2 of Reference 1 remain valid.

All commitments associated with this amendment application continue to be detailed in Section X (page 26) of Appendix A to Reference 1, with the exception that the above LCO Note and administrative controls will cover the operation of the letdown divert valve and the FSAR Chapter 16 changes are replaced by the attached TS 3.3.9 changes.

The Callaway Plant Onsite Review Committee has reviewed these changes. The attachment provides the final Technical Specification Changes in support of this amendment request. Final Bases changes will be implemented under our TS 5.5.14 Bases Control Program after NRC approval of this amendment application. It has been determined that this letter does not revise any findings related to significant hazard considerations, as determined per 10CFR50.92 in Reference 1. Pursuant to 10CFR51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

Approval of these Technical Specification changes is requested by April 4, 2001. The amendment will be fully implemented prior to entering MODE 5 from MODE 6 during startup from Refuel 11.

If you have any questions on this amendment application, please contact us.

Very truly yours,

A handwritten signature in black ink that reads "Randall Juvin for". The signature is written in a cursive, flowing style.

Alan C. Passwater
Manager-Corporate Nuclear Services

Attachment:

Technical Specification Changes

STATE OF MISSOURI)
) S S
CITY OF ST. LOUIS)

Randy J. Irwin, of lawful age, being first duly sworn upon oath says that he is Supervising Engineer, Corporate Nuclear Services, Fuel Cycle Management 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 Randy J. Irwin
Randy J. Irwin
Supervising Engineer,
Fuel Cycle Management,
Corporate Nuclear Services

SUBSCRIBED and sworn to before me this 2/8th day
of March, 2001.

Melissa L. Orr

MELISSA L. ORR
Notary Public - Notary Seal
STATE OF MISSOURI
City of St. Louis
My Commission Expires: June 23, 2003

cc: M. H. Fletcher
Professional Nuclear Consulting, Inc.
19041 Raines Drive
Derwood, MD 20855-2432

Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive
Suite 400
Arlington, TX 76011-8064

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

Mr. Jack Donohew (2)- **OPEN BY ADDRESSEE ONLY**
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
1 White Flint, North, Mail Stop OWFN 7E1
11555 Rockville Pike
Rockville, MD 20852-2738

Manager, Electric Department
Missouri Public Service Commission
P.O. Box 360
Jefferson City, MO 65102

Ron Kucera
Department of Natural Resources
P.O. Box 176
Jefferson City, MO 65102

Denny Buschbaum
TU Electric
P.O. Box 1002
Glen Rose, TX 76043

Pat Nugent
Pacific Gas & Electric
Regulatory Services
P.O. Box 56
Avila Beach, CA 93424

3.3 INSTRUMENTATION

3.3.9 Boron Dilution Mitigation System (BDMS)

LCO 3.3.9

Two ~~trains of the BDMS~~ shall be OPERABLE and one RCS loop shall be in operation.

high VCT water level alarm channels

INSERT 1 →

APPLICABILITY:

MODES ~~2 (below P-6 (Intermediate Range Neutron Flux) interlock)~~, 3, 4, and 5.

NOTE

The boron dilution flux multiplication signal may be blocked in MODES 2 (below P-6 (Intermediate Range Neutron Flux) interlock) and 3 during reactor startup.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One train inoperable. <i>high VCT water level alarm channel</i>	A.1 <i>channel</i> Restore train to OPERABLE status.	72 hours
B. Two trains inoperable. <i>high VCT water level alarm channels</i> <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 <u>AND</u> Suspend operations involving positive reactivity additions.	Immediately

(continued)

No RCS loop in operation.

OR

INSERT 1

NOTE

BGHIS0112A may be re-positioned as necessary during planned evolutions under administrative controls.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Perform SR 3.1.1.1.	1 hour
	<u>AND</u>	<u>AND</u> Once per 12 hours thereafter
	B.3.1 Close and secure unborated water source isolation valves, BGV0178 and BGV0601.	4 hours
	<u>AND</u>	
	B.3.2 Verify unborated water source isolation valves, BGV0178 and BGV0601, are closed and secured.	Once per 31 days
G. No RCS loop in operation.	G.1 Close and secure unborated water source isolation valves, BGV0178 and BGV0601.	4 hours
	<u>AND</u>	
	G.2 Verify unborated water source isolation valves, BGV0178 and BGV0601, are closed and secured.	Once per 31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.9.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.9.2	<div><div>NOTE</div><div>Only required to be performed in MODE 5.</div><div>Not used.</div><div>Verify BGV0178 is secured in the closed position.</div></div>	31 days
SR 3.3.9.3	<div><div>NOTE</div><div>Not required to be performed until 4 hours after reducing power below P-6 interlock. <i>prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3.</i></div><div>Perform COT and verify nominal flux multiplication setpoint of 1.7.</div></div>	92 days
SR 3.3.9.4	<div><div>NOTE</div><div>Neutron detectors are excluded from CHANNEL CALIBRATION.</div><div>Perform CHANNEL CALIBRATION.</div></div>	18 months
SR 3.3.9.5	<div><div>Not used.</div><div>Verify the centrifugal charging pump suction valves from the RWST open and the CVCS volume control tank discharge valves close in less than or equal to 30 seconds on a simulated or actual actuation signal.</div></div>	18 months
SR 3.3.9.6	Verify one RCS loop is in operation.	12 hours

3.3 INSTRUMENTATION

3.3.9 Boron Dilution Mitigation System (BDMS)

LCO 3.3.9 Two high VCT water level alarm channels shall be OPERABLE and one RCS loop shall be in operation.

----- NOTE -----
BGHIS0112A may be re-positioned as necessary during planned evolutions under administrative controls.

APPLICABILITY: MODES 3, 4, and 5.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One high VCT water level alarm channel inoperable.	A.1 Restore channel to OPERABLE status.	72 hours
B. Two high VCT water level alarm channels inoperable. <u>OR</u> No RCS loop in operation. <u>OR</u> Required Action and associated Completion Time of Condition A not met.	B.1 Suspend operations involving positive reactivity additions. <u>AND</u>	Immediately (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2 Perform SR 3.1.1.1.	1 hour
	<u>AND</u>	<u>AND</u>
		Once per 12 hours thereafter
	<u>AND</u>	
	B.3.1 Close and secure unborated water source isolation valves, BGV0178 and BGV0601.	4 hours
	<u>AND</u>	
	B.3.2 Verify unborated water source isolation valves, BGV0178 and BGV0601, are closed and secured.	Once per 31 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.9.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.9.2	Not used.	
SR 3.3.9.3	<p>----- NOTE -----</p> <p>Not required to be performed prior to entering MODE 3 from MODE 2 until 4 hours after entry into MODE 3.</p> <p>-----</p> <p>Perform COT.</p>	92 days
SR 3.3.9.4	Perform CHANNEL CALIBRATION	18 months
SR 3.3.9.5	Not used.	
SR 3.3.9.6	Verify one RCS loop is in operation.	12 hours