

November 6, 2003

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

ULNRC-04913

Ladies and Gentlemen:



**DOCKET NUMBER 50-483
Callaway PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 2003-008-00**

Technical Specification violation due to valve control circuit modification.

The enclosed licensee event report is submitted in accordance with 10CFR50.73(a)(2)(i)(B) to report a violation of Technical Specifications when implementing a modification to the valve control circuitry for a pressurizer power operated relief valve block valve.

Very truly yours,

A handwritten signature in black ink that reads "Keith D. Young".

Keith D. Young
Manager,
Regulatory Affairs

KDY/JER/slk

Enclosure

IE22

ULNRC-04913
November 6, 2003
Page 2

cc: Mr. Bruce S. Mallet
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

Manager, Electric Department
Missouri Public Service Commission
PO Box 360
Jefferson City, MO 65102

Records Center
Institute of Nuclear Power Operations
700 Galleria Parkway
Atlanta, GA 30339

NRC FORM 366 (7-2001)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104		EXPIRES 7-31-2004		
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)								
1. FACILITY NAME CALLAWAY PLANT UNIT 1				2. DOCKET NUMBER 05000 483		3. PAGE 1 OF 4		
4. TITLE Technical Specification violation due to valve control circuit modification.								
5. EVENT DATE			6. LER NUMBER		7. REPORT DATE		8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR
9	7	2003	2003	- 008 - 00		11	06	2003
							FACILITY NAME	
							DOCKET NUMBER 05000	
							FACILITY NAME	
							DOCKET NUMBER 05000	
9. OPERATING MODE		1		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR *: (Check all that apply)				
10. POWER LEVEL		100		20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)
				20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)
				20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)
				20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)
				20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)
				20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)
				20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)
				20.2203(a)(2)(v)		X 50.73(a)(2)(i)(B)		50.73(a)(2)(vii)
				20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)
				20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)
12. LICENSEE CONTACT FOR THIS LER								
NAME Mark A. Reidmeyer						TELEPHONE NUMBER (Include Area Code) (573) 676-4306		
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT								
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER
X	AB	ISV	W120	Y				
14. SUPPLEMENTAL REPORT EXPECTED						15. EXPECTED SUBMISSION DATE		
YES (If yes, complete EXPECTED SUBMISSION DATE)				X	NO		MONTH	DAY
							YEAR	
16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)								
On 9/4/03 with Callaway in Mode 1 at 100 percent power, a modification to replace the handswitch for "B" Pressurizer (Pzr) Power Operated Relief Valve Block valve (BBHV8000B) was implemented. During post modification testing, the valve operator and control breaker were damaged. The modification required removal of a wire which had not been specified by the modification work instructions. Repairs were performed and the valve control circuitry was restored to pre-modification conditions. The reportable condition occurred 9/7/03 when the Technical Specification Required Actions were not met within the associated Completion Time. Interim corrective actions restrict planning of motor operated valve control circuit work documents. Long term corrective actions include strengthening the training and qualification process for the planning of motor operated valve modification work documents.								

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
Callaway Plant Unit 1	05000483	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		2003	- 008	- 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

This event is reportable under 10CFR50.73(a)(2)(i)(B), an operation or condition prohibited by Technical Specifications.

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

Callaway was in Mode 1 at 100 percent power.

C. STATUS OF STRUCTURES, SYSTEMS OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

Not Applicable.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

On 9/4/03, with Callaway in Mode 1 at 100 percent power, a modification was implemented to install a new hand switch for BBHV8000B, "B" Pressurizer (Pzr) Power Operated Relief Valve (PORV) Block valve. This modification would have resulted in a seal-in circuit for the momentary OPEN function of the handswitch and a maintained contact circuit for the CLOSED function. Following post modification testing, an on-coming Reactor Operator noted the OPEN indication for BBHV8000B was not lit. It was determined that breaker NG02BDF1 for BBHV8000B had tripped.

Subsequent investigation determined the thermal overload relays for NG02BDF1 (the valve's motor operator power supply) and limit switches for BBHV8000B were damaged. The modification package required a jumper wire be removed, but was not addressed in the work instructions. Because of this oversight, the valve control circuit modification was completed with the jumper wire still installed.

With the jumper wire installed, a continuous OPEN signal for BBHV8000B resulted anytime hand switch BBHV8000B was in the AUTO or OPEN position. The jumper wire also bypassed the open limit switch and open torque switch for the Limitorque actuator. When the valve was stroked open, stem travel was stopped by engagement of the valve's backseat while the Limitorque motor remained energized as it tried to open the valve further. The constantly energized motor overheated resulting in short-circuiting the motor windings. The increased valve stem travel also caused the valve limit switches to be damaged. Inspection of the breaker cubicle revealed damaged overload relays. The power cables were megger tested and found to be undamaged.

BBHV8000B had been declared Inoperable at 0601 on 9/4/03 to implement the hand switch modification. The associated Technical Specification 3.4.11 Required Action was to restore the valve to OPERABLE status within the Completion Time of 72 hours. It was determined that

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
Callaway Plant Unit 1	05000483	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
		2003	- 008	- 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

repairs would require replacing the Limitorque actuator, including the motor, and restoring BBHIS8000B to the pre-modification configuration. An Operability Determination was completed for BBHV8000B which established that the valve, valve stem, and bonnet were operable until Refuel 13. During Refuel 13 the valve components will be inspected for degradation. The valve stem will be replaced.

By mid-day 9/5/03, it was recognized that repairs might not be completed within the Technical Specification 72 hour Completion Time. The subsequent Required Action required placing the plant in Mode 3 with an associated Completion Time of 6 hours. On 9/6/03 a Notice of Enforcement Discretion (NOED) was requested to exceed the 72 hour Technical Specification Completion Time. On 9/6/03 the NRC verbally approved a NOED, granting a 48-hour extension to the 72 hour Completion Time to complete repairs and testing of the valve. As required by the NOED, compensatory measures were implemented to assure the extended Technical Specification Completion Time did not adversely impact nuclear safety.

Valve actuator replacement and control circuitry work were completed early on 9/7/03. All evaluations and operability reviews were completed and the Technical Specification Required Action plus NOED were exited at 1418, 9/7/03.

E. METHOD OF DISCOVERY OF EACH COMPONENT, SYSTEM FAILURE, OR PROCEDURAL ERROR

The Reactor Operator noticed the failed light indication for BBHV8000B. Subsequent investigations identified the faulted breaker and valve operator, eventually leading to the discovery of the jumper wire inadvertently left in the control circuit.

II. EVENT DRIVEN INFORMATION

A. SAFETY SYSTEMS THAT RESPONDED

Not Applicable for this event.

B. DURATION OF SAFETY SYSTEM INOPERABILITY

Per Technical Specification 3.4.11 Required Action C, a 72 hours Completion Time is allowed to effect repairs and exit the Required Action. If repairs are not completed within the 72 hour Completion Time, Required Action D requires placing the plant in Mode 3 in 6 hours. The actual time BBHV8000B was inoperable was 80 hours, 17 minutes. Therefore, this event represents a violation of Technical Specification 3.4.11 and is reportable per 10CFR50.73(a)(2)(i)(B) as a condition which was prohibited by Technical Specifications.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT.

Compensatory measures were implemented to assure that the NOED extended Technical Specification Completion Time did not adversely impact nuclear safety. A risk analysis performed to support the NOED request determined that the compensatory measures actually enhanced

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Callaway Plant Unit 1	05000483	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
		2003	- 008	- 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

safety (i.e., reduced core damage frequency). Therefore, there were no adverse safety consequences as a result of the additional time in the Action Statement as discussed in the NOED submittal.

III. CAUSE OF THE EVENT

A formal Root Cause Analysis team was assembled to review this event. The root cause of this event was determined to be lack of adequate work instructions in the modification work package.

IV. CORRECTIVE ACTIONS

Interim corrective actions restrict planning of motor operated valve control circuit work documents. Long term corrective actions include strengthening the training and qualification process for the planning of motor operated valve modification work documents.

V. PREVIOUS SIMILAR EVENTS

A search of the Callaway Action Request System (CARS) was performed to identify previous CARs related to this issue. No previous similar events were identified.

A review of LERs submitted from September, 2000 until present did not reveal any similar LERs.

VI. ADDITIONAL INFORMATION

The system and component codes listed below are from the IEEE Standard 805-1984 and IEEE Standard 803A-1984 respectively.

System: AB

Component: ISV