Callaway Plant
Post Office Box 620
Fulton, Missouri 65251

UNION ELECTRIC

April 29, 1996

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

ULNRC-3371

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 96-001-00
LICENSED OPERATORS INITIATED A MANUAL REACTOR TRIP AFTER A FAILED FUSE CAUSED THE CLOSURE OF 'B' FEEDWATER ISOLATION VALVE

The enclosed licensee event report is submitted pursuant to 10CFR50.73(a)(2)(iv) due to a manual actuation of the Reactor Protection System and automatic actuation of Engineered Safety Features when licensed operators initiated a manual reactor trip after a failed fuse caused the closure of 'B' feedwater isolation valve.

R. D. Affolter
Manager, Callaway Plant

RDA/HDB/MAH/tdf

Enclosure

000017

IE22

cc: Mr. L. Joe Callan
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

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

Mr. Steve Wideman
Supervisor, Licensing
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, KS 66839

Dennis Kirsch
Chief, Division of Reactor Projects Branch B
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive Suite 400
Arlington, TX 76011

Ms. Kristine M. Thomas (2 copies)
Licensing Project Manager, Callaway Plant
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop 13E16
Washington, DC 20555-2738

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

Mr. Thomas A. Baxter
Shaw, Pittman, Potts, & Trowbridge
2300 N. Street N.W.
Washington, DC 20037

bcc: D. F. Schnell (400)
G. L. Randolph
J. V. Laux/G. A. Hughes
A. C. Passwater/D. E. Shafer (470)
M. P. Barrett (100)
P. L. Reynolds (470) NSRB
G. J. Czeschin
R. T. Lamb
J. L. Pearson
H. D. Bono
J. D. Nurrenbern
Z40ULNRC
Z40LER
E210.0001
A160.0761
RDA Chrono

Manager, Plant Support
Wolf Creek Nuclear Operating Corporation
PO Box 411
Burlington, KS 66839

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Callaway Plant Unit 1	0 5 0 0 0 4 8 3	1 OF 0 4

TITLE (4) **Licensed Operators Initiated a Manual Reactor Trip After a Failed Fuse Caused the Closure of 'B' Feedwater Isolation Valve**

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 4	0 2	9 6	9 6	- 0 0 1	- 0 0	0 4	2 5	9 6		0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (Check one or more of the following) (11)			
POWER LEVEL (10) 1 0 0		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
	AREA CODE
H. D. Bono, Supervising Engineer, Site Licensing	3 1 4 6 7 6 - 4 4 2 8

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
X	S J	F U	S 1 5 6	NO						

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single-space typewritten lines)(16)

On 4/2/96, at 1045 CDT, a fuse in the 125vdc power supply to the yellow train fast close solenoid on 'B' Main Feedwater Isolation Valve (MFIV), AEFV0040, failed and caused the MFIV to close. The licensed control room operators immediately recognized the closure of the isolation valve, and understanding the inability to maintain steam generator levels with this condition, initiated a manual reactor trip with the plant in Mode 1 at 100% reactor power. All safety systems responded as expected. However, the source range channel N-32 for neutron flux detection failed high subsequent to the trip.

Investigation into the N-32 high flux alarm revealed that the high voltage power supply for neutron flux detection failed high. This resulted in N32 reading high flux and alarm actuation. Licensed personnel responded in accordance with OTO-SE-00001, "Source Range Nuclear Channel Failure" and entered Technical Specification 3.3.1 on the inoperable source range. The power supply for N32 was replaced.

The fuse failure was attributed to mechanical failure of the thermal link inside the fuse. The failure was not indicative of an electrical overload. The failed fuse and, as a precautionary measure, all corresponding MFIV fast close solenoid 125vdc power fuses were replaced. The plant was returned to Mode 1 at 0508 CDT on 4/3/96. Further evaluation into the source range high voltage power supply failure is being conducted.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REV NO.	
Callaway Plant Unit 1	0 5 0 0 0 4 8 3	9 6	- 0 0 1	- 0 0	0 2 OF 0 3

TEXT (If more space is required, use additional NRC Form 366A's)(17)

BASIS FOR REPORTABILITY:

This event is reportable per the requirements of 10CFR50.73(a)(2)(iv) due to a manual actuation of the Reactor Protection System and automatic actuation of Engineered Safety Features.

PLANT CONDITION AT TIME OF EVENT:

Mode 1 - Power Operations; 100% Reactor Power

Reactor Coolant System: Temperature (average) - 588.3 degrees F

Pressure - 2233 psig

DESCRIPTION OF EVENT:

On 4/2/96, at 1045 CDT, a fuse[1] in the 125vdc power supply to the yellow train fast close solenoid on 'B' Main Feedwater Isolation Valve (MFIV), AEFV0040[2], failed and caused the MFIV to close. The licensed control room operators immediately recognized the closure of the isolation valve, and understanding the inability to maintain steam generator levels with this condition, initiated a manual reactor trip. All safety systems responded as expected. However, the source range channel N-32 for neutron flux detection failed high subsequent to the trip.

Investigation into the N-32 high flux alarm revealed that the high voltage power supply[3] for neutron flux detection failed high. This resulted in N32 reading high flux and alarm actuation. Licensed personnel responded in accordance with OTO-SE-00001, "Source Range Nuclear Channel Failure" and entered Technical Specification 3.3.1 on the inoperable source range. The power supply for N32 was replaced. Testing was conducted to assure the source range channel was operable and, the source range panel instrumentation did not initiate the power supply failure.

The plant was returned to Mode 1 at 0508 CDT on 4/3/96.

ROOT CAUSE:

The root cause of the reactor trip was the 125vdc supply voltage fuse to the yellow train fast close solenoid for AEFV0040 failed. This caused the solenoid to deenergize and fast close the MFIV. The fuse failure was attributed to mechanical failure of the thermal link inside the fuse. The failure was not indicative of an electrical overload.

CORRECTIVE ACTIONS:

The failed fuse and, as a precautionary measure, all corresponding MFIV fast close solenoid 125vdc power fuses were replaced. Further evaluation into the source range high voltage power supply failure is being conducted.

SAFETY SIGNIFICANCE:

The reactor was manually tripped due to the trend in decreasing steam generator levels after the 'B' MFIV closed. Plant safety systems functioned as required. The failure of the N32 power supply did not create a safety hazard. There was no threat to the public health or safety.

PREVIOUS OCCURRENCES:

None.

FOOTNOTES:

The system and component codes listed below are from IEEE Standards 805-1984 and 803A-1983 respectively:

(1) System - SJ, Component - FU

Manufacturer: Gould Shawmut

Description: Tri-onic fuse

Part Number: TRM3.2

(2) System - SJ, Component - ISV

(3) System - IG, Component - JX