NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

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 3

TITLE (4)

Inadvertent Engineered Safety Feature Actuation

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
										0 5 0 0 0
1 0	0 6	8 4	8 4	— 0 4 8	— 0 1	0 2	0 4	8 5		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
3		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 0 0	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
Robert H. Leuther - Superintendent, Maintenance	AREA CODE 3 1 4 — 6 7 6 - 8 2 0 5

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	
B	J C	B K R	W 1 2 0	N							

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)

This LER concerns three similar events in which a Feedwater Isolation occurred.

On 10/6/84, 10/11/84 and 10/22/84 a Feedwater Isolation Signal (FWIS) was generated when Reactor Trip Breaker 'A' immediately reopened when operators attempted to close the Reactor Trip Breakers. In all three incidents, equipment and personnel responded as expected following the FWIS.

It was first discovered that residual heat in the Undervoltage (UV) trip coils on the breaker would not allow the coil to re-energize after a trip. The UV coil was replaced on Reactor Trip Breaker 'A' on 10/15/84. Further investigation revealed a potential concern that the contact development on the Reactor Trip/Close handswitch, located on the Main Control Board, would also cause the UV coil to remain de-energized in certain situations following a trip operation. A design change to rewire the contacts has been approved.

A spare breaker is currently being qualified to replace Reactor Trip Breaker 'A.' The breaker will then be tested in an "off-line" test and an engineering evaluation performed. Appropriate actions will then be taken based on the evaluation.

IE22
1/1

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Callaway Plant Unit 1	0 5 0 0 0 4 8 3	8 4	— 0 4 8	— 0 1	0 2 OF 0 3

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

This LER concerns three similar events of inadvertent Engineered Safety Feature Actuations that occurred on 10/6/84, 10/11/84 and 10/22/84. Prior to each event, the plant was in Mode 3 with Reactor Coolant System temperature and pressure approximately 557°F and 2235 psig, respectively.

The events occurred when operators attempted to close the Reactor Trip Breakers. Upon closure, Reactor Trip Breaker 'A' (manufacturer: Westinghouse - Type DS-416) immediately reopened, generating a Feedwater Isolation Signal (FWIS) as designed. Reactor Trip Breaker 'B' remained closed. All equipment and personnel responded as expected following the events.

A generic problem with the Reactor Trip Breaker Undervoltage (UV) coil reset voltage was identified prior to these events. The UV coil utilized in the Reactor Trip Switchgear had an unadjustable reset voltage which was approximately equal to the power supply voltage at the coil. Additionally, it was discovered that residual heat in the coil effectively raised the reset set point. Thus, after the UV coil had been energized for a length of time and the breaker was tripped, the UV coil would not allow the breaker to reclose, in certain cases, until it had cooled. As interim corrective action until UV coils with a lower reset voltage could be obtained, the power supply voltage was raised to allow the breakers to reset. A new UV coil was received on-site but was not immediately installed, as the interim corrective action described above appeared to have alleviated the problem with the UV coils.

On 10/6/84 and 10/11/84 Reactor Trip Breaker 'A' failed to reclose and a work request was generated to replace the UV coil. This was completed on 10/15/84. Additionally, after the 10/6/84 event, further investigation revealed a potential wiring concern on the Reactor Trip/Close handswitch on the Main Control Board. The contact development, as wired, allowed the UV coils to remain de-energized following a trip operation. The UV trip lever must be restrained by the UV coil before the closing coil is energized. If the trip lever is not restrained, the spring action from breaker closure could allow the trip lever to release the breaker. Callaway Modification Package 84-0674 will provide the necessary handswitch modifications.

The UV coil that was removed from RTB 'A' on 10/15/84 was subsequently tested in a DS-416 training breaker with the same effect. i.e., the breaker would immediately reopen upon closure. Additionally, the replacement UV coil was verified to operate properly several times in succession, with no abnormalities, prior to placing RTB 'A' back in service on 10/15/84. Thus, the 10/6/84 and 10/11/84 events are believed to have been caused by the faulty UV coil.

On 10/22/84 RTB 'A' again failed to reclose. The root cause of this incident is still uncertain at this time. A spare breaker is currently being prepared to install in place of RTB 'A.' The breaker will then be inspected and tested in an "off-line" test, and subsequent engineering evaluations will determine appropriate actions.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Callaway Plant Unit 1	0 5 0 0 0 4 8 3	8 4	— 0 4 8	— 0 1	0 3 OF 0 3

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

RTB 'A' has been operated successfully a number of times since the 10/22/84 event with no further recurrence of the aforementioned incidents. The breaker has satisfied all applicable Technical Specification operability requirements and is currently fully operational.

The primary function of the Reactor Trip Breakers (i.e., interrupting the Control Rod Drive power supply on a Reactor Trip signal) was not impacted by these findings. The breakers operate properly in performing their safety function. Therefore, at no time was the public health or safety compromised.

Previous occurrences: none

UNION ELECTRIC COMPANY
CALLAWAY PLANT

MAILING ADDRESS:
P.O. BOX 620
FULTON, MO. 65251

February 4, 1985

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

ULNRC-1032

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 84-048-01
INADVERTENT ENGINEERED SAFETY FEATURE ACTUATIONS

The enclosed supplemental Licensee Event Report is submitted to provide additional information concerning LER 84-048-00 submitted November 5, 1984 via ULNRC-965.

Andrew P. Neuhalfen
S. E. Miltenberger
for Manager, Callaway Plant

RHL/WRR/JMS/drs
Enclosure

cc: Distribution attached

IE22
'11

cc distribution for ULNRC-1032

Mr. James G. Keppler
Regional Administrator
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

American Nuclear Insurers
c/o Dottie Sherman, Library
The Exchange Suite 245
270 Farmington Avenue
Farmington, CT 06032

Records Center
Institute of Nuclear Power Operations
Suite 1500
1100 Circle 75 Parkway
Atlanta, GA 30339

NRC Resident Inspector
Missouri Public Service Commission
D. F. Schnell
J. F. McLaughlin
J. E. Davis (Z40LER)
D. W. Capone/R. P. Wendling
F. D. Field
R. L. Powers
A. C. Passwater/D. E. Shafer/D. J. Walker
G. A. Hughes
W. R. Robinson (QA Record)
R. H. Leuther
J. M. Price
R. A. McAleenan
L. K. Robertson (470)(NSRB)
Merlin Williams, Wolf Creek
SEM Chrono
3456-0021.6
3456-0260
Z40ULNRC
G56.37
N. Date