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 β	1 OF 0 3

TITLE (4)

Reactor Trip on Partial Loss of Feedwater Flow

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
0 2	2 1	8 5	8 5	–	0 1 0	– 0 0	0 3	2 5	8 5		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
William R. Campbell - Superintendent, Engineering	AREA CODE 3 1 4 — 6 7 6 – 8 5 0 9

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	E C	X F M R	S 2 5 0	Y							

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 2/21/85 a Reactor Trip, Feedwater Isolation, Auxiliary Feedwater Actuation, and Steam Generator (S/G) Blowdown Isolation occurred with the plant in Mode 1 at 100% reactor power. These Engineered Safety Features (ESF) actuated as a result of low S/G levels and performed as designed.

The low S/G levels occurred when a nonsafety-related 120 VAC instrument bus was de-energized due to a faulty transformer. The de-energization of the bus caused power to be lost to a feedwater control panel which in turn stopped the main feedwater pump (MFP) powered by that panel. The loss of the MFP resulted in the low S/G levels which actuated the ESF systems.

The operators recovered from the trip via plant procedures and stabilized plant conditions. The faulty transformer was replaced and is to be sent to the vendor for a failure analysis. No further corrective action is deemed necessary unless proven otherwise by the vendor evaluation.

There was no damage to plant equipment or release of radioactivity as a result of this incident. The required safety systems performed as designed thus preventing any adverse conditions which could have threatened the public health and safety.

IE22
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

At approximately 1830 CST on 2/21/85, a Reactor Trip, Feedwater Isolation (FWIS), Auxiliary Feedwater Actuation (AFAS), and Steam Generator Blowdown Isolation (SGBIS) occurred with the plant in Mode 1 and at 100% reactor power. These Engineered Safety Features (ESF) actuated as a result of low steam generator (S/G) levels and the required ESF equipment performed as designed.

The circumstances surrounding the ESF actuations are as follows:

1. At approximately 1800 hours on 2/21/85, a PN07/PN08 Instrument Bus Undervoltage annunciator was received on the Main Control Board. An investigation revealed the "C" phase of the transformer feeding PN07 (nonsafety-related 120 VAC instrument power bus) from NG01 (safety-related 480 VAC bus) was reading zero voltage and was abnormally hot and smelled of smoke.

2. Electrical maintenance personnel were notified of the problem, the fire brigade was assembled, and preparations to de-energize PN07 began.

3. At approximately 1825 PN07 was de-energized as a precautionary measure to reduce the likelihood of a fire. Various annunciators were received and various instrumentation was lost. Among the equipment lost was control power to Main Feedwater Pump (MFP) "A" and the Digital Rod Position Indication (DRPI) Panel.

4. Upon loss of control power, MFP "A" stopped thus initiating S/G feed/steam mismatch and low level alarms. The "Balance of Plant" operator began decreasing load but at approximately 1830 the reactor tripped on lo-lo level signals from S/G's "A" and "C." The lo-lo S/G levels also initiated an AFAS which in turn initiated a SGBIS. The Reactor Trip above 50% power caused a turbine trip and the Reactor Trip coupled with a low Reactor Coolant System average temperature initiated a FWIS.

5. The operators recovered from the trip per Emergency Operating Procedures E-0, Reactor Trip or Safety Injection, and ES-0.1, Reactor Trip Recovery, and stabilized plant conditions. Also, I&C personnel were contacted to verify that the control and shutdown banks had dropped since indication from the DRPI panel had been lost.

The "C" phase transformer (X-PN-07C) was replaced at approximately 0230 on 2/22/85. An indeterminate internal component failure had caused the transformer failure. The faulty transformer (Model No. RT-481260N) is to be sent to the vendor (Solidstate Controls, Inc.) for a failure analysis. Unless proven otherwise by the results of the vendor failure

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

analysis, this failure will be considered a single isolated case for which no further corrective action is deemed necessary.

Also being evaluated as a result of this incident is the reliability of the Instrument AC Power System. Specifically, an alternate electrical supply with an automatic transfer function between the normal supply and the proposed alternate supply is being evaluated.

There was no damage to plant equipment or release of radioactivity as a result of this incident. The required safety systems performed as designed thus preventing any adverse conditions which could have threatened the public health and safety.

Previous occurrences: none

UNION ELECTRIC COMPANY
CALLAWAY PLANT

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

March 25, 1985

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

ULNRC-1064

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 85-010-00
REACTOR TRIP ON PARTIAL LOSS OF FEEDWATER FLOW

The enclosed Licensee Event Report is submitted pursuant to 10 CFR 50.73(a)(2)(iv) concerning an unplanned Reactor Trip and Turbine Trip caused by a steam generator low level resulting from the loss of one Main Feedwater Pump.

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

WRC/WRR/JWK/drs
Enclosure

cc: Distribution attached

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cc distribution for ULNRC-1064

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)
J. M. Price
W. R. Campbell
G. L. Randolph
R. A. McAleenan
L. K. Robertson (470)(NSRB)
Merlin Williams, Wolf Creek
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