NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

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) Reactor Trip on Low Steam Generator Level Due to Actuation of Throttle Pressure Limiter and Feedwater Isolation Due to Operator Resetting Trip Breakers

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 5	0 2	8 8	8 8	— 0 0 7	— 0 0	0 6	0 1	8 8		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)			
1		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	0 9 9	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
M. E. Taylor - Superintendent of Operations	AREA CODE 3 1 4 6 7 6 - 8 2 0 7

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	

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

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

On 5/2/88 at 1536 CDT, an automatic reactor trip occurred on 'B' Steam Generator (S/G) low level. The Main Turbine Throttle Pressure Limiter (TPL) spuriously actuated, causing the main turbine control valves to close. The loss of steam demand caused the S/G to shrink to the low level reactor trip setpoint. A Feedwater Isolation (FWIS) and Auxiliary Feedwater Isolation were received by design. The licensed operators recovered from the trip via plant procedures. For this event, the plant was in Mode 1, Power Operations at 99% reactor power. Reactor Coolant System (RCS) temperature was 588 degrees F and RCS pressure was 2235 psig.

During restoration from the trip, the FWIS was reset per procedure. At 1736, with the plant in Mode 3, Hot Standby, a licensed operator re-opened the reactor trip breakers and received a FWIS. The operator failed to recognize that re-opening the reactor trip breakers after resetting the FWIS would result in a reinitiation of the FWIS.

The TPL was bypassed via a temporary modification. Permanent elimination of the TPL circuit is under evaluation. Progressive discipline was initiated with the licensed operator involved. This event was discussed with Shift Supervisors, and training for the licensed operators will be conducted on this event during the next requalification cycle.

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Basis for Reportability

Event 1:

On 5/2/88 at 1536 CDT, an automatic Reactor Protection System (RPS)(1) reactor trip occurred on Steam Generator (S/G)(2) low level. As a result of the RPS actuation, a Feedwater Isolation (FWIS) and an Auxiliary Feedwater Actuation (AFAS) were generated by design.

Event 2:

At 1736, a second Feedwater Isolation signal was generated when utility licensed operator opened the reactor trip breakers(3) after the FWIS had been reset.

This Licensee Event report is submitted pursuant to 10CFR50.73(a)(2)(iv) to report the automatic actuation of the RPS and the Engineered Safety Features (ESF)(4) actuations.

Conditions at Time of Event

Event 1: Mode 1 - Power Operations
Reactor Power - 99%
Reactor Coolant System (RCS)(5)
temperature (average) - 588 degrees F
RCS pressure - 2235 psig

Event 2: Mode 3 - Hot Standby

Description of Events

Event 1:

On 5/2/88, at 1536, the Balance of Plant (BOP) computer printer(6) recorded a steam throttle pressure limiting signal. All four turbine control valves(7) slow closed. The loss of steam demand caused the level in the S/G's to shrink. Approximately 13 seconds later, 'B' S/G reached the low level trip setpoint causing a reactor trip. A FWIS and an AFAS were received by design.

The licensed operators recovered from the trip and ESF actuations via plant procedures.

Event 2:

During restoration from the trip, the FWIS was reset per procedure. At 1736, a licensed operator re-opened the reactor trip breakers and received a second FWIS. No equipment cycled as the Feedwater Isolation valves(8) were already closed.

Root Cause

Event 1:

Based upon review of available event indicators, the root cause was isolated to the main turbine Electro-Hydraulic Control (EHC) (9) Throttle Pressure Limiter (TPL) circuitry. This circuitry provides input into the EHC system which causes all four turbine control valves to close.

Event 2:

The licensed operator failed to recognize that re-opening the reactor trip breakers after resetting the FWIS would result in a re-initiation of the FWIS. He felt it was more prudent to keep the reactor trip breakers open since the reactor start-up was delayed due to continued troubleshooting to determine the root cause of the reactor trip.

Corrective Action and Action to Prevent Recurrence

Event 1:

(1) A temporary modification was installed to bypass the TPL. The TPL is provided for turbine moisture carryover protection. Primary moisture carryover protection is provided to the turbine by the S/G high level turbine trip. The permanent elimination of the TPL circuit is under evaluation.

(2) Proper operation of the EHC control valve circuitry was verified and calibration checks of input pressure transmitters were performed. Recorders were installed to monitor pressure transmitter, (10) AC-PT-118, pressure output signal and power supply to AC-PT-118 in an attempt to verify the failure mode.

Event 2:

(1) Progressive discipline was initiated with the licensed operator involved.

(2) This event was discussed with Shift Supervisors and training for the licensed operators will be conducted on this event during the next requalification cycle.

Safety Significance

The RPS and ESF systems performed as required for both events. There were no detrimental effects on plant equipment as a result of the actuations and there were no adverse effects on the public health and safety.

Previous Occurrences

None

Footnotes

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

(1) System - JC
(2) System - AB, Component - SG
(3) System - JC, Component - BKR
(4) System - JE
(5) System - AB
(6) System - IF, Component - PRNT
(7) System - SB, Component - FCV
(8) System - SJ, Component - ISV
(9) System - JJ
(10) System - IT, Component - PT

UNION ELECTRIC

Callaway Plant

June 1, 1988

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

ULNRC-1782

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 88-007-00
REACTOR TRIP ON LOW STEAM GENERATOR LEVEL
DUE TO ACTUATION OF THROTTLE PRESSURE LIMITER AND
FEEDWATER ISOLATION DUE TO OPERATOR RESETTING TRIP BREAKERS

The enclosed Licensee Event Report is submitted pursuant to 10 CFR 50.73(a)(2)(iv) concerning an unplanned reactor trip on low Steam Generator level and a subsequent Feedwater Isolation Signal.

Blosser

J. D. Blosser
Manager, Callaway Plant

MKD
TPS/MKD:jlh

Enclosure

cc: Distribution attached

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cc distribution for ULNRC-1782

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