

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Callaway Plant Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 8 3	PAGE (3) 1 OF 03
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TITLE (4)
FWIS/Reactor Trip Due to Open Feedwater Valve

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)
1	2	17	8	4	8	4	0	6	5	0	0

OPERATING MODE (9) 2	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)									
POWER LEVEL (10) 0 0 5	20.402(b)	20.406(c)	<input checked="" type="checkbox"/>	50.73(a)(2)(iv)	73.71(b)					
	20.406(a)(1)(i)	50.38(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	73.71(c)					
	20.406(a)(1)(ii)	50.38(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)					
	20.406(a)(1)(iii)	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)(A)						
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(viii)(B)						
20.406(a)(1)(v)	50.73(a)(2)(iii)	<input type="checkbox"/>	50.73(a)(2)(x)							

LICENSEE CONTACT FOR THIS LER (12)		TELEPHONE NUMBER	
NAME Charles D. Naslund - Superintendent, I&C	AREA CODE 311	4	617161-18151010

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	3	J C N V	F 1 3 0	N						

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO						

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

This LER concerns two events in which Engineered Safety Features were actuated by steam generator (S/G) level oscillations. On 12/17/84 a Feedwater Isolation Signal (FWIS), Auxiliary Feedwater Actuation Signal (AFAS), and Steam Generator Blowdown Isolation Signal were initiated by a Hi-Hi level in S/G 'C.' On 12/18/84 a Hi-Hi S/G level actuated a Turbine Trip and FWIS. The subsequent drop in S/G levels then initiated a Reactor Trip. In both events, all equipment and personnel responded as expected.

A failed current-pressure (I/P) converter in the control circuit for the 'C' Main Feed Regulator Valve was the cause of the first event. The converter was replaced on 12/17/84.

On 12/18/84, as feedwater control was being transferred to the main regulating valves it became apparent the 'C' Main Regulator Valve was not operating correctly, and S/G level oscillations increased until the above actuations occurred. Investigation revealed that the control valve was not seated properly. The valve was repositioned and returned to service. The generic I/P converter calibration procedure will be revised to ensure that valves are correctly positioned during converter calibration.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT: If more space is required, use additional NRC Form 366A's (17)

This LER involves two related incidents of inadvertent Engineered Safety Features actuations.

Prior to the first event, which occurred on 12/17/84 at 1208 CST, the plant was in Mode 2 at 5% Rated Thermal Power (RTP). During the performance of operating procedure OTG-ZZ-00003, "Plant Startup: 5% to 20% Power," the manual inlet isolation valve to main feedwater regulating valve 'C' (AE-FCV-530) was opened in preparation to transfer feedwater control from the feedwater bypass valves to the main feed regulating valves. Steam generator (S/G) 'C' level was observed to increase and a Feedwater Isolation was actuated before the manual isolation valve could be reclosed. As designed, an Auxiliary Feedwater Actuation and Steam Generator Blowdown Isolation were actuated coincident with the FWIS. All equipment and personnel performed as expected following the above actuations.

The manual isolation valve for AE-FCV-530 was closed and the actuations were reset. Upon investigating, it was found that AE-FCV-530 was partially open, although the Main Control Board had closed indication and no valve control demand signal was present. Thus, when the isolation valve to AE-FCV-530 was opened, feedwater passed through the partially open regulating valve and S/G 'C' level increased, initiating the actuations. Further investigation revealed that a failed current-pressure (I/P) converter in the control circuit for AE-FCV-530 had caused the valve to remain partially open. (Manufacturer: Fisher Controls - Model #546). The converter was replaced, generic calibration procedure ITG-ZZ-FX023, "Generic-Fisher Controls Model #546 I/P Converter," was performed on the I/P converter, and plant startup again proceeded.

Prior to the second event, the plant was in Mode 1 at approximately 12% RTP. On 12/18/84 at 0036 with the generator loaded to approximately 65 MWe, feedwater control was again being transferred from the bypass valves to the main feedwater regulating valves. As the transfer progressed, it became apparent that the 'C' main feed regulating valve, AE-FCV-530, was not operating correctly when S/G level oscillations began. Operators attempted to compensate by taking manual control of feedwater pump speed. Attempts to reduce level oscillations in S/G 'C' then introduced oscillations in all S/G's. These S/G level oscillations increased in magnitude until S/G 'D' reached the Hi-Hi level setpoint. A Turbine Trip, FWIS, AFAS and SGBIS were actuated at this time. Subsequently, steam generator levels proceeded to drop rapidly until a Reactor Trip occurred due to a Lo-Lo level in S/G 'A.' All equipment and personnel performed as expected following the actuations. Operators recovered from the Reactor Trip via emergency operating procedures.

It was discovered that the steam generator level oscillations were initially caused by partially open main feed regulating valve AE-FCV-530. The valve was proven to be partially open when instrument air was isolated and the valve moved closed. The ensuing investigation revealed that although the

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		8 4	- 0 6 5	- 0 1 0	0 3	OF	0 3

TEXT (If more space is required, use additional NRC Form 365A's) (17)

I/P converter was operating correctly, the valve itself was not properly positioned. Generic calibration procedure ITG-ZZ-MS004, "Generic-Diaphragm Actuated Control Valves," was performed on the valve and the valve was returned to service.

To prevent recurrence, the generic I/P converter calibration procedure, ITG-ZZ-FX023, will be revised to ensure that the valve is correctly positioned during converter calibration. This revision is expected to be complete by 1/18/85. Also, the Planning and Scheduling Department will be instructed to reference both the converter calibration procedure and the control valve calibration procedure on work documents associated with Instruments and Controls maintenance on pneumatic control valves, when appropriate. This action is also expected to be complete by 1/18/85.

There was no damage to plant equipment or release of radioactivity as a result of this event. All Engineered Safety Features actuated as designed. At no time did this event pose a threat to the public health or safety.

Previous occurrences: none

UNION ELECTRIC COMPANY
CALLAWAY PLANT

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January 16, 1985

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

ULNRC-1016

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 84-065-00
FWIS/REACTOR TRIP DUE TO OPEN FEEDWATER VALVE

The enclosed Licensee Event Report is submitted pursuant to 10 CFR 50.73(a)(2)(iv) concerning inadvertent Engineered Safety Features actuations caused by a partially open feedwater regulating valve.

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

CDN/WRR/JMS/drs
Enclosure

cc: Distribution attached

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cc distribution for ULNRC-1016

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