

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 0 b							
TITLE (4) REACTOR TRIP ON HIGH NEGATIVE FLUX RATE																						
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	1	0	2	8	5	8	5	0	4	8	0	0	1	1	2	9	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)				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)(vi)				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)(ix)											
LICENSEE CONTACT FOR THIS LER (12)																						
NAME Charles D. Naslund, Superintendent - I&C										TELEPHONE NUMBER 314 617161-18151010												
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																						
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC			
X	A	A	C	A	B	W	1	1	2	1	N											
SUPPLEMENTAL REPORT EXPECTED (14)																						
YES (If yes, complete EXPECTED SUBMISSION DATE)										NO							EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR	
										X												

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

At 0203 CST on 11/2/85, a reactor trip occurred as a result of a power range high negative flux rate. A Feedwater Isolation, Auxiliary Feedwater Actuation, Steam Generator Blowdown and Sample Isolation, and turbine trip occurred as a result. The required safety equipment performed as designed. At the time of the trip, the reactor was in Mode 1, Power Operation, at 100% power and normal operating temperature and pressure.

The power range high negative flux rate reactor trip resulted when a control rod bank dropped. The bank dropped due to a logic error resulting from a failed card in a rod control power cabinet. Immediate actions included stabilizing plant conditions and replacing the failed card.

Due to prior failures of similar cards, an investigation, which includes manufacturer assistance, has been initiated. In addition, procedures have been changed to modify actions to be taken following a Rod Control Urgent Failure Alarm.

A power range high negative flux rate reactor trip caused by more than one rod dropping to the bottom is a design feature in itself. The reactor trip is compensated for by engineering features incorporated in the plant design. These features responded per design. Therefore, at no time was the public health or safety endangered in any way.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

FACILITY NAME (1) Callaway Plant Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 4 8 3	LER NUMBER (6)			PAGE (3)		
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

At 0203 CST on 11/2/85, a reactor trip occurred as a result of a power range high negative flux rate. The power range high negative flux rate occurred when one bank of control rods dropped to the bottom while operators were responding to a Rod Control Urgent Failure Annunciator. A Feedwater Isolation, Auxiliary Feedwater Actuation, S/G Blowdown and Sample Isolation and turbine trip occurred as a result of the reactor trip. The required safety features performed as designed. At the time of the event, the plant was in Mode 1, Power Operation, at 100% of rated thermal power and normal operating temperature (588° F.) and pressure (2235 p.s.i.).

At approximately 0112 on 11/2/85, during performance of a Control Rod Partial Movement Test (Surveillance Procedure OSP-SF-00002) on Rod Control Bank C, reactor operators received a Rod Control Urgent Failure alarm and a Rod Position Indicator Deviation or Power Range Tilt alarm in the control room. An equipment operator was dispatched to the Rod Control Motor Generator Set Room and discovered an urgent alarm on Rod Control Power Cabinet IAC. No other alarms were noted. Following the Callaway Annunciator Response Procedure, OTA-RL-RK079, the reactor operator reset the Urgent Failure alarm and the alarm cleared. While attempting to withdraw Rod Control Bank C to check for proper motion, the rods moved one step and the annunciator cleared. While attempting to move the control rods in Bank C one more step, the rods dropped to the bottom and a power range high negative flux rate reactor trip occurred. The operators recovered from the trip and stabilized the plant per plant operating procedures. Recovery procedures were completed at approximately 0225 on 11/2/85.

During troubleshooting, Instrumentation and Control (I&C) technicians traced the rod control problem to a slave cyclor counter card for the IAC Rod Control Power Cabinet. ⁽¹⁾ The card had failed and triggered a logic error and zero current orders to both the stationary and movable control rod coils. The defective card was replaced, and Rod Control Bank C successfully tested.

Corrective actions taken to prevent recurrence of this event include an investigation into the frequency of slave cyclor counter card failure and a procedural change for resetting urgent failures on Rod Control Power Cabinets. The investigation into the root cause of the slave counter card failure had been initiated due to three slave cyclor counter card failures previous to this one. The prior failures all occurred during shutdown conditions. All four cards have been sent to the Westinghouse Electric Corporation for analysis to determine if this problem is inherent in the cards themselves. A supplemental report will be submitted to relay the results of this analysis if an inherent problem exists. A temporary change was initiated to Callaway Annunciator Response Procedure OTA-RL-RK079 to help preclude the

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

possibility of another reactor trip due to a slave cyclor counter card failure. This change will become permanent with the next procedure revision. The additional actions specified in the procedure include:

- a) Contact I&C prior to resetting an alarm on a rod control power cabinet.
- b) Reset the alarm only after investigation and/or repairs have been completed.
- c) If an alarm in a Logic Cabinet is lit, rods can be moved with the handswitch in the individual bank select mode. Operators should be aware of which banks were being stepped when the alarm occurred and avoid stepping banks in those power cabinets until the alarm is investigated.

A power range high negative flux rate reactor trip caused by more than one rod dropping to the bottom is a design feature in itself. The reactor trip is compensated for by engineering features incorporated in the plant design. These features responded per design. Therefore, at no time was the public health or safety endangered in any way.

Previous occurrences: none

Footnotes:

- (1) IEEE Standard 805-1983 System - AA
IEEE Standard 803A-1983 Component - CAB
Manufacturer - Westinghouse Electric Corporation
Slave Cyclor Counter Card Model No. 3360C94G01



UNION ELECTRIC COMPANY
Callaway Plant

November 29, 1985

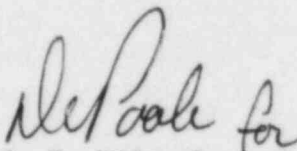
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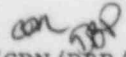
ULNRC-1214

Gentlemen:

DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 85-048-00
REACTOR TRIP ON HIGH NEGATIVE FLUX RATE

The enclosed Licensee Event Report is submitted pursuant to
10 CFR 50.73(a) 2 (iv) concerning a Reactor Trip on High Negative Flux
Rate due to failed Rod Control Card.


S. E. Miltenberger
Manager, Callaway Plant


SEM/CDN/DBP//drs
Enclosure

cc: Distribution attached

cc distribution for ULNRC-1214

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