

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Browns Ferry Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 5 9										PAGE (3) 1 OF 0 4																													
TITLE (4) Engineered Safety Feature Actuation Due to Personnel Error During Returning System to Service																																																	
EVENT DATE (5) 0 3 0 4 8 8 8 8 - 0 1 1 - 0 0 0 4 0 1 8 8										LER NUMBER (6) 0 1 1 - 0 0 0 4 0 1 8 8										REPORT DATE (7) 0 0 0 4 0 1 8 8										OTHER FACILITIES INVOLVED (8) Browns Ferry Unit 2 0 5 0 0 0 2 6 0 Browns Ferry Unit 3 0 5 0 0 0 2 9 6																			
OPERATING MODE (9) N										THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)																																							
POWER LEVEL (10) 0 0 0										20.402(b)										20.405(c) X										50.73(a)(2)(iv)										73.71(b)									
										20.405(a)(1)(i)										50.38(c)(1)										50.73(a)(2)(v)										73.71(c)									
										20.405(a)(1)(ii)										50.38(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)(vii)(A)																			
										20.405(a)(1)(iv)										50.73(a)(2)(ii)										50.73(a)(2)(vii)(B)																			
										20.405(a)(1)(v)										50.73(a)(2)(iii)										50.73(a)(2)(ix)																			
LICENSEE CONTACT FOR THIS LER (12)																																																	
NAME Richard L. Baker, Engineer, Plant Operations Review Staff																				TELEPHONE NUMBER 2 0 5 7 2 9 - 2 5 3 8																													
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																																		
SUPPLEMENTAL REPORT EXPECTED (14)																																																	
YES (If yes, complete EXPECTED SUBMISSION DATE)															X NO																																		
															EXPECTED SUBMISSION DATE (15)																																		
															MONTH DAY YEAR																																		

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

On March 4, 1988, at 1039 hours, with all three units defueled, three emergency equipment cooling water (EECW) pumps were inadvertently started due to a pressure drop in the raw cooling water (RCW) system caused by the opening of the temperature control valve (TCV) at the reactor building closed cooling water (RBCCW) heat exchangers. Low RCW pressure is a designed start signal for the EECW pumps. The shift supervisor (SS) discovered that the RBCCW temperature at the pumps was hot. Upon this discovery the SS opened the TCV to the A RBCCW heat exchanger 20 percent more on unit 2. This caused low RCW pressure on unit 3, and thereby completed the start logic for the EECW pumps. This was an unplanned actuation of an engineered safety feature.

The unit operator then started another RCW pump. Two hours later the three EECW pumps were returned to standby readiness and the additional RCW pump was shutdown to see if the event could be duplicated. The EECW pumps auto started again when the additional RCW pump was shutdown. The unit 2 RBCCW system was removed from service due to finding several valves out of position. These valves were out of position due to a previous SS waiving the restoration checklist in a workplan. After removing RBCCW from service, valve checklists were performed for RCW and RBCCW systems. The operators will be provided with a description of this event.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/88

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

Description of Event

This event occurred on March 4, 1988, at 1039 hours.

The three Browns Ferry units were in cold shutdown with all fuel removed. Unit 3 raw cooling water (RCW) (EIIS code KG) pumps were out of service and the system had 50 percent RCW flow through the reactor building closed cooling water (RBCCW) (EIIS code CC) heat exchanger. Unit 1 had one RCW pump in service with 50 percent RCW flow through the RBCCW heat exchanger. Unit 2 had two RCW pumps in service and 50 percent RCW flow through the RBCCW heat exchanger.

On March 4, 1988, at 1025 hours, the shift supervisor (SS) discovered that the RBCCW temperature at the pumps was hot. Upon this discovery the SS went to the RBCCW temperature control panel and observed that the RCW system did not have much flow to the RBCCW heat exchangers. Based on noise level by the temperature control valves (TCVs) and the fact that one TCV was closed and the other TCV was only partially open, the SS opened the TCV to the A RBCCW heat exchanger 20 percent more on unit 2.

At 1039 hours, the SS called the unit 2 unit operator (UO) to notify him of the action he had taken. The UO notified the SS that he had received an auto start of the emergency equipment cooling water (EECW) (EIIS code BI) pumps B1, D1, and B3. This was an unplanned engineered safety feature (ESF) actuation. All the pumps that auto started were associated with the south header of the EECW system. The north header was tagged out for maintenance therefore none of the pumps associated with the north header auto started. The EECW pump D3 was already running. The UO told the SS that the RCW header pressure was 64 psi and the UO started another RCW pump.

At 1223 hours, the UO returned the three EECW pumps to standby readiness and prepared to shutdown the 2C RCW pump to see if the event could be duplicated. A log entry was made prior to shutting down the pump indicating the possibility of an ESF actuation.

At 1225 hours, the unit 2 UO reported that the EECW pumps auto started again when the fourth RCW pump was shutdown. This was a planned ESF actuation.

At 1330 hours, a licensee reportable event determination (LRED) was submitted for the unplanned ESF actuation.

At 1338 hours, a NRC four-hour report was made on the inadvertent ESF actuation. The unit 2 RBCCW system was removed from service due to finding several valves out of position. The hydrostatic test lineup in the workplan called for the fuel pool cooling system heat exchangers, the drywell air compressor heat exchanger and reactor water cleanup heat exchanger to be isolated with their vents open. The previous SS had waived the restoration

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checklist in the workplan. The on duty SS ordered the valve checklists for RCW and RBCCW to be performed to verify correct valve alignment.

Cause of Event

An error by operations personnel in not performing the valve lineup caused the RBCCW high temperature. The RBCCW high temperature led to the flow adjustment of the RCW system. The flow adjustment to the RCW system on 2A RBCCW heat exchanger caused the pressure at the RBCCW heat exchangers on unit 3 to drop low enough to auto start the EECW pumps.

Corrective Action

The immediate corrective action was to start the 2C RCW pump. Operators and Restart Test personnel walked down the RCW system and throttled down on unnecessary loads. The three EECW pumps were returned to standby readiness by 1223 hours.

The operations personnel were counseled not to waive restoration sections of procedures without ensuring the system is lined up correctly or a method is in place to ensure the restoration section or a complete system checklist is completed before returning a system to service.

The operators will be cautioned that whenever the unit is in an outage and systems are not in their normal configuration, the impact of making adjustments on a system in one unit and the resulting consequences on the other units must be considered.

The operators will be provided with a description of this event.

Analysis of Event

The EECW system is designed as a reliable source of cooling water to certain essential components. It also acts as a backup source of cooling water for the RBCCW system. Low RCW pressure at the RBCCW heat exchangers is a designed start signal for the EECW pumps. The operable EECW pumps successfully responded to the start signal generated by the low RCW pressure. Their function was accomplished as designed. An inadvertent start of the EECW pumps does not adversely affect the nuclear safety of the plant. The severity of this event would not have been increased had the units been at power; the system response would have been the same.

Previous Similar Events - BFR0-50-259/88003
BFR0-50-259/86011

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Commitments - The operations personnel were counseled not to waive restoration sections of procedures without ensuring the system is lined up correctly or a method is in place to ensure the restoration section or a complete system checklist is completed before returning a system to service.

The operators will be cautioned that whenever the unit is in an outage and systems are not in their normal configuration, the impact of making adjustments on a system in one unit and the resulting consequences on the other units must be considered.

The operators will be provided with a description of this event.

TENNESSEE VALLEY AUTHORITY

Browns Ferry Nuclear Plant
Post Office Box 2000
Decatur, Alabama 35602

APR 04 1988

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

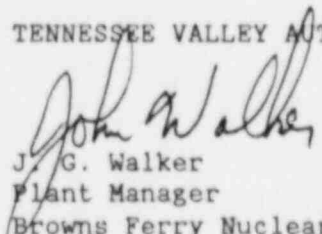
Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 1 - DOCKET
NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - REPORTABLE OCCURRENCE REPORT
BFRO-50-259/88011

The enclosed report provides details concerning the engineered safety feature
actuation due to personnel error during returning system to service. This report
is submitted in accordance with 10 CFR 50.73 (a)(2)(iv).

Very truly yours,

TENNESSEE VALLEY AUTHORITY


J. G. Walker
Plant Manager
Browns Ferry Nuclear Plant

Enclosures
cc (Enclosures):

Regional Administration
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region II
101 Marietta Street, Suite 2900
Atlanta, Georgia 30303

INPO Records Center
Suite 1500
1100 Circle 75 Parkway
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NRC Resident Inspector, Browns Ferry Nuclear Plant

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