

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Browns Ferry Nuclear Plant - Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 2 5 9 1 OF 0 3										PAGE (3) 1 OF 0 3																																																	
TITLE (4) Inadequate Emergency Equipment Cooling Water Flow to Residual Heat Removal and Core Spray Room Coolers																																																																					
EVENT DATE (5) 0 9 0 4 8 5 8 5										LER NUMBER (6) 0 4 5 0 0 1 0 0 4 8 5										REPORT DATE (7) 0 9 0 4 8 5										OTHER FACILITIES INVOLVED (8) 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)										DOCKET NUMBER(S) 0 5 0 0 0 2 9 6																																																	
POWER LEVEL (10) 0 0 1 0										20 402(b)										20 405(c)										50 73(a)(2)(iv)										73.71(b)																													
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NAME Patrick N. Ebersole, Mechanical Engineer																				TELEPHONE NUMBER 2 1 0 5 7 2 9 1 - 3 7 8 1 8																																																	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																																																																					
<table border="1"><thead><tr><th>CAUSE</th><th>SYSTEM</th><th>COMPONENT</th><th>MANUFAC TURE</th><th>REPORTABLE TO NPDOS</th><th>CAUSE</th><th>SYSTEM</th><th>COMPONENT</th><th>MANUFAC TURE</th><th>REPORTABLE TO NPDOS</th></tr></thead><tbody><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>																														CAUSE	SYSTEM	COMPONENT	MANUFAC TURE	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFAC TURE	REPORTABLE TO NPDOS																														
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

During performance of Technical Instruction (TI)-33 (Emergency Equipment Cooling Water (EECW) Flow Verification) on September 4, 1985, EECW flow to both loops of the core spray room coolers on unit 1 and loop II of the residual heat removal (RHR) room cooler on unit 3 was found lower than specified minimums. Following completion of this test on September 5, 1985, the required flows to the core spray and RHR room coolers were reset to their required values.

The EECW system is a raw water system that supplies cooling water to standby emergency equipment. Over a period of time, flow blockage to some components can occur as a result of silt accumulation, biofouling, and corrosion. To ensure that adequate flow to these components is maintained, flow to these components is reset once every six weeks using TI-33.

As a result of finding these inadequate flows, an evaluation of past TI-33 data will be performed to evaluate whether or not the frequency for performance of this instruction should be increased. In addition, tags will be hung on all throttle valves that regulate EECW flows to these components to prevent inadvertent manipulation of these valves.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1) Browns Ferry - Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 2 5 9	LER NUMBER (6)			PAGE (3)		
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

At the time of discovery of the condition described below, units 1 and 2 were in a scheduled refueling outage; and unit 3 was in an extended maintenance outage.

At Browns Ferry, cooling water to the standby emergency equipment is provided by the emergency equipment cooling water (EECW) system, which is a raw water system. Over a period of time, flow blockage to some components can occur as a result of silt accumulation, biofouling, and corrosion. To ensure that adequate flow to these components is maintained, flow to these components is reset once every six weeks using Technical Instruction (TI)-33. Also during the performance of this test, the position of the throttle valve (number of turns from full open) is recorded after the flow is reset in order that any buildup or blockage that has occurred since the performance of the last test can be detected. On a semiannual basis, an expanded version of TI-33 is performed which records the as-found flow rates in addition to resetting the flow to each component.

On September 4, 1985, during the semiannual performance of TI-33, the as-found flow rate to the loop I and II core spray room coolers for unit 1 and the loop II RHR room cooler for unit 3 was less than the minimum flow requirements necessary to ensure operability requirements for equipment that is cooled by the EECW system. This condition resulted in both loops of core spray being declared inoperable on unit 1, and loop II of RHR being inoperable on unit 3. The 3A RHR pump in loop I had been previously secured to allow for heat exchanger maintenance. This reduced the number of operable RHR pumps on unit 3 to one. Both units 1 and 3 had been previously shutdown with the vessel at atmospheric pressure. After completion of the as-found measurement of EECW flow to all components on September 5, 1985, the flows to the core spray and RHR room coolers were reset to their required values.

The required flow to the components served by the EECW system is a function of the EECW inlet temperature; and for the purpose of determining system operability, the highest river temperature since the last performance of this test is used to determine the EECW flow that is required.

The table below lists the components that were found to have deficient EECW flow, and the value that this flow is reset to during performance of TI-33.

COMPONENT	AS FOUND EECW FLOW (gpm)	FLOW SETTING AFTER COMPLETION OF TI-33 (gpm)
Unit 1, loop I Core Spray Room Cooler	25	75
Unit 1, loop II Core Spray Room Cooler	0	60
Unit 3, loop II RHR Room Cooler	20	120

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES-8/31-86

FACILITY NAME (1) Browns Ferry - Unit 1	DOCKET NUMBER (2) 0500025985	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
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TEXT (If more space is required, use additional NRC Form 365A's) (17)

The reduction of EECW flow to the loop I core spray room cooler on unit 1 and the loop II RHR room cooler on unit 3 is a result of higher than expected flow blockage or buildup in the raw water EECW lines. The problem with the EECW flow to the loop II core spray room cooler on unit 1, where no flow was found, cannot be definitely determined. During performance of TI-33, the procedure specifies that personnel performing the test open the valve to the full open position then return the valve to its required setting. It does not specify that the as-found condition of this valve be checked.

As a result of finding of these inadequate flows, an evaluation of past TI-33 data will be performed to evaluate whether or not the frequency for performance of this instruction should be increased. In addition, a revision to TI-33 will be made specifying that signs be hung on all throttle valves that regulate EECW flows to these components. These signs will specify that engineering be contacted in order that the flow can be reset in the event that the valve position is changed. Similar signs are in place on EECW valves to the diesels.

Safety consequences associated with this condition were minimal at the time of discovery of this condition since both units were shutdown and the reactor vessel pressure was atmospheric. A reduction in EECW flow to these components, however, would result in a reduction in the forced cooling capability of the RHR and core spray room coolers. This condition could result in a loss of the long-term capability of these pumps following an accident.

Responsible Plant Section - N/A

Previous Events - BFRO-50-296/84001; 296/80006; 296/80015; 296/80016; 296/8031

TENNESSEE VALLEY AUTHORITY

Browns Ferry Nuclear Plant
P.O. Box 2000
Decatur, Alabama 35602

October 4, 1985

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

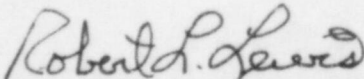
Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1 -
DOCKET NO. 50-259 - FACILITY OPERATING LICENSE DPR-33 - REPORTABLE
OCCURRENCE REPORT BFRO-50-259/85045

The enclosed report provides details concerning inadequate emergency
equipment cooling water flow to the residual heat removal and core
spray room coolers. This report is submitted in accordance with 10 CFR
50.73 (a)(2)(i), (v), and (vii).

Very truly yours,

TENNESSEE VALLEY AUTHORITY



Robert L. Lewis
Acting Plant Manager
Browns Ferry Nuclear Plant

Enclosures

cc (Enclosures):

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NRC Resident Inspector, BFN

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