

### LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Browns Ferry Unit 3		DOCKET NUMBER (2) 0 5 0 0 0 2 1 9 6	PAGE (3) 1 OF 0 2
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TITLE (4)  
Failed Supports on the Residual Heat Removal System

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 6	2 8	8 6	8 6	0 0 7	0 0	0 7	2 5	8 6			0 5 0 0 0		
<table border="1"> <tr> <td>0 5 0 0 0</td> <td>0 5 0 0 0</td> </tr> </table>												0 5 0 0 0	0 5 0 0 0
0 5 0 0 0	0 5 0 0 0												

OPERATING MODE (9)  N

POWER LEVEL (10) 0 1 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)

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)(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)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Alan Gordon, Compliance Engineer	2 0 5 7 2 9 1 - 2 5 3 1 7

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDOS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)  NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On June 28, 1986, loop I of the residual heat removal (RHR) system was declared inoperable after two damaged hangers were discovered by design engineers inspecting torus attached piping. Both hangers are located on the 18-inch RHR injection line above the torus. An earlier failure of one of the damaged hangers was documented on July 16, 1985.

A metallurgical examination confirmed previous findings of fatigue failure due to high vibration of the injection piping when in shutdown cooling mode. Loop I was returned to service on July 2, 1986 following repair of the hangers. To reduce the vibration a modification to the injection valve is being implemented. This change replaces the present valve disc with a fluted disc designed to reduce vibration. The modification is now complete on unit 1 and 2 and will be performed on unit 3 after planned defueling in September.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME (1)  Browns Ferry - Unit 3	DOCKET NUMBER (2)  0 5 0 0 0 2 9 6	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		8 6	- 0 0 7	- 0 0	0 2	OF 0 2

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

Units 1 and 2 were in refueling outages, and unit 3 was in an extended maintenance outage when this condition was discovered. This event affects only unit 3.

On June 28, 1986, at 1405, loop I of the residual heat removal (RHR) (BO) system was declared inoperable after two damaged hangers were discovered by design engineers inspecting torus attached piping. Hanger H3 was found with a 4-inch crack at a structural tubing weld. Hanger H8 had a support lug broken off from the ceiling. Both hangers are located on the 18-inch RHR injection line above the torus. This piping is subject to high vibration when in shutdown cooling mode. An earlier failure of hanger H3 was documented on July 16, 1985 and reported in LER BFRO 50-296/85017.

A metallurgical examination confirmed previous findings of fatigue failure due to high vibration caused by the throttling action of loop I RHR injection valve 3-FCV 74-52. Unit 3 has been in cold shutdown for over a year with RHR loop I frequently in shutdown cooling mode.

RHR loop I was returned to service July 2, 1986 following repair of supports H3 and H8. Hanger H3 was redesigned and is not expected to fail again. Since the hanger is only intended to provide vertical support, the rigid vertical tube steel members were replaced with pinned struts. The support structures will be reinspected following the next prolonged period of loop I shutdown cooling service.

Additionally, to reduce the vibration present in the RHR injection line, a modification to the injection valve is being implemented. This change replaces the present valve disc with a fluted disc designed to reduce vibration. The modification is now complete on units 1 and 2, and will be performed for both injection valves on unit 3 after planned defueling in September.

At the time the hanger failure was discovered, RHR loop II was fully operable and in service. This event, therefore, does not present a significant safety concern on systems operation.

Responsible Plant Section -N/A

Previous Events - BFRO 50-296/85017

TENNESSEE VALLEY AUTHORITY

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

July 25, 1986

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


Dear Sir:

TENNESSEE VALLEY AUTHORITY - BROWNS FERRY NUCLEAR PLANT UNIT 3 - DOCKET  
NO. 50-296 - FACILITY OPERATING LICENSE DPR-68 - REPORTABLE OCCURRENCE REPORT  
BFRO-50-296/86007

The enclosed report provides details concerning failed supports on the  
residual heat removal system. This report is submitted in accordance to  
10 CFR 50.73 (a)(2)(i).

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
Robert L. Lewis  
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  
Atlanta, Georgia 30339

NRC Resident Inspector, Browns Ferry Nuclear Plant

*TECC*  
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