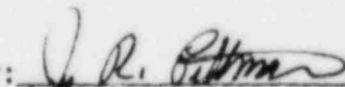


TENNESSEE VALLEY AUTHORITY  
DIVISION OF NUCLEAR POWER  
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT TO NRC  
April 1, 1984 - April 30, 1984

DOCKET NUMBERS 50-259, 50-260, AND 50-296  
LICENSE NUMBERS DPR-33, DPR-52, AND DPR-68

Submitted by:

  
Plant Superintendent

8406070244 840430  
PDR ADOCK 05000259  
R PDR

IE24  
1/1

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Operations Summary

April 1984

The following summary describes the significant operation activities during the reporting period. In support of this summary, a chronological log of significant events is included in this report.

There were four reportable occurrences and five revisions to previous reportable occurrences reported to the NRC during the month of April.

Unit 1

There were no scrams on the unit during the month.

Unit 2

There were no scrams on the unit during the month.

Unit 3

The unit was in cold shutdown the entire month for the unit's end-of-cycle 5 refueling outage.

Prepared principally by B. L. Porter.

Operations Summary (Continued)

April 1984

Fatigue Usage Evaluation

The cumulative usage factors for the reactor vessel are as follows:

<u>Location</u>	<u>Usage Factor</u>		
	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>
Shell at water line	0.00598	0.00486	0.00403
Feedwater nozzle	0.28846	0.21103	0.15429
Closure studs	0.23477	0.17236	0.13233

NOTE: This accumulated monthly information satisfies Technical Specification Section 6.6.A.17.B(3) reporting requirements.

Common System

Approximately  $6.10E+05$  gallons of waste liquids were discharged containing approximately  $5.53E-01$  curies of activities.

Operations Summary (Continued)

April 1984

Refueling InformationUnit 1

Unit 1 is scheduled for its sixth refueling beginning on or about February 8, 1985 with a scheduled restart date of August 27, 1985. This refueling will involve loading 8x8R (retrofit) fuel assemblies into the core, replacing recirculation piping, work on "A" and "B" low-pressure turbine, upgrade hangers and anchors, and environmentally qualify instrumentations.

There are 764 fuel assemblies in the reactor vessel. The spent fuel storage pool presently contains 252 EOC-5 fuel assemblies, 260 EOC-4 fuel assemblies; 232 EOC-3 fuel assemblies; 156 EOC-2 fuel assemblies; and 168 EOC-1 fuel assemblies. The present fuel pool capacity is 3,471 locations.

Unit 2

Unit 2 is scheduled for its fifth refueling beginning on or about August 1, 1984 with a scheduled restart date of December 31, 1984. This refueling outage will involve loading additional 8X8R (retrofit) fuel assemblies into the core, finishing the torus modification, turbine inspection, finishing piping inspection, finishing TMI-2 modifications; post-accident sampling facility tie-ins, core spray change-out, and feedwater sparger inspection.

There are 764 fuel assemblies in the reactor vessel. At the end of the month there were 248 EOC-4 fuel assemblies, 353 EOC-3 fuel assemblies, 156 EOC-2 fuel assemblies, and 132 EOC-1 fuel assemblies in the spent fuel storage pool. The present available capacity of the spent fuel pool is 601 locations.

Operations Summary (Continued)

April 1984

Unit 3

Unit 3 shutdown for its fifth refueling outage on September 7, 1983, with a scheduled restart date of August 1, 1984. This refueling involves loading 8X8R (retrofit) assemblies into the core, finishing the torus modifications, postaccident sampling facility tie-in, core spray change-out, finishing TMI-2 modifications, turbine inspection, piping inspections for cracks, and changeout of jet pump hold-down beams.

There are 0 fuel assemblies presently in the reactor vessel. There are 248 new fuel assemblies, 764 EOC-5 fuel assemblies, 280 EOC-4 fuel assemblies, 124 EOC-3 fuel assemblies, 144 EOC-2 fuel assemblies, and 208 EOC-1 fuel assemblies in the spent fuel storage pool. The present available capacity of the spent fuel pool is 150 locations.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1		
4/1	0001	Reactor thermal power at 57-percent (%) and reducing for control rod sequence exchange.
	0300	Reactor thermal power at 52% for control rod sequence exchange.
	0600	Increasing thermal power, control rod sequence exchange in progress.
	1230	Control rod sequence exchange complete, commenced power ascension from 57% thermal power.
	1430	Commenced PCIOMR from 87% thermal power.
4/2	1130	Reactor thermal power at 100%, maximum flow, rod limited.
4/3	0045	Received high vibration alarm on "B" recirculation pump, reducing thermal power.
	0200	Reactor thermal power at 98% due to "B" recirculation pump high vibration.
	1200	Reactor thermal power at 97% due to "B" recirculation pump high vibration.
	1930	Commenced reducing thermal power for removal of "C" reactor feed water (RFW) pump from service for maintenance and control rod pattern adjustment.
	2100	Reactor thermal power at 74% for "C" RFW pump maintenance and control rod pattern adjustment.
	2130	Commenced rod withdrawal for control rod pattern adjustment.
4/4	0045	"C" RFW pump back in service, reactor power at 76% and increasing for rod pattern adjustment.
	0200	Control rod pattern adjustment complete, commenced power ascension from 80% thermal power.
	0400	Commenced PCIOMR from 85% thermal power.
	1500	Reactor thermal power at 99%, holding on PCIOMR due to computer problems.
	1835	Commenced PCIOMR from 99% thermal power.
	2000	Reactor thermal power at 100%, maximum flow, rod limited.
4/5	1800	Reactor thermal power at 99%, maximum flow, rod limited.
4/6	0130	Commenced power ascension from 99% thermal power.
	0200	Reactor thermal power at 100%, maximum flow, rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
4/7	0030	Commenced reducing thermal power for turbine control valve test and SI's.
	0200	Reactor power at 86% for turbine control valve test and SI's.
	0345	Turbine control valve test and SI's complete, commenced power ascension.
	0400	Commenced PCIOMR from 96% thermal power.
	0520	Reactor thermal power at 100%, maximum flow, rod limited.
4/8	1200	Commenced reducing thermal power for removal of "B" RFW pump from service for maintenance.
	1305	"B" RFW pump out-of-service for maintenance, reactor power at 73%.
	1500	Reactor power at 72% for maintenance on "B" RFW pump.
	2200	"B" RFW pump back in service, reactor power at 73%, holding for removal of "C" RFW pump from service for maintenance.
	2215	"C" RFW pump out-of-service for maintenance, reactor power at 73%.
4/9	0248	"C" RFW pump back in service, commenced power ascension.
	0400	Commenced PCIOMR from 97% thermal power.
	0500	Reactor thermal power at 100%, maximum flow, rod limited.
	0515	Commenced reducing thermal power due to "R" factor being out-of-limit.
	0600	Reactor power at 98%, "R" factor limited.
	0830	Reactor power at 97%, "R" factor limited.
	0900	Commenced PCIOMR from 97% thermal power.
	1400	Reactor thermal power at 100%, maximum flow, rod limited.
	1600	Reactor thermal power at 99%, maximum flow, rod limited.
	1845	Commenced power ascension from 99% thermal power.
	2100	Reactor thermal power at 100%, maximum flow, rod limited.
4/10	1000	Reactor thermal power at 99%, maximum flow, rod limited.
	1435	Control rod 34-03 scrammed during performance of TI 60, reduced thermal power to 98% (bad solenoid valve on CRD 34-03).
	1825	Solenoid valve repaired on CRD 34-03, reducing thermal power for scram timing control rod 34-03.



Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
4/10 (Cont'd)	1900	Reactor thermal power at 91% for scram timing control rod 34-03.
	1928	Scram timing complete on control rod 34-03, commenced power ascension.
	2030	Commenced PCIOMR from 98% thermal power.
	2300	Reactor thermal power at 100%, maximum flow, rod limited.
4/14	0106	Commenced reducing thermal power for SI 4.3.A.2 (Control Rod Drive Exercise).
	0142	Reactor thermal power at 85% for SI 4.3.A.2.
	0330	SI 4.3.A.2 in progress, increasing thermal power.
	0600	Completed SI 4.3.A.2, commenced power ascension from 93%.
	0637	Commenced PCIOMR from 94% thermal power.
	1500	Reactor thermal power at 100%, maximum flow, rod limited.
4/20	2346	Commenced reducing thermal power for turbine control valve tests and SI's.
4/21	0300	Reactor thermal power at 85% for turbine control valve tests and SI's.
	0510	Turbine control valve test and SI's complete, commenced power ascension.
	0700	Reactor power at 100%, maximum flow, rod limited.
4/27	2200	Commenced reducing thermal power for turbine control valve test, SI's, and control rod pattern adjustment.
4/28	0200	Reactor thermal power at 67% for turbine control valve tests, SI's, and control rod pattern adjustment.
	0420	Turbine control valve tests, SI's, and control rod pattern adjustment complete, commenced power ascension.
	0600	Commenced PCIOMR from 93% thermal power.
	0800	Stopped PCIOMR at 96%, holding due to Xenon transient.
	1000	Commenced PCIOMR from 96% power.
	1300	Reactor thermal power at 100%, maximum flow, rod limited.
4/30	2400	Reactor thermal power at 100%, maximum flow rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 2
4/1	0001	Reactor thermal power at 62%, derated to extend full cycle.
4/8	2300	Reactor thermal power at 61%, derated to extend full cycle.
4/13	2300	Reactor thermal power at 62%, derated to extend full cycle.
4/14	1500	Reactor thermal power at 61%, derated to extend full cycle.
4/16	0001	Reactor thermal power at 62%, derated to extend full cycle.
4/17	0700	Reactor thermal power at 61%, derated to extend full cycle.
4/25	1500	Reactor thermal power at 60%, derated to extend full cycle.
4/29	1500	Reactor thermal power at 61%, derated to extend full cycle.
4/30	2400	Reactor thermal power at 61%, derated to extend full cycle.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 3
4/1	0001	End-of-cycle 5 refuel outage continues.
4/30	2400	End-of-cycle 5 refuel outage continues.

10  
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259  
 UNIT One  
 DATE 5-1-84  
 COMPLETED BY Ted Thom  
 TELEPHONE 205/729-0834

MONTH April 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	750	17	1075
2	1060	18	1082
3	1012	19	1079
4	992	20	1079
5	1078	21	1042
6	1083	22	1077
7	1062	23	1076
8	923	24	1078
9	1032	25	1078
10	1069	26	1080
11	1081	27	1050
12	1081	28	988
13	1074	29	1073
14	1038	30	1072
15	1090	31	
16	1079		

**INSTRUCTIONS**

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260  
 UNIT Two  
 DATE 5/1/84  
 COMPLETED BY Ted Thom  
 TELEPHONE 205/729-0834

MONTH April 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>634</u>	17	<u>628</u>
2	<u>639</u>	18	<u>632</u>
3	<u>638</u>	19	<u>627</u>
4	<u>632</u>	20	<u>626</u>
5	<u>640</u>	21	<u>627</u>
6	<u>639</u>	22	<u>624</u>
7	<u>635</u>	23	<u>620</u>
8	<u>632</u>	24	<u>623</u>
9	<u>629</u>	25	<u>619</u>
10	<u>629</u>	26	<u>619</u>
11	<u>632</u>	27	<u>613</u>
12	<u>629</u>	28	<u>625</u>
13	<u>629</u>	29	<u>590</u>
14	<u>633</u>	30	<u>617</u>
15	<u>636</u>	31	<u></u>
16	<u>632</u>		

## INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-296UNIT ThreeDATE 5/1/84COMPLETED BY Ted ThomTELEPHONE 205/729-0834MONTH April 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	-3	17	-3
2	-3	18	-3
3	-3	19	-4
4	-3	20	-3
5	-3	21	-4
6	-3	22	-3
7	-3	23	-3
8	-3	24	-3
9	-3	25	-3
10	-3	26	-3
11	-3	27	-3
12	-3	28	-3
13	-3	29	-3
14	-3	30	-3
15	-3	31	-3
16	-3		

## INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

## OPERATING DATA REPORT

DOCKET NO. 50-259  
 DATE 5/1/84  
 COMPLETED BY Ted Thom  
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - One
2. Reporting Period: April 1984
3. Licensed Thermal Power (MWt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
N/A

Notes

9. Power Level To Which Restricted, If Any (Net MWe): N/A
10. Reasons For Restrictions, If Any: N/A

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>719</u>	<u>2,903</u>	<u>85,465</u>
12. Number Of Hours Reactor Was Critical	<u>719</u>	<u>2,661.28</u>	<u>52,467.4</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>225.40</u>	<u>6,010.42</u>
14. Hours Generator On-Line	<u>719</u>	<u>2,565.38</u>	<u>51,283.02</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>2,294,374</u>	<u>7,562,932</u>	<u>146,120,611</u>
17. Gross Electrical Energy Generated (MWH)	<u>772,400</u>	<u>2,546,080</u>	<u>48,191,700</u>
18. Net Electrical Energy Generated (MWH)	<u>754,120</u>	<u>2,481,136</u>	<u>46,806,463</u>
19. Unit Service Factor	<u>100</u>	<u>88.4</u>	<u>60.0</u>
20. Unit Availability Factor	<u>100</u>	<u>88.4</u>	<u>60.0</u>
21. Unit Capacity Factor (Using MDC Net)	<u>98.5</u>	<u>80.3</u>	<u>51.4</u>
22. Unit Capacity Factor (Using DER Net)	<u>98.5</u>	<u>80.3</u>	<u>51.4</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>10.6</u>	<u>23.2</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

25. If Shut Down At End Of Report Period, Estimated Date of Startup \_\_\_\_\_

26. Units In Test Status (Prior to Commercial Operation):

Forecast

Achieved

INITIAL CRITICALITY \_\_\_\_\_  
 INITIAL ELECTRICITY \_\_\_\_\_  
 COMMERCIAL OPERATION \_\_\_\_\_

## OPERATING DATA REPORT

DOCKET NO. 50-260  
 DATE 5/1/84  
 COMPLETED BY Ted Thom  
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - Two
2. Reporting Period: April 1984
3. Licensed Thermal Power (Mwt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
N/A
9. Power Level To Which Restricted, If Any (Net MWe): N/A
10. Reasons For Restrictions, If Any: N/A

Notes

	This Month	Yr. to-Date	Cumulative
11. Hours In Reporting Period	<u>719</u>	<u>2,903</u>	<u>80,406</u>
12. Number Of Hours Reactor Was Critical	<u>719</u>	<u>2,612.84</u>	<u>52,577.02</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>290.16</u>	<u>14,190.52</u>
14. Hours Generator On-Line	<u>719</u>	<u>2,568.14</u>	<u>51,060.98</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,452,694</u>	<u>6,487,222</u>	<u>146,632,267</u>
17. Gross Electrical Energy Generated (MWH)	<u>461,900</u>	<u>2,113,070</u>	<u>48,710,358</u>
18. Net Electrical Energy Generated (MWH)	<u>450,808</u>	<u>2,056,996</u>	<u>47,315,599</u>
19. Unit Service Factor	<u>100</u>	<u>88.5</u>	<u>63.5</u>
20. Unit Availability Factor	<u>100</u>	<u>88.5</u>	<u>63.5</u>
21. Unit Capacity Factor (Using MDC Net)	<u>58.9</u>	<u>66.5</u>	<u>55.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>58.9</u>	<u>66.5</u>	<u>55.3</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>8.3</u>	<u>24.1</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): <u>August 1984 - Refuel</u>			

25. If Shut Down At End Of Report Period, Estimated Date of Startup \_\_\_\_\_
26. Units In Test Status (Prior to Commercial Operation):
- |                      | Forecast | Achieved |
|----------------------|----------|----------|
| INITIAL CRITICALITY  | _____    | _____    |
| INITIAL ELECTRICITY  | _____    | _____    |
| COMMERCIAL OPERATION | _____    | _____    |



OPERATING DATA REPORT

DOCKET NO. 50-296  
 DATE 5/1/84  
 COMPLETED BY Ted Thom  
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - Three
2. Reporting Period: April 1984
3. Licensed Thermal Power (Mwt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:  
N/A

Notes

9. Power Level To Which Restricted, If Any (Net MWe): N/A
10. Reasons For Restrictions, If Any: N/A

	This Month	Yr. to-Date	Cumulative
11. Hours In Reporting Period	<u>719</u>	<u>2,903</u>	<u>62,831</u>
12. Number Of Hours Reactor Was Critical	<u>0</u>	<u>0</u>	<u>43,087.80</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>3,878.13</u>
14. Hours Generator On-Line	<u>0</u>	<u>0</u>	<u>42,193.71</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>126,307,711</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>41,597,620</u>
18. Net Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>40,375,256</u>
19. Unit Service Factor	<u>0</u>	<u>0</u>	<u>67.2</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>67.2</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>60.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>60.3</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>0</u>	<u>16.4</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each)			

25. If Shut Down At End Of Report Period, Estimated Date of Startup: August 1984
  26. Units In Test Status (Prior to Commercial Operation):
- |                      | Forecast      | Achieved      |
|----------------------|---------------|---------------|
| INITIAL CRITICALITY  | <u>      </u> | <u>      </u> |
| INITIAL ELECTRICITY  | <u>      </u> | <u>      </u> |
| COMMERCIAL OPERATION | <u>      </u> | <u>      </u> |

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-259  
 UNIT NAME One  
 DATE 5/1/84  
 COMPLETED BY Ted Thom  
 TELEPHONE 205/729-0834

REPORT MONTH April 1984

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
277	4/1/84	S		B					Derated for control rod sequence exchange.
278	4/3/84	F		B					Derated for "C" reactor feedwater pump maintenance and control rod pattern adjustment.
279	4/8/84	F		B					Derated for maintenance on "B" reactor feedwater pump.
280	4/28/84	S		B					Derated for turbine control valve tests, SI's, and control rod pattern adjustment.

<sup>1</sup>  
 F: Forced  
 S: Scheduled

<sup>2</sup>  
 Reason:  
 A-Equipment Failure (Explain)  
 B-Maintenance or Test  
 C-Refueling  
 D-Regulatory Restriction  
 E-Operator Training & License Examination  
 F-Administrative  
 G-Operational Error (Explain)  
 H-Other (Explain)

<sup>3</sup>  
 Method:  
 1-Manual  
 2-Manual Scram.  
 3-Automatic Scram.  
 4-Other (Explain)

<sup>4</sup>  
 Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

<sup>5</sup>  
 Exhibit I - Same Source

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-260  
 UNIT NAME Two  
 DATE 5/1/84  
 COMPLETED BY Ted Thom  
 TELEPHONE 205/729-0834

REPORT MONTH April 1984

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
292	4/1/84	S		H					Derated to extend fuel cycle into August 1984.

<sup>1</sup>  
 F: Forced  
 S: Scheduled

<sup>2</sup>  
 Reason:  
 A-Equipment Failure (Explain)  
 B-Maintenance or Test  
 C-Refueling  
 D-Regulatory Restriction  
 E-Operator Training & License Examination  
 F-Administrative  
 G-Operational Error (Explain)  
 H-Other (Explain)

<sup>3</sup>  
 Method:  
 1-Manual  
 2-Manual Scram.  
 3-Automatic Scram.  
 4-Other (Explain)

<sup>4</sup>  
 Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

<sup>5</sup>  
 Exhibit I - Same Source

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-296  
 UNIT NAME Three  
 DATE 5/1/84  
 COMPLETED BY Ted Thom  
 TELEPHONE 205/729-0834

REPORT MONTH April 1984

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
140	4/1/84	S	719	C	4				End-of-cycle 5 Refuel outage continues (controlled shutdown 9/7/83)

<sup>1</sup>  
 F: Forced  
 S: Scheduled

<sup>2</sup>  
 Reason:  
 A-Equipment Failure (Explain)  
 B-Maintenance or Test  
 C-Refueling  
 D-Regulatory Restriction  
 E-Operator Training & License Examination  
 F-Administrative  
 G-Operational Error (Explain)  
 H-Other (Explain)

<sup>3</sup>  
 Method:  
 1-Manual  
 2-Manual Scram.  
 3-Automatic Scram.  
 4-Other (Explain)

<sup>4</sup>  
 Exhibit G - Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File (NUREG-0161)

<sup>5</sup>  
 Exhibit I - Same Source

CSSC EQUIPMENT

## MECHANICAL MAINTENANCE SUMMARY

For the Month of April 19 84

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-23	High Pressure Fire Protection (26)	0-VLV-26-1418	Adjust relief valve setpoint	None	Unknown	Valve relieving at too low a pressure	MR-A-260329 01-26 is being revised to allow relief valve adjustment

BROWNS FERRY NUCLEAR PLANT UNIT 1

## MECHANICAL MAINTENANCE SUMMARY

For the Month of April 1984CSSC EQUIPMENT

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-11	Radiation monitoring system (90)	1-CAM-90-249	Add oil	None	Normal Use	Low oil level	MR-A-251767
4-5	Emergency equipment cooling water (67)	1-FE-67-0039	Unplug orifice	None	Normal use	Orifice plugged	MR-A-215728
4-5	Emergency equipment cooling water (67)	1-FE-67-0031	Unplug orifice	None	Normal use	Orifice plugged	MR-A-215729
4-9	Drywell control air (32)	1-HCV-32-2523 1-HCV-32-2524	Clean filter	None	Normal use	Restricted air flow	MR-A-263415 Place on PM schedule
4-20	Rx Bldg ventilation system (64)	1-FCO-64-009 1-FCO-64-010	Disassemble clean, and replace solenoid valve	None	Normal use	Affected damper action	MR-A-207045

## BROWNS FERRY NUCLEAR PLANT UNIT \_\_\_\_\_

## MECHANICAL MAINTENANCE SUMMARY

CSSC EQUIPMENTFor the Month of April 19 84

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-25	Fuel Pool cooling system (78)	2-PMP-78-0015	Install new coupling and align pump and motor	None	Normal Use	Excessive vibration	MR-A-155593
4-10	Control Rod Drive System (85)	2-FLT-85-0701	Change filters	None	Dirt/Normal Use	$\Delta$ P Approaching high setpoint	MR-A-263324
4-20	Ex Bldg. ventilation system (64)	2-FCO-64-011B	Install new bladeguide kits	None	Normal Use	Damper not closing tightly	MR-A-253902

## BROWNS FERRY NUCLEAR PLANT UNIT

CSSC EQUIPMENT

## MECHANICAL MAINTENANCE SUMMARY

For the Month of April 19 84

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-4	Diesel air start (86)	3-CKV-86-0571C	Replace check valve	None	Normal age and use	Air receiver leaking down	MR-A-269470 A-153554
4-4	Diesel air start (86)	3-CHK-86-5713A	Replace check valve	None	Unknown	Air receiver leaking down	MR-A-269469
4-11	Stand by liquid control (63)	3-PMP-63-006A	Adjust pump seals	None	Normal age and use	Leakage	MR-A-251756



CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 19 84

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
1984 4/3	4kV shut-down boards and buses	0-RLY-211-52T UIA	Replaced coil and adjusted TD relay	None	Bad coil	Relay not functioning	Replaced bad coil Mr A263407
4/7	Standby diesel generator	0-PX-082-00A	Replaced relay	None	Bad relay	Relay not functioning	Replaced bad relay MR A155976

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 1984

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
1983 7/31	Standby diesel generator	1-00-82-00 air solenoid	Replaced air solenoid	None	Bad solenoid valve	Solenoid will not operate	Replaced bad solenoid on MR A153389
1984 4/2	Containment Interling	1-H2AN-76-104	Replaced motor	None	Bad motor	Motor will not run	Replaced bad motor on MR A264459
4/10	Control rod drive	1-00-85-00 scram pilot solenoid	Replaced air solenoid	None	Burnt coil	Solenoid deenergized	Replaced bad solenoid on MR A267334
4/12	Instrument & control 120VAC power	1-XFA-253-0001B	Replaced voltage regulator & fuses	None	Bad voltage regulator & blown fuses	Low voltage	Replaced bad voltage regulator & blown fuses on MR A254775
4/11	RHR	LPCI MG set 1-MG-74 1-EA	Adjusted voltage	None	Setpoint drift	High voltage	Adjusted voltage on MR A267342
4/18	Instrument & control 120VAC power	1-XFA-253-001B	Bypass regulating transformer	None	Voltage regulator problems	Low voltage	Bypassed the voltage regulator on TACF 1-84-084-57 & MR A267304
4/22	RHR	LPCI MG set 1-MG-74 1 EN	Installed fan	None	Dead air space	Hot environmental conditions causing bearings to run hotter than normal	Installed fan on MR A263683

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 19 84

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
<u>1984</u> 2/4	Temperature monitoring	2-TR-056-004	Pulled new thermocouple cable	None	Bad cable	No reading on recorder	Replaced bad thermocouple cable on MR A207714
4/6	RHR	2-PMP-74-2A	Replaced SBM switch	None	Bad switch	Motor will not start from control room	Replaced bad SBM hand switch on MR A263282

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 1984

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
984 /27	Core Spray Cooling	3-MIS-75-70A	Replaced transformer	None	Open winding in transformer	No voltage output	Replaced bad transformer on MR #A-264698
/3	Standby Diesel Generator	3-DG-82-3C	Replaced motor endbells and bearings	None	Abnormal wear	None. Found during SI 4.9.A.1.d.	Replaced both endbells & bearing on MR #A-141739
/6	Reactor Protection	3-RLY-99-63X 8535A1	Replace Lexan coil spool	None	None	None	Replace with Century Series coil on MR #A-202389
/9	HPCI	3-RLY-73-23A K48	Replace Lexan coil spool	None	None	None	Replaced with Century Series coil/spool type on MR #A-202388 2
/11	High-Pressure Fire Protection	3-C026-00 Alarm	Re-mount smoke detector	None	Detector being loose from base	Smoke detector alarming	Remounted smoke detector on MR #A-269479
/12	HPCI	3-LCV-73-08	Replace coil	None	Shorted coil	None. Found during EMI 57.	Replaced bad coil on MR #A-155947
/17	CO <sub>2</sub> Storage Fire Protection	3XS-39-26F	Relocate smoke detector	None	Improper mounting	None. Found hanging by the mount.	Remounted smoke detector on MR #A-140767
/24	RHR	3-MVOP-74-47	Replace motor	None	Burned commutator	Motor will not run	Replaced motor on MR #A-251856

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT  
APRIL 1984

A. Critical Path Activities

1. PO392 CRD Scram Discharge Header Modification - Piping was complete and ready for hydrostatic test on April 21. Hydrostatic test is pending the completion of tagging all valves.
2. PO392 CRD Scram Discharge Header Hanger/Support Modification - Of 119 hangers, 52 have been completed. Detailed breakdown is as follows:
  - a. Of twelve locations requiring inspection of existing hangers, 11 are complete.
  - b. Of 47 locations requiring removal only, 31 are complete.
  - c. Of eighteen locations requiring removal and installation of new hangers, 10 are complete.
  - d. Of 38 locations requiring new hangers, none are complete.
  - e. Of four locations requiring a modification to an existing hanger, none are complete.
3. PO538 - Installation of blind flanges to control rod drive (CRD) header. This work was mechanically completed on April 16.
4. PO392 (Instrumentation) - This work continues with the pulling and terminating of cable.

B. Refuel Floor

Work began on April 19 on the high density fuel storage rack removal. At present, 11 of 41 racks have been removed. This work is being delayed pending a revision to the work plan. MMI 34 was successfully performed on the unit 3 refuel bridge crane.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT  
APRIL 1984

C. Balance of Plant

Work continued on "A" Residual Heat Removal (RHR) heat exchanger during the month. Ten tube plugs were required after probolog was completed. All work was completed by April 25 and released to Operations. Probolog of the five "B" string feedwater heaters was completed with a total of 11 tubes to plug. After plugging the tubes, "B" string was closed. Probolog was completed on 2A Reactor Building Closed Cooling Water (RBCCW) heat exchanger with no tubes requiring plugging. Maintenance work on the condensers continued.

D. Turbine

An oil flush was started on April 11. During a routine filter changeout, the pumps were inadvertently started, resulting in an oil spill of approximately 1000 gallons. Cleanup operation delayed work on the turbine for a period of time. The boots were changed on "A", "B", and "C" feed pump turbine. "C" low-pressure turbine, No. 4 exciter coupling was aligned.

E. IHSI

IHSI continued during April. By month end, 92 of 96 identified recirculation weld joints were complete. Of the 147 total identified welds, 114 are complete. Heat treatment of residual heat removal weld joints will be conducted upon the conclusion of the recirculation weld joints.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT  
APRIL 1984

F. Other Mechanical Work

1. Valve repair 1-55 and 1-56: Both valves were mechanically complete on April 16. EMI 18 was completed on valve 1-56 on April 26, 1984. The limit switch for valve 1-55 has a mid-May delivery date. This work is continuing.
2. P0547 Replacement of Recirculation Valves: This modification was complete.
3. Main Steam Isolation Valve (MSIV) Repair: This work is continuing and is approximately 40-percent complete. The expected completion date is June 23, 1984. This work is approaching critical path.
4. P0612 Install 1/2" Stainless Steel Flex Line: Design of hangers is continuing. Main Steam Relief Valve (MSRV) installation is required to complete this modification and is currently being delayed pending receipt of replacement solenoids.
5. P0691/689 Modify 64-series Valves: This work is continuing. This work has been slowed due to a lack of 309L welding rods. Efforts are underway to expedite shipment of suitable welding rods.
6. P0684 Torus Vacuum Breaker: Machining of hinge arms has been completed. Waiting on vendor spare parts to reassemble and install breakers.
7. P0547 Replacement of Recirculation Valves: This modification was completed.
8. P0569 Replacement of Reactor Pressure Vessel (RPV) Head Vent Valves: This work is continuing.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT  
APRIL 1984

F. Other Mechanical Work (Continued)

9. Valve 74-60 and 61: Both valves passed local leak rate test (LLRT) on April 19.
10. Valve Repair 74-54: Repair was completed and passed LLRT on April 19.
11. L1970/P0709 Emergency Equipment Cooling Water (EECW) Piping Changeout on Diesel Generators: Prefabrication work was completed for 3D diesel generator and was continuing on 3C diesel.
12. Visual inspection of hydraulic snubbers lacks approximately one week of work and is continuing.
13. Remove/Replace Hydraulic Snubbers: This work is continuing and lacks a minimum of 14 days of work which is dependent upon the as-found condition of the snubbers upon disassembly.
14. MSRV's: This work is continuing. Twelve of 13 valves are onsite with one still being repaired at Wyle Labs. Those 12 have been set in place.
15. P0695 Modify Valves 84-8A, B, C and D: This work began on April 26 and is continuing.
16. P0690 Modify FCV 76-18: This work began on April 26 and is continuing.
17. P0688 Modify FCV 76-19: This work began on April 26 and is continuing.
18. P0730 Removal of Head Spray Piping: Electrical work plans are in the approval cycles while mechanical work plans are still being written.



OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT  
APRIL 1984

F. Other Mechanical Work (Continued)

19. P5019 Remove Valve 3-2-1143 and Cap Torus Penetration X-228: This work was completed.

G. Electrical/Instrumentation

1. P0399 Provide Long Term Solution to I&C Bus Problems: Work is 15-percent complete and continuing.
2. P0533 Torus Temperature Monitoring Devices: Work is continuing and is 90-percent complete.
3. P0415 Temperature Instrumentation - Reactor Feedwater Nozzles: Work is 75-percent complete based on the use of amphenol connectors. These connectors have now been found to no longer be manufactured. Another type of connector is presently being designed. The effect on the modification is unknown at this time.
4. P0422 Provide Redundant Class IE Protection: Work is 60-percent complete and continuing.
5. TIP Maintenance: This work was resumed April 30 and is presently being worked.
6. P0479 Emergency Lighting: This work is being done as manpower is available.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT  
APRIL 1984

H. Torus

Torus work was as follows:

1. Torus Internal Modifications: Heat cure treatment was completed in all 16 bays on April 25. Touch up painting is being conducted and near completion.
2. Attached piping and prefabrication work continued during April. At present, 286 of 454 supports are complete.
3. PO093 Install Catwalk Gratings: This work is continuing.
4. Repair of baseplate on RHRSW spring support H-59 was completed.
5. The expected torus fill date is May 7.

I. Planning and Scheduling

1. Unit 3 cycle 5: Principal effort has been directed toward the revision of the major schedule with consideration for progress to date on major work and the system outage sequencing for return to service.
2. Unit 2 cycle 5: Preliminary schedules for brine prepared and reviewed. Planned work scope is not fully known at this time.

J. ALARA

1. Decontaminated floor and outside RWCU pumps rooms.
2. Decontamination efforts continuing in drywell and torus.
3. High level waste was removed from drywell.
4. Fuel pool spacers were washed down upon removal from unit 2 spent fuel pool in preparation for shipment offsite.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT  
APRIL 1984

J. ALARA (Continued)

5. Decontamination efforts continued on MSIV's.
6. Decontaminated 74-54 valve.
7. RWCU valve 6A-1 was capped off to prevent further leakage of contaminated water.

K. Administrative

The overtime percentage for the month of March was 23-percent with 105,873 straight time hours and 31,581 overtime hours. As of March 31, 1984, year-to-date overtime percentage was 20-percent, 801,257 straight time hours and 203,765 overtime hours. The overall goal of the overtime percentage is 17-percent.

The Outage & Maintenance budget for March was \$2,730,360 and the expenditures were \$2,454,948 with year-to-date budget being \$16,532,974 and actual year-to-date expenditures being \$16,675,711.

The capital budget was \$2,594,500 and the expenditures were \$8,700,140 with year-to-date budget being \$21,468,800 and actual year-to-date expenditures being \$19,281,226. Overall budget was \$5,324,860 and the overall expenditures were \$11,155,088 with year-to-date budget being \$38,001,774 and actual year-to-date expenditures being \$35,956,938.

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

MAY 10 1984

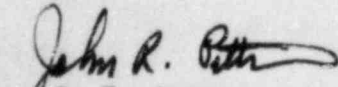
Nuclear Regulatory Commission  
Office of Management Information  
and Program Control  
Washington, DC 20555

Gentlemen:

Enclosed is the April 1984 Monthly Operating Report to NRC for Browns Ferry Nuclear Plant Units 1, 2, and 3.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

  
G. T. Jones  
Power Plant Superintendent

Enclosures

cc: Director, Region II  
Nuclear Regulatory Commission  
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