

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT TO NRC

June 1, 1984 - June 30, 1984

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

Submitted by:

D.T. Kimo
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Operations Summary

June 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 six reportable occurrences and no revisions to previous reportable occurrences reported to the NRC during the month of June.

Unit 1

There were three scrams on the unit during the month. On June 2, 1984, the reactor scrammed on turbine control valve fast closure (generator load rejection) when the turbine generator tripped due to generator field ground relay operation. On June 20, 1984, the reactor was manually scrammed when unidentified drywell leakage exceeded the technical specification limits. The reactor was manually scrammed on June 27, 1984 when a main steam relief valve opened and failed to reseal during startup.

Unit 2

There was one scram on the unit during the month. On June 16, 1984, the reactor scrammed on turbine stop valve closure when personnel accidentally bumped the low bearing oil tank level switch which tripped the main turbine.

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)

June 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	0.00609	0.00490	0.00403
Feedwater nozzle	0.29185	0.21218	0.15429
Closure studs	0.23676	0.17302	0.13233

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

Common System

Approximately 9.04×10^5 gallons of waste liquids were discharged containing approximately 2.41×10^{-1} curies of activities.

Operations Summary (Continued)

June 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 September 1, 1984 with a scheduled restart date of January 31, 1985. 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)

June 1984

Unit 3

Unit 3 shutdown for its fifth refueling outage on September 7, 1983, with a scheduled restart date of September 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

Date	Time	Event
		Unit 1
6/1	0001	Reactor thermal power at 100-percent (%), maximum flow, rod limited.
	0925	Commenced reducing thermal power for control rod pattern adjustment.
	1000	Reactor thermal power at 85% for control rod pattern adjustment.
	1150	Control rod pattern adjustment complete, commenced PCIOMR from 85% power.
	1500	Reactor thermal power at 89%, holding up on PCIOMR for flux shaping.
	1611	Increased thermal power to 90% for flux shaping.
	1630	Reduced thermal power to 89% for flux shaping.
	1647	Reduced thermal power to 88% for flux shaping.
	2335	Reactor thermal power at 88% for turbine control valve test and SIs.
6/2	0145	Turbine control valve test and SIs complete, commenced PCIOMR from 88% thermal power.
	1100	Reactor thermal power at 100%, maximum flow, rod limited.
	1739	Reactor Scram No. 173 from 100% thermal power on TCV fast closure (generator load rejection) when the turbine generator tripped due to generator field ground relay (64GF) operation. This was caused by the plate-out or crud buildup of solids on the excitation rectifiers cooling water isolator tubes from the stator cooling water.
6/3	1000	Commenced rod withdrawal for startup.
	1357	Reactor Critical No. 196.
	1830	Rolled Turbine/Generator (T/G).
	1900	Synchronized generator, commenced power ascension.
6/4	1430	Commenced PCIOMR from 85% thermal power.
6/5	1415	Stopped PCIOMR at 93% due to generator rectifier problems.
	2300	Reactor thermal power at 92%, generator rectifier limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
6/6	0700	Reactor thermal power at 91%, generator rectifier limited.
	0900	Commenced power ascension from 91% power.
	1000	Commenced PCIOMR from 92% thermal power.
	2100	Commenced reducing thermal power from 95% due to recirculation pump "A" seal leakage annunciation.
6/7	0100	Reactor thermal power at 91% for investigation of "A" recirculation pump seal leakage annunciation.
	0953	Reduced thermal power to 90%, "A" recirculation pump seal leakage annunciator limited.
	0954	Commenced power ascension from 90% thermal power.
	1005	Reactor power at 91%, "A" recirculation pump seal leakage annunciator limited.
	1545	Commenced PCIOMR from 91% thermal power.
	1950	Reactor thermal power at 95%, maximum flow, rod limited.
6/8	1500	Reactor thermal power at 97%, maximum flow, rod limited.
	2106	Commenced reducing thermal power for control rod pattern adjustment.
	2134	Reactor power at 73% for control rod pattern adjustment.
	2200	Control rod pattern adjustment complete, commenced power ascension.
	2300	Reactor thermal power at 75%, holding for turbine control valve test and SIs.
6/9	0100	Turbine control valve test and SIs complete, commenced power ascension.
	0730	Commenced PCIOMR from 92% thermal power.
	1310	Stopped PCIOMR at 99%, computer out-of-service.
	1400	Reactor power at 98%, computer limited.
	1650	Commenced PCIOMR from 98% thermal power.
	2100	Reactor thermal power at 100%, maximum flow, rod limited.
6/10	0800	Reactor thermal power at 99%, maximum flow, rod limited.
	1620	Commenced reducing thermal power for SI 4.3.A.2 (Control Rod Exercise).
	1700	Reactor power at 96% for SI 4.3.A.2.
	1730	SI 4.3.A.2 complete, commenced PCIOMR.
	2130	Reactor thermal power at 100%, maximum flow, rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
6/11	0937	Recirculation pump "B" tripped, reducing thermal power. Reactor thermal power at 62%, recirculation pump "B" limited.
	1300	
	1335	Recirculation pump "B" back in service, commenced power ascension.
	1700	Commenced PCIOMR from 98% thermal power.
6/16	1800	Reactor thermal power at 100%, maximum flow, rod limited.
	2300	Commenced reducing thermal power for control rod pattern adjustment.
	2333	Reactor thermal power at 68% for control rod pattern adjustment.
6/17	0200	Increasing thermal power for control rod pattern adjustment.
	0230	Control rod pattern adjustment complete, holding at 89% thermal power for turbine control valve test and SIs.
	0505	Turbine control valve test and SIs complete, commenced power ascension.
	0520	Reactor thermal power at 100%, maximum flow, rod limited.
6/18	1500	Reactor thermal power at 99%, maximum flow, rod limited.
6/19	0700	Reactor thermal power at 100%, maximum flow, rod limited.
	2250	Commenced reducing thermal power for shutdown due to excessive leakage into drywell floor drain.
6/20	0050	Reactor manual Scram No. 174 from 59% thermal power to determine source of leakage into drywell floor drains (later determined to be "B" recirculation pump seal). The unit remains down for repair of the seal and for a short maintenance outage.
	1315	Unit in cold shutdown.
6/21	2230	"B" string low-pressure heaters tagged out for maintenance.
6/22	0400	"A" bank of drywell blowers tagged out for maintenance.
	1900	"B" string low-pressure heater maintenance complete.

Significant Operational Events

Date	Time	Event
Unit 1 (Continued)		
6/23	0200	Maintenance complete on "A" bank of drywell blowers.
6/25	1046	Maintenance and testing complete on "B" recirculation pump.
6/27	0010	Commenced rod withdrawal for startup.
	0230	Reactor Critical No. 197.
	0557	Main Steam Relief Valve (MSRV) 1-4 opened.
	0608	Reactor Manual Scram No. 175 from 1% thermal power for replacement of MSRV 1-4.
	1400	Reactor in cold shutdown.
6/28	1538	Maintenance complete on MSRV 1-4.
	1637	Shutdown cooling out-of-service and valves lined up for local leak rate test on FCV 74-48.
	1925	Local leak rate test on FCV 74-48 complete.
	2110	FCV 74-48 and shutdown cooling back in service.
6/29	0625	Commenced rod withdrawal for startup.
	0821	Reactor Critical No. 198.
	1315	SI 4.6.D-2 performed on MSRV 1-4.
	1750	Reactor pressure at 100 psi, holding for drywell entry to inspect MSRV 1-4. Reactor thermal power at 5%.
	1940	MSRV 1-4 inspection complete, valve checked out okay.
	2020	Commenced rod withdrawal from 5% thermal power.
	2250	Rolled T/G.
	2355	Synchronized generator, commenced power ascension from 22% thermal power.
6/30	0700	Reactor thermal power at 63%, startup SIs in progress, decreasing thermal power.
	1800	Startup SIs complete, commenced power ascension from 54% thermal power.
	2400	Reactor thermal power at 86% power ascension in progress.

Significant Operational Events

Date	Time	Event
		Unit 2
6/1	0001	Reactor thermal power at 60% to extend fuel cycle and administrative hold because all ADS relief valve cables are routed through the same cable tray.
6/12	0700	Reactor thermal power at 61% to extend fuel cycle and administrative hold.
6/16	0027	Reactor Scram No. 152 from 61% thermal power on turbine stop valve closure when an Auxiliary Unit Operator accidentally bumped the low bearing oil tank level switch which tripped the main turbine.
	0645	Commenced rod withdrawal for startup.
	1022	Reactor Critical No. 162.
	1530	Rolled T/G.
	1600	Synchronized generator, commenced power ascension.
6/17	0440	Reactor thermal power at 60% to extend fuel cycle and administrative hold.
	1500	Reactor thermal power at 58% to extend fuel cycle and administrative hold.
	2300	Reactor thermal power at 57% to extend fuel cycle and administrative hold.
6/18	0700	Reactor thermal power at 56% to extend fuel cycle and administrative hold.
	0835	Increasing thermal power to 60%.
	0900	Reactor thermal power at 60% to extend fuel cycle and administrative hold.
6/23	0700	Reactor thermal power at 59% to extend fuel cycle and administrative hold.
6/25	1500	Reactor thermal power at 60% to extend fuel cycle and administrative hold.
6/26	2300	Reactor thermal power at 59% to extend fuel cycle and administrative hold.
6/28	0001	Reactor thermal power at 60% to extend fuel cycle and administrative hold.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 2 (Continued)
6/30	0815	Inserted control rod 38-47 for maintenance on accumulator, reduced thermal power to 58%.
	1809	Maintenance complete on control rod 38-47 accumulator, withdrew control rod and commenced power ascension.
	1830	Reactor thermal power at 60% to extend fuel cycle and administrative control.
	2400	Reactor thermal power at 60% to extend fuel cycle and administrative control.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 3
6/1	0001	End-of-cycle 5 refuel outage continues.
6/30	2400	End-of-cycle 5 refuel outage continues.

13
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
UNIT Browns Ferry-1
DATE 7-1-84
COMPLETED BY Ted Thom
TELEPHONE 205/729-0834

MONTH June 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	983
2	753
3	81
4	810
5	962
6	983
7	976
8	981
9	1003
10	1055
11	960
12	1057
13	1055
14	1058
15	1057
16	1023

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	992
18	1052
19	1040
20	12
21	-13
22	-15
23	-12
24	-13
25	-12
26	-14
27	-11
28	-11
29	-12
30	548
31	

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 Browns Ferry-2
 DATE 7-1-84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

MONTH June 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	595
2	604
3	601
4	604
5	592
6	594
7	600
8	595
9	600
10	601
11	594
12	606
13	606
14	604
15	602
16	107

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	552
18	567
19	591
20	591
21	590
22	597
23	587
24	581
25	587
26	585
27	582
28	579
29	591
30	576
31	

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. 50-296
 UNIT Browns Ferry-3
 DATE 7/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

MONTH June 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	-5
2	-4
3	-4
4	-5
5	-5
6	-5
7	-5
8	-5
9	-5
10	-5
11	-4
12	-4
13	-5
14	-5
15	-5
16	-5

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	-5
18	-4
19	-5
20	-5
21	-5
22	-5
23	-5
24	-5
25	-5
26	-5
27	-5
28	-5
29	-4
30	-5
31	

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 7/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - One
2. Reporting Period: June 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	720	4,367	86,929
12. Number Of Hours Reactor Was Critical	479.82	3,885.10	53,691.22
13. Reactor Reserve Shutdown Hours	240.18	465.58	6,250.60
14. Hours Generator On-Line	455.57	3,764.95	52,482.59
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	1,392,881	11,312,995	149,870,674
17. Gross Electrical Energy Generated (MWH)	455,600	3,788,190	49,433,810
18. Net Electrical Energy Generated (MWH)	440,337	3,688,762	48,014,089
19. Unit Service Factor	63.3	86.2	60.4
20. Unit Availability Factor	63.3	86.2	60.4
21. Unit Capacity Factor (Using MDC Net)	57.4	79.3	51.9
22. Unit Capacity Factor (Using DER Net)	57.4	79.3	51.9
23. Unit Forced Outage Rate	36.7	13.1	23.1
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 7/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

OPERATING STATUS

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

	This Month:	Yr. to Date	Cumulative
11. Hours In Reporting Period	<u>720</u>	<u>4,367</u>	<u>81,870</u>
12. Number Of Hours Reactor Was Critical	<u>710.08</u>	<u>4,066.92</u>	<u>54,031.10</u>
13. Reactor Reserve Shutdown Hours	<u>9.92</u>	<u>300.08</u>	<u>14,200.44</u>
14. Hours Generator On-Line	<u>704.45</u>	<u>4,016.59</u>	<u>52,509.43</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,382,462</u>	<u>9,326,074</u>	<u>149,471,119</u>
17. Gross Electrical Energy Generated (MWH)	<u>428,260</u>	<u>3,002,890</u>	<u>49,600.178</u>
18. Net Electrical Energy Generated (MWH)	<u>414,159</u>	<u>2,919,529</u>	<u>48,178,132</u>
19. Unit Service Factor	<u>97.8</u>	<u>92.0</u>	<u>64.1</u>
20. Unit Availability Factor	<u>97.8</u>	<u>92.0</u>	<u>64.1</u>
21. Unit Capacity Factor (Using MDC Net)	<u>54.0</u>	<u>62.8</u>	<u>55.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>54.0</u>	<u>62.8</u>	<u>55.3</u>
23. Unit Forced Outage Rate	<u>2.2</u>	<u>5.8</u>	<u>23.6</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	<u> </u>	<u> </u>
INITIAL ELECTRICITY	<u> </u>	<u> </u>
COMMERCIAL OPERATION	<u> </u>	<u> </u>

OPERATING DATA REPORT

DOCKET NO. 50-296
 DATE 7/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - Three
 2. Reporting Period: June 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>720</u>	<u>4,367</u>	<u>64,295</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>65.6</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>65.6</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>59.0</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>59.0</u>
23. Unit Forced Outage Rate			<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

REPORT MONTH June 1984

DOCKET NO. 50-259
 UNIT NAME Browns Ferry-1
 DATE 7/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
282	6/2/84	F	25.35	A	3				Reactor scram on TCV fast closure (generator load rejection).
283	6/8/84	S		H					Derated for control rod pattern adjustment
284	6/11/84	F		A					Recirculation pump "B" tripped
285	6/16/84	S		H					Derated for control rod pattern adjustment
286	6/20/84	F	173.27	A	1				Reactor scram to determine source of leakage into drywell
287	6/27/84	F	65.78	A	1				Reactor scram for replacement of MSRV 1-4

19

¹
 F: Forced
 S: Scheduled

²
 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)

³
 Method:
 1-Manual
 2-Manual Scram
 3-Automatic Scram
 4-Other (Explain)

⁴
 Exhibit G - Instructions
 for Preparation of Data
 Entry Sheets for Licensee
 Event Report (LER) File (NU REG-
 0161)

⁵
 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-260
 UNIT NAME Browns Ferry-2
 DATE 7-1-84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

REPORT MONTH June 1984

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
293	6/1/84	S		H					Derated to extend fuel cycle and administrative hold because all ADS relief valve cables are routed through the same cable tray.
294	6/16/84	F	15.55	G	3				Reactor scram on turbine stop valve closure - AUO bumped low bearing oil tank level switch.
295	6/17/84	S		H					Derated to extend fuel cycle and administrative hold because all ADS relief valve cables are routed through the same cable tray.

1
 F: Forced
 S: Scheduled

2
 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)

3
 Method:
 1-Manual
 2-Manual Scram.
 3-Automatic Scram.
 4-Other (Explain)

4
 Exhibit G - Instructions
 for Preparation of Data
 Entry Sheets for Licensee
 Event Report (LER) File (NURLE-
 0161)

5
 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH June 1984

DOCKET NO. 50-296
 UNIT NAME Browns Ferry-3
 DATE 7/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
140	6/1/84	S	720	C	4				End-of-cycle 5 refueling outage continues (controlled shutdown 9/7/83)

¹
 F: Forced
 S: Scheduled

²
 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)

³
 Method:
 1-Manual
 2-Manual Scram.
 3-Automatic Scram.
 4-Other (Explain)

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

(9/77)

⁵
 Exhibit I - Same Source

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

BF ENSIL 30
Appendix B
9/29/82

For the Month of June 1984

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Prevent Recurrence
1984 6/22	High-Pressure fire protection	0-PMP-26-00B	Replace bearings and oil	None	Excessive wear	Excessive vibration	Replaced bad bearings MR #141789
6/16	Stand-by diesel generator	0-GEN-82-00B	Troubleshoot	None	Grounded test equipment	Diesel would not stop on command	Removed grounded oscillograph and ground cleared MR #254698

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 1984

BF EMSIL 30

Appendix B

9/29/82

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 1/6	Neutron monitoring	1-LPRM-92-24-41C, 32-09D, 32-17C, 24-17C, 32-49D	Replace connectors	None	Bad connectors	Inoperable LPRM cables	Replaced bad connectors MR #203129
1984 3/13	Unit preferred 120 VAC	1-00-252-00 switch volt-meter	Replace switch-voltmeter	None	Bad switch-voltmeter	Abnormal alarm will not clear	Replaced bad switch-voltmeter MR #267850
4/4	RHR	1-FCV-74-48	Record motor voltage and current	None	None	None	Followup testing to LER 259-84012 MR #252075 23
4/18	Reactor water recirculation	1-SI-68-71	Replace tachometer	None	Bad tachometer	SI-68-71 reading down scale	Replaced bad tachometer MR 267298
4/20	I&C 120VAC	1-XFA-253-A	Bypass regulating transformer	None	Unbalanced load	Load I&C voltage	Replaced regulating transformer and monitored voltage MRs 254777, 252078, 252076, 252077
5/3	Reactor building closed cooling water	1-CLN-70-144	Replace motor, wheel assembly, and solenoid	None	Bent shaft	Breaker for A-4 cooler tripped after 10 sec.	Replaced bad motor, wheel assembly and solenoid MR #268519

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June * 19 84

BF EMSIL 30
Appendix B
9/29/82

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 6/6	Air conditioning	1-CHR-31-0013	Replace compressor	None	Wear	Chiller will not run	Replaced bad compressor MR #265384
6/13	Associated electrical	1-RLY-57-83	Replace relay	None	Bad coil	Breaker tripping transferring load to alternate source	Replaced bad relay MR #256195
6/22	RHR service water	1-LA-23-80A	Replace level switch	None	Bad level switch	Level switch indicating false level	Replaced bad level switch MR 265985 24
6/25	RPS	1-RLY-99-5AK5D	Replace relay coil	None	Bad coil	Relay smoking	Replaced bad coil MR #267439
6/23	RB closed cooling water	1-FSV-70-85	Replace solenoid coil	None	Bad coil	Damper will not operate	Replaced bad solenoid coil MR 254468
6/23	Diesel 125VDC	1&2-SW-254-00D	Replace speed switch	None	Bad switch	Speed switch contacts will not seal in	Replaced bad speed switch MR #254472
6/26	Main steam	1-FCV-1-55	Replace coil	None	Bad coil	FCV will not operate	Replaced bad coil MR 267386

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

BF ENSIL 30
Appendix B
9/29/82

For the Month of June 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 5/31	Reactor Building Closed Cooling Water	2-LA-70-2A	Replace card	None	Bad card	RBCCW surge tank high level alarm	Replaced bad PC card MR #252859
6/9	Radiation Monitoring	2-RM-90-249	Replace motor	None	Bad bearings	CAM motor noisy	Replaced bad motor MR #265452
6/13	Reactor Building HVAC	2-FCO-64-5A	Replace motor	None	Bad motor	Motor will not close damper	Replaced bad motor MR #141709

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

BF EHSIL 30
Appendix B
9/29/82

For the Month of June '19 84

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action To Be Taken
1984 2/15	4kV shut-down boards	3-RLY-211-CASA-1	Replace coil	None	None	None	Replaced with new type coil MR #202391 (ref. SEMI 40)
3/8	Standby diesel generator	3-RLY-82-CRA	Replace relay	None	Cracked coil	None	Replaced bad relay MR #254752 (ref. SEMI 37)
3/8	Standby diesel generator	3-RLY-82-VSRD	Replace relay	None	Cracked coil	None	Replaced bad relay MR #254756 (ref. SEMI 37)
4/30	RHR	3-MVPO-74-0060	Replace torque switch	None	Broken torque switch	None	Replaced broken torque switch MR #254296 13/8
3/7	HPCI	3-LS-73-5	Replace cable	None	Bad/broken cable	Level switch inoperable	Replaced bad cable 3E52655-II MR #202323

BROWNS FERRY NUCLEAR PLANT UNIT 2CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of June 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
6-1	Reactor Core Isolation Cooling (71)	2-TRB-71-009	Drained oil, cleaned filter and added new oil.	None	Routine Maintenance	N/A	N/A

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of June 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
6-1	Standby Diesel Generator (82)	3-DG-82-373	Annual inspection on diesel generator 3B	None	N/A	N/A	N/A
6-2	Diesel Starting Air (86)	3-DG-86-003C	Annual inspection on diesel generator 3C	None	N/A	N/A	N/A
6-5	Standby Diesel Generator (82)	3-DG-82-003A	Annual inspection on diesel generator 3A	None	N/A	N/A	N/A
6-8	Standby Diesel Generator (82)	3-00-82-0000	Move pressure sensor to bottom connection	None	N/A	N/A	This was to resolve a NRC concern
6-8	High Pressure Fire Protection (26)	3-VLV-26-0087	Disassemble, clean and reassemble Magnetic by pass valve	None	Normal age & use	Valve leaking thru	MR A-251922

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JUNE 1984

I. Work Synopsis

The unit 3 end-of-cycle 5 refueling outage schedule progressed through day number 298 (of 351) by the end of the June report period. Major preplanned work items include P0392 CRD Scram Discharge Header Modification (Electrical and Mechanical), and P0399 Instrument and Control Bus Modification (providing long-term solution to instrument and control bus problems including a related ECN P5097 to install a 10KVA regulating transformer). A major emergent work item was identified in the need for jet pump nozzle weld overlay which necessitated vessel draindown. This additional work had a significant duration effect on the overall outage duration. The following is a summary of the major events during this work period.

A. Critical Path Activities

1. Jet Pump Nozzle Repair Reactor Vessel Draindown -- Reactor cavity was drained on June 16 after special procedures were approved. All preparations for continuing the draindown into the vessel were completed on June 22 at which time the draindown was resumed. Draindown was complete at 0200 hours on June 24, 1984. The manual welding on nozzles N8A and N8B was started at 0730 hours and completed at 1330 hours on June 24. The automatic welding of the reinforcement weld was then started. At 0230 hours on June 27, the automatic welding process was completed on the base metal layer and the vessel refill was begun. The weld overlay process was continued in parallel with vessel/cavity refill and was approximately 90-percent complete at the end of the June report period.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JUNE 1984

A. Critical Path Activities (Continued)

2. PO399 Instrument and Control Bus Modification --- All cable terminations complete that are necessary prior to bus outages. Awaiting bus outages to continue work.
3. P5097 Install 10 KVA Regulating Transformer to Support PO399 -- Completed core drilling through P-line wall. Presently installing conduit on P-line wall. Work is 40-percent complete.
4. PO392 CRD Scram Discharge Header (Mechanical) -- Work is continuing on the rerouting of H_2O_2 and nitrogen purge lines. Continuing efforts on support hangers, lacking 6 of 119 hangers being complete.
5. PO392 (Electrical) -- Work is continuing on conduit and junction box hangers. Design and installation method problems are delaying timely completion of work in the spreader room.
6. Main Steam Isolation Valves (MSIVs) -- All valves have been reassembled. Work is being held up pending receipt of five additional 1-7/8" bonnet nuts.

B. Refuel Floor

Sheave bushings were replaced on the overhead crane. This work was started on June 3 and completed on June 6, 1984. The shuffle of spent fuel in the fuel pool continued during the month in preparation for refuel of unit 3 reactor vessel. This work was completed on June 15. Lead Test Assembly inspections were completed on June 13. This work was conducted by General Electric. The remainder of the month the refuel floor personnel were involved with equipment and system preparations, checkout and installation in support of cavity and vessel draindown for jet pump nozzle weld overlay.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JUNE 1984

C. Balance of Plant

Work continued on "C" Residual Heat Removal (RHR) heat exchanger during the month. Seven tubes were plugged after probolog. All work was completed on June 7.

Modification work continued on the diesel generators in an effort to meet the commitment date of August 1 for completion of all eight diesels. The "3B" and "3A" diesel generators were completed on June 3 and June 10 respectively. The unit 1 & 2 "D" diesel was tagged on June 18 and completed on June 25.

Start of modification work on the next diesel generator (unit 1 & 2 "C") was delayed due to an unscheduled unit 1 trip.

D. Turbine

Replacement of the four worn wheels on the turbine building crane was completed on June 7, 1984.

E. Other Mechanical Work

1. Valves 1-55 and 56 -- Both valves were retested on June 1 and failed. The valves were repaired and are awaiting retest. Both valves had EMI-18 (Motor Operator Checks) conducted on June 19, 1984.
2. PO730 Head Spray Piping Removal -- This modification is continuing. Presently, piping is being cut.
3. PO612 Stainless Steel Flex Line Installation -- All hangers for the flex line were completed by June 21. All remaining work is continuing.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JUNE 1984

E. Other Mechanical Work (Continued)

4. PO688/690 76-Series Valves -- All work was completed on June 6, 1984.
5. PO689/691 64-Series Valve Modification to Allow the Flange Side to be Tested -- Work is presently delayed pending the receipt of "O" rings to continue work. Expected delivery date is July 14, 1984.
6. PO695 84-Series Valve Modification to Allow the Flange Side to be Tested -- This work is continuing. Repair work required on 84-8A is being delayed pending resolution of hold order clearance requirements.
7. PO684 Torus Vacuum Breakers -- Work is continuing; awaiting receipt of remaining hinge arms and discs in order to complete this modification.
8. Valve 71-580 -- Repair work is continuing; disk was machined and valve seat is presently being lapped.
9. Valve 69-1 -- Passed Local Leak Rate Test (LLRT) on June 5, 1984.
10. Valves 76-17, 18, and 19 passed LLRT on June 6, 1984.
11. Valves 74-71, 72, and 73 passed LLRT on June 6, 1984.
12. PO569 Reactor Vent Valves -- This work is continuing.
13. PO631 Move Radiation Monitor Element -- All mechanical work was completed June 28, while other work continues.

F. Electrical/Instrumentation

1. Diesel Generators - Completed modifications PO185 Rewiring of Diesel Protective Circuit, PO275 Degraded Voltage Relay Replacements, and PO585 Speed Sensing Device on "3A," "3B" and "1/2 D" diesels. Awaiting outage on "1/2 C" to continue work.
2. P5061 Reroute Conduit and Associated Cables (RHR Instrumentation) That were Cut While Core Drilling for Torus Modification -- Work was completed on June 19, 1984.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JUNE 1984

F. Electrical/Instrumentation (Continued)

3. PO479/590 Emergency Lighting -- Work is continuing.
4. LPRM Connections -- All new assemblies were connected June 5, 1984.
5. PO322/323 Level Transmitters -- Work was delayed due to late arrival of transmitters. Transmitters arrived on site June 14, 1984, and it was then discovered that the compression rings were missing. Work is pending location and receipt of these rings.
6. PO284 Acoustic Monitors -- Work is continuing.
7. PO533 Torus Temperature Devices -- Work is continuing. Work cannot be completed until PO126 is completed (which provides power for checkouts and post modification testing).
8. P3138 RHR Pump Room Cooler Fan Motors -- All work on Loop I RHR is complete. Awaiting outage on Loop II to complete all work activities.
9. NRC 79-01B Modifications -- Work is continuing. Awaiting setpoints from Engineering Design to perform SI's on several modifications.
10. EMI 71 -- All unit 3 cycle 5 motors are complete as of June 17, 1984.
11. EMI 7 -- Five breakers remain to be done this outage.

G. Torus

Torus work was as follows:

1. P2124 Restraints to RWCU Piping in Drywell -- Work was completed on June 14, 1984.
2. Attached piping support work continued with 202 complete of 456.
3. NRC 79-02 Hanger Inspections -- Work continued on inspections and repairs with 425 of 456 complete.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JUNE 1984

H. Planning and Scheduling

1. Unit 3 cycle 5 planning and scheduling emphasis for the month of June was focused primarily on resequencing the work activities to accomodate jet pump instrument nozzle weld overlay and related tasks (vessel draindown). The unit 3 cycle 5 planning staff is continually evaluating the schedule so that changes and refinements can be applied as needed.
2. Unit 2 cycle 5 pre-outage planning continues with several major maintenance items and modifications currently being scoped. A preliminary review of unit 2 work items indicates that the outage duration will be far in excess of the scheduled 120 days. Formal authorization to reschedule several Nuclear Regulatory Commission (NRC)-related modifications is urgently needed. Although unit 2 may shut down as early as September 5, the refueling outage start date is scheduled for September 14 after peak.

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

JUL 11 1984

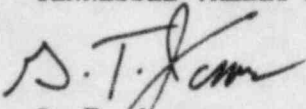
Nuclear Regulatory Commission
Office of Management Information
and Program Control
Washington, DC 20555

Gentlemen:

Enclosed is the June 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
Plant Manager

Enclosures

cc: Director, Region II
Nuclear Regulatory Commission
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