

TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER PRODUCTION
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT
April 1, 1981 - April 30, 1981

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

Submitted By:

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Plant Superintendent

8105150335

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Operations Summary

April 1981

The following summary describes the significant operational 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 six revisions to previous reportable occurrences reported to the NRC during the month of April.

Unit 1

There was one scram on the unit during the month. On April 11, the reactor was manually scrammed for the EOC-4 refueling outage.

Unit 2

There were no scrams on the unit during the month.

Unit 3

There were two scrams on the unit during the month. On April 4, the reactor scrammed from a low vacuum turbine trip caused when power was restored to the bus for the 250V DC turbine trip after maintenance to locate and remove a low resistance positive side ground in the circuitry. The reactor scrammed on April 23, from a MSIV closure when a transfer of start busses caused a short interruption of plant preferred and non-preferred power resulting in recirculation pump swing (the MG set scoop tubes failed to lock) which produced a low water level in the reactor from the recirculation flow transient.

Operations Summary (Continued)

April 1981

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	0.00503	0.00393	0.00352
Feedwater nozzle	0.24411	0.16963	0.12962
Closure studs	0.19865	0.13694	0.10249

Note: This accumulated monthly information satisfies technical specification section 6.6.A.17.B(3) reporting requirements.

Common System

Approximately $6.21\text{E}+05$ gallons of waste liquid were discharged containing approximately $6.90\text{E}-01$ curies of activities.

Operations Summary (Continued)

April 1981

Unit 1

Unit 1 began its EOC-4 refueling outage on April 11, with a scheduled restart date of August 2, 1981. This refueling will involve loading additional 8 X 8 R (retrofit) fuel assemblies into the core, the final fix on the sparger modification, power supply on LPCI modification, generator breaker and unit station transformer tie-in (requires Unit 2 to be shutdown), and torus modifications if all approvals are received.

There are 46 fuel assemblies in the reactor vessel. The spent fuel storage pool presently contains 718 EOC-4 fuel assemblies, 550 spent 7 X 7 fuel assemblies, five 8 X 8 spent fuel assemblies, 260 new 8 X 8 R fuel assemblies, and one spent 8 X 8 R fuel assembly. Because of modification work to increase spent fuel pool capacity to 3471 assemblies, present available capacity is limited to 430 locations.

Unit 2

Unit 2 is scheduled for its fourth refueling beginning on or about March 26, 1982, with a scheduled restart date of August 13, 1982. This refueling outage will involve completing relief valve modifications, torus modifications if all approvals are received, "A" low pressure turbine inspection, MG set installation for LPCI modification, and loading additional 8 X 8 R fuel assemblies into the core.

There are 764 fuel assemblies in the reactor vessel. At the end of the month, there were 132 discharged cycle 1 fuel assemblies, 156 discharged cycle 2 fuel assemblies, and 352 discharged cycle 3 fuel assemblies in the spent fuel

Operations Summary (Continued)

April 1981

Unit 2 (Continued)

storage pool. The present available capacity of the spent fuel pool is 160 storage locations. With present capacity, the 1979 refueling was the last refueling that could be discharged to the spent fuel pool without exceeding that capacity and maintaining full core discharge capability in the pool. However, 949 new high density storage locations have been installed, but cannot be used until Special Test 161 is completed.

Unit 3

Unit 3 is scheduled for its fourth refueling beginning on or about September 25, 1981, with a scheduled restart date of February 7, 1982. This refueling involves loading additional 8 X 8 R (retrofit) assemblies into the core, relief valve modification, turbine inspection, generator breaker and unit station transformer tie-in, and torus modifications if all approvals are received.

There are 764 fuel assemblies presently in the reactor vessel. There are 124 discharged cycle 3 fuel assemblies, 144 discharged cycle 2 fuel assemblies, and 208 discharged cycle 1 fuel assemblies in the spent fuel storage pool. The present available storage capacity of the spent fuel pool is 1052 locations.

Significant Operational Events

Unit 1

Date	Time	Event
4/01/81	0001	Reactor thermal power at 97%, maximum flow, EOC-4 coastdown (all rods out).
	1500	Reactor thermal power at 96%, maximum flow, EOC-4 coastdown.
4/04/81	0050	Commenced reducing thermal power for turbine control valve tests and SI's.
	0100	Reactor thermal power at 89%, holding for turbine control valve tests and SI's.
	0115	Turbine control valve tests and SI's completed, commenced power ascension.
	0400	Reactor thermal power at 96%, maximum flow, EOC-4 coastdown.
4/06/81	2300	Reactor thermal power at 95%, maximum flow, EOC-4 coastdown.
4/09/81	2300	Reactor thermal power at 94%, maximum flow, EOC-4 coastdown.
4/10/81	2120	Commenced reducing thermal power for shutdown to accommodate EOC-4 refueling outage.
4/11/81	0049	Reactor manual Scram No. 141 from 41% thermal power, to accommodate EOC-4 refuel outage.
4/18/81	1648	Began fuel unloading from RRV.
4/30/81	2400	End-of-cycle 4 refueling outage in progress.

Significant Operational Events

Unit 2

Date	Time	Event
4/01/81	0001	Reactor thermal power at 99%, maximum flow, rod limited.
4/03/81	2134	Reduced thermal power to 82% for MSIV and turbine control valve tests and SI's.
	2303	MSIV test, turbine control valve tests and SI's completed, commenced power ascension.
4/04/81	0001	Commenced PCIOMR from 96% thermal power (sequence "B").
	0100	Reactor thermal power at 99%, maximum flow, rod limited.
	2115	Reduced thermal power to 82% for MSIV tests.
	2130	MSIV tests complete, commenced power ascension.
	2200	Commenced PCIOMR from 96% thermal power.
	2300	Reactor thermal power at 99%, maximum flow, rod limited.
4/07/81	2030	Started reducing thermal power for MSIV tests.
	2100	Reactor thermal power at 81%, holding for MSIV tests.
	2115	MSIV tests complete, commenced power ascension.
	2300	Commenced PCIOMR from 98% thermal power.
	2400	Reactor thermal power at 99%, maximum flow, rod limited.
4/09/81	0030	Received a fuse failure alarm, primary containment isolation and refuel zone isolation, started putting station air into drywell.
	0345	Commenced reducing thermal power for shutdown due to primary containment and refuel zone isolation.
	0445	Reactor thermal power at 89%, all isolated systems are back in service.
	0448	Commenced power ascension from 89% thermal power.
	0500	Station air isolated to drywell
	0700	Reactor thermal power at 99%, maximum flow, rod limited.
	2012	Commenced reducing thermal power for MSIV tests.
	2100	Reactor thermal power at 96%, MSIV tests in progress.
	2130	MSIV tests completed, commenced power ascension.
	2140	Commenced PCIOMR from 98% thermal power.
	2300	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Events

Unit 2

Date	Time	Event
4/10/81	1656	Reduced thermal power to 70% due to a high water level alarm in the CRD west header.
	1710	High water level alarm cleared after 1 minute and 58 seconds, commenced power ascension.
	1755	Commenced PCIOMR from 96% thermal power.
	2300	Reactor thermal power at 99%, maximum flow, rod limited.
	2340	Commenced reducing thermal power for turbine control valve tests and SI's.
4/11/81	0010	Reactor thermal power at 73%, holding for turbine control valve tests and SI's.
	0115	Turbine control valve tests and SI's complete, commenced power ascension.
	0630	Commenced PCIOMR from 96% thermal power.
	0800	Reactor thermal power at 99%, maximum flow, rod limited.
4/14/81	2150	Commenced reducing thermal power for MSIV tests.
	2212	Reactor thermal power at 82%, holding for MSIV tests.
	2214	MSIV tests complete, commenced power ascension.
	2300	Reactor thermal power at 99%, maximum flow, rod limited.
4/17/81	2130	Commenced reducing thermal power for MSIV tests.
	2155	Reactor thermal power at 82%, holding for MSIV tests.
	2244	MSIV test complete, commenced reducing thermal power for control rod pattern adjustment.
	2300	Reactor thermal power at 44%, holding for control rod pattern adjustment.
4/18/81	0135	Control rod pattern adjustments complete, holding for SI's.
	0315	SI's complete, commenced power ascension.
	0755	Commenced PCIOMR from 58% thermal power.
4/19/81	1130	Reduced thermal power from 83% to 75% for turbine control valve tests.
	1155	Turbine control valve tests complete, commenced PCIOMR.
4/20/81	2300	Reactor thermal power at 99%, maximum flow, rod limited.
4/24/81	2140	Reduced thermal power to 90% for turbine control valve tests and MSIV tests.
	2315	Turbine control valve and MSIV tests complete, commenced power ascension.
4/25/81	0300	Commenced PCIOMR from 96% thermal power.
	0700	Reactor thermal power at 99%, maximum flow, rod limited.
	2125	Reduced thermal power to 90% for MSIV tests.
	2140	MSIV tests complete, commenced power ascension.
	2300	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Events

Unit 2

Date	Time	Event
4/27/81	2200	Reduced thermal power to 90% for MSIV tests.
	2220	MSIV tests complete, commenced power ascension.
	2300	Reactor thermal power at 99%, maximum flow, rod limited.
4/30/81	2400	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Events

Unit 3

Date	Time	Event
4/01/81	0001	Reactor thermal power at 99%, maximum flow, rod limited.
4/02/81	1515	Lost "B" SJAE, vacuum decreasing, commenced reducing thermal power.
	1525	Reactor thermal power at 50%, holding, vacuum increasing "B" SJAE being returned to service.
	1543	Commenced power ascension from 50% thermal power.
	2230	Commenced PCIOMR from 94% thermal power, (control cell core).
4/03/81	0430	Reactor thermal power at 99%, maximum flow, rod limited.
4/04/81	0001	Commenced reducing thermal power for turbine control valve tests and SI's.
	0100	Reactor thermal power at 89%, holding for turbine control valve tests and SI's.
	0222	Turbine control valve tests and SI's complete, commenced power ascension.
	0330	Commenced PCIOMR from 96% thermal power.
	0735	Reactor thermal power at 99%, maximum flow, rod limited.
	1251	Reactor Scram No. 95 ⁽²⁾ from 99% thermal power while performing tests to locate a 250V DC ground fault. The low vacuum turbine trip relay K2D18 operated when the 250V bus was re-energized causing a low vacuum turbine trip.
	1808	Commenced rod withdrawal for startup.
	2034	Reactor Critical No. 107.
4/05/81	0845	Synchronized generator, commenced power ascension.
	1500	Commenced PCIOMR from 72% thermal power.
4/06/81	1830	Reactor thermal power at 99%, maximum flow, rod limited.
4/08/81	2130	Commenced reducing thermal power for control rod pattern adjustment.
	2130	Reactor thermal power at 73%, control rod pattern adjustment in progress.
	2200	Control rod pattern adjustment complete, commenced power ascension.
	2230	Commenced PCIOMR from 91% thermal power.
4/09/81	0326	Reduced thermal power from 94% to 92% to maintain margin to core limits - xenon transients.
	0400	TIP run complete, commenced PCIOMR.
	0816	Stopped PCIOMR due to Xenon transient, reactor power at 98%.
	1300	Commenced PCIOMR from 98% thermal power.

Significant Operational Events

Unit 3

Date	Time	Event
4/09/81	1400	Reactor thermal power at 99%, maximum flow, rod limited.
	1509	Reduced reactor thermal power to 97% due to 1/2 isolation (MSL "A" low pressure).
	1950	Commenced power ascension from 97% thermal power.
	2300	Reactor thermal power at 99%, maximum flow, rod limited.
4/12/81	0126	Commenced reducing thermal power for turbine control valve tests and SI's.
	0138	Reactor thermal power at 88%, holding for turbine control valve tests and SI's.
	0145	Turbine control valve tests and SI's complete, commenced power ascension.
	0255	Commenced PCIOMR from 95% thermal power.
	0700	Reactor thermal power at 99%, maximum flow, rod limited.
4/14/81	0825	Reduced thermal power to 98% to maintain margin to core limits.
	1510	TIP run complete, commenced power ascension.
	1535	Reactor thermal power at 99%, maximum flow, rod limited.
4/15/81	0716	Reduced reactor thermal power to 98% due to CMFLPD.
	0730	Reduced reactor thermal power to 97% due to CMFLPD.
	0800	Commenced power ascension from 97% thermal power.
	0900	Reactor thermal power at 99%, maximum flow, rod limited.
4/16/81	0900	Reactor thermal power at >99%, maximum flow, rod limited.
4/17/81	0615	Commenced reducing thermal power due to erratic behavior of 3C RFW pump.
	1000	Reactor thermal power at 89%, holding for maintenance on 3C RFW pump (change out of function generator).
	1342	Maintenance complete on 3C RFW pump, commenced power ascension.
	1430	Commenced PCIOMR from 96% thermal power.
	1730	Reactor thermal power at 99%, maximum flow, rod limited.
4/18/81	0035	Mechanical trip valve lock out alarm did not annunciate when test button was pushed.
	0305	Reduced thermal power to 90% to replace relay XK55 (oil trip overspeed).
	0315	Relay XK55 replaced, holding at 90% for CRD exercise.
	0435	CRD exercise complete, commenced PCIOMR.
	0700	Reactor thermal power at 99%, maximum flow, rod limited.
	2200	Commenced reducing thermal power for control rod scram time testing.
	2300	Reactor thermal power at 46%, control rod scram time testing in progress.

Significant Operational Events

Unit 3

Date	Time	Event
4/19/81	0230	Control rod scram time testing complete, commenced power ascension.
	1200	Commenced PCIOMR from 82% thermal power.
4/20/81	1500	Reactor thermal power at 99%, maximum flow, rod limited.
4/23/81	0531	Reactor Scram No. 96 ⁽¹⁾ from 99% thermal power, when a transfer of start busses caused a short interruption of plant preferred and non-preferred power, which resulted in recirculation pumps runback and a scoop tube failure to lock. After reactor feedpumps backed down the recirculation pumps increased, resulting in a low water level scram.
	0940	The unit remains out of service for testing of the scram discharge volume level monitoring system, ST-190, required by NRC Bulletin 80-17.
	1845	ST 190 complete, commenced rod withdrawal for startup.
	2127	Reactor Critical No. 108.
4/24/81	0150	Rolled T/G.
	0217	Synchronized generator, commenced power ascension.
	0245	Reactor thermal power at 23%, holding for IRM calibration.
	0310	IRM calibration complete, commenced power ascension.
	1030	Commenced PCIOMR from 79% thermal power.
4/25/81	0230	Reactor thermal power at 99%, maximum flow, rod limited.
	0500	Reactor thermal power at 98%, maximum flow, rod limited.
	0600	Reactor thermal power at 97%, maximum flow, rod limited.
	0700	Reactor thermal power at 96%, maximum flow, rod limited.
	0900	Reactor thermal power at 95%, maximum flow, rod limited.
	1100	Reactor thermal power at 94%, maximum flow, rod limited.
4/25/81	1400	Reactor thermal power at 93%, maximum flow, rod limited.
	1438	Commenced reducing thermal power due to high river ΔT .
	1500	Reactor thermal power at 74%, holding due to high river ΔT .
	1530	Commenced power ascension from 74% thermal power.
	1610	Reactor thermal power at 91%, maximum flow, rod limited.
	2150	Commenced reducing thermal power for a control rod pattern adjustment.
	2220	Reactor thermal power at 73%, holding for control rod pattern adjustment.
	2320	Control rod pattern adjustment complete, commenced power ascension.
4/26/81	0430	Commenced PCIOMR from 83% thermal power.
	1722	Reactor thermal power at 99%, maximum flow, rod limited.
4/30/81	2400	Reactor thermal power at 99%, maximum flow, rod limited.

(1) Equipment Malfunction

(2) Equipment Malfunction Maintenance

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
 UNIT Browns Ferry - 1
 DATE May 1, 1981
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

MONTH April 1981

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1021
2	1020
3	1017
4	1012
5	1007
6	1004
7	998
8	1001
9	985
10	952
11	1
12	-9
13	-7
14	-11
15	-7
16	-8

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	-8
18	-7
19	-8
20	-7
21	-7
22	-8
23	-7
24	-8
25	-7
26	-7
27	-7
28	-6
29	-6
30	-6
31	

INSTRUCTIONS

On the first day of the month, daily unit power level is MWe-Net to each day in the month. If output is the nearest whole megawatt.

(10/75)

POOR ORIGINAL

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260
 UNIT Browns Ferry - 2
 DATE 5-1-81
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

MONTH April 1981

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>1061</u>
2	<u>1067</u>
3	<u>1056</u>
4	<u>1061</u>
5	<u>1064</u>
6	<u>1052</u>
7	<u>1050</u>
8	<u>1070</u>
9	<u>1046</u>
10	<u>1066</u>
11	<u>1036</u>
12	<u>1050</u>
13	<u>1049</u>
14	<u>1043</u>
15	<u>1044</u>
16	<u>1057</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>1013</u>
18	<u>677</u>
19	<u>901</u>
20	<u>1029</u>
21	<u>1053</u>
22	<u>1053</u>
23	<u>1050</u>
24	<u>1048</u>
25	<u>1051</u>
26	<u>1007</u>
27	<u>1054</u>
28	<u>1052</u>
29	<u>1045</u>
30	<u>1044</u>
31	<u></u>

INSTRUCTIONS

The following instructions apply to the data reported on this form. The data should be reported on a daily basis, and the data should be reported on a daily basis. The data should be reported on a daily basis, and the data should be reported on a daily basis.

00774

POOR ORIGINAL

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-296
 UNIT Browns Ferry -3
 DATE 5-1-81
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

MONTH April 1981

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>1070</u>
2	<u>1033</u>
3	<u>1069</u>
4	<u>552</u>
5	<u>438</u>
6	<u>994</u>
7	<u>1056</u>
8	<u>1057</u>
9	<u>1027</u>
10	<u>1084</u>
11	<u>1065</u>
12	<u>1048</u>
13	<u>1057</u>
14	<u>1046</u>
15	<u>1048</u>
16	<u>1067</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>1027</u>
18	<u>1027</u>
19	<u>863</u>
20	<u>990</u>
21	<u>1058</u>
22	<u>1064</u>
23	<u>230</u>
24	<u>779</u>
25	<u>979</u>
26	<u>973</u>
27	<u>1061</u>
28	<u>1063</u>
29	<u>1062</u>
30	<u>1064</u>
31	<u></u>

INSTRUCTIONS

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

1-11773

POOR ORIGINAL

OPERATING DATA REPORT

DOCKET NO. 50-259
 DATE 5-1-81
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 1
 2. Reporting Period: April 1981
 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:
NA

Notes

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

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>719</u>	<u>2,879</u>	<u>59,161</u>
12. Number Of Hours Reactor Was Critical	<u>240.82</u>	<u>2,384.4</u>	<u>37,190.97</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>16.42</u>	<u>5,115.29</u>
14. Hours Generator On-Line	<u>240.82</u>	<u>2,380.77</u>	<u>36,373.59</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWh)	<u>745,157</u>	<u>7,425,495</u>	<u>100,717,356</u>
17. Gross Electrical Energy Generated (MWh)	<u>247,330</u>	<u>2,474,200</u>	<u>33,237,490</u>
18. Net Electrical Energy Generated (MWh)	<u>236,651</u>	<u>2,407,849</u>	<u>32,271,666</u>
19. Unit Service Factor	<u>33.5</u>	<u>82.7</u>	<u>61.5</u>
20. Unit Availability Factor	<u>33.5</u>	<u>82.7</u>	<u>61.5</u>
21. Unit Capacity Factor (Using MDC Net)	<u>30.9</u>	<u>78.5</u>	<u>51.2</u>
22. Unit Capacity Factor (Using DFR Net)	<u>30.9</u>	<u>78.5</u>	<u>51.2</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>0.8</u>	<u>28.0</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: July 28, 1981

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. 50-260
 DATE 5-1-81
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: <u>Browns Ferry - 2</u>	Notes
2. Reporting Period: <u>April 1981</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>NA</u>	
9. Power Level To Which Restricted, If Any (Net MWe): <u>NA</u>	
10. Reasons For Restrictions, If Any: <u>NA</u>	

	This Month	Yr. to-Date	Cumulative
11. Hours In Reporting Period	719	2,879	54,072
12. Number Of Hours Reactor Was Critical	719	2,814.21	33,557.82
13. Reactor Reserve Shutdown Hours	0	64.79	12,518.27
14. Hours Generator On-Line	719	2,759.99	32,500.95
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,281,714	8,514,688	102,085,331
17. Gross Electrical Energy Generated (MWH)	766,430	2,851,140	30,588,328
18. Net Electrical Energy Generated (MWH)	743,362	2,774,422	29,724,729
19. Unit Service Factor	100	95.9	60.1
20. Unit Availability Factor	100	95.9	60.1
21. Unit Capacity Factor (Using MDC Net)	97.1	90.5	51.6
22. Unit Capacity Factor (Using DER Net)	97.1	90.5	51.6
23. Unit Forced Outage Rate	0	4.1	31.1
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each) <u>Maintenance May 1981 (21 days)</u>			

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

OPERATING DATA REPORT

DOCKET NO. 50-296
 DATE 5-1-81
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 3
 2. Reporting Period: April 1981
 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:
NA

Notes

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

	This Month	Yr-to-Date	Cumulative
11. Hours In Reporting Period	719	2,879	36,527
12. Number Of Hours Reactor Was Critical	695.35	2,329.46	28,300.73
13. Reactor Reserve Shutdown Hours	14.57	170.14	1981.03
14. Hours Generator On-Line	678.33	2,252.32	27,642.32
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,154,845	6,643,486	81,008,514
17. Gross Electrical Energy Generated (MWH)	716,280	2,228,230	26,767,260
18. Net Electrical Energy Generated (MWH)	695,377	2,161,044	25,985,367
19. Unit Service Factor	94.3	78.2	75.7
20. Unit Availability Factor	94.3	78.2	75.7
21. Unit Capacity Factor (Using MDC Net)	90.8	70.5	66.8
22. Unit Capacity Factor (Using DER Net)	90.8	70.5	66.8
23. Unit Forced Outage Rate	5.7	8.3	9.6
24. Shutdowns Scheduled Over Next n 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

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH April

SOCKET NO. 50-259
 UNIT NAME Browns Ferry - 1
 DATE May 2, 1981
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

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
172	4-11-81	S	478.18	C	2				EOC-4 Refuel Outage

1
 L - Licensed
 S - Schedule 1

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 (LEER) File (NUREG 0161)

5
 Exhibit I - Same Source

0777

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH April
 DOCKET NO. 50-260
 UNIT NAME Browns Ferry - 2
 DATE May 2, 1981
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

No.	Date	Type ¹	Duration (Units)	Reason ²	Method of Shutting Down Reactor ³	Licenses Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
185	4-10-81	F		D					High water level alarm in CRD west header
186	4-10-81	S		B					Turbine control valve tests and SI's
187	4-17-81	S		H					Control rod pattern adjustment and SI

 1
 F - Forced
 S - Scheduled

 2
 Reason
 A - Equipment Failure (Explain)
 B - Maintenance or Test
 C - Reloading
 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)

 5
 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH AprilJACKET NO. 50-296UNIT NAME Browns Ferry - 3DATE 5-1-81COMPLETED BY Ted ThomTELEPHONE 205-729-6846

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensor Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
69	4/02/81	F		A					"B" steam jet air ejector out of ser.
70	4/04/81	F	19.90	B	3				While testing to find a 250 V ground fault the low vacuum turbine trip relay K2D18 operated at the instant the 250V bus was re-energized causing a low vacuum turbine trip. The reactor scrambled on stop valve closure.
71	4/08/81	S		H					Control rod pattern adjustment.
72	4/18/81	S		B					Control rod scram time testing.

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)

5
Exhibit I - Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH April

SOCKET NO. 50-296
 UNIT NAME Browns Ferry-3 (Cont)
 DATE 5-1-81
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

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
73	4/23/81	F	1.1	D	1				Transfer of start busses caused a short interruption of plant preferred and non-preferred power which resulted in a recirculation pump runback and a scoop tube lock failure. After reactor feed pumps backed down, the recirculation pumps rapidly increased resulting in a low water level scram. The unit remained offline for testing the scram discharge volume level monitoring system (ST-190).
74	4/25/81	F		D					High river ΔT .

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)

⁵ Exhibit I - Same Source

BROWNS FERRY NUCLEAR PLANT UNIT 1 and CommonCSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
4/7/81	RHRSW	D-3 RHRSW pump motor	Motor noise.	None	Bad motor bearings.	Motor noise	The motor was repaired, EMI 33 and 64 performed and motor returned to service. TR #102617
4/10/81	HPCI	HPCI hotwell pump motor.	Hotwell pump would run 10 seconds then trip.	None, HPCI was operable.	Bad pump motor.	Hot well pump inoperable.	Replaced motor, performed EMI 71 and 33 pump operated properly. TR #225598
4/14/81	Fire protection	"B" Fire pump	Motor noise	None	Bad motor bearings.	Motor noise	Replaced bad bearings motor operated properly. TR #220534
4/16/81	Fire protection	Fire alarm panel	Bad battery cell	None	Bad cell	No voltage on battery cell #3	Replaced battery, 3 bank voltage was checked and found to be at proper level. TR #188003
4/21/81	Fire protection	D/C Fire protection panel 25-331	Trouble alarm	None	Breaker tripped in panel 25-331	Interruption of D.C. power to all smoke detectors powered from panel 25-331 and auto-initiation of the preaction sprinkler inoperable.	Reset breaker. TR #191708 LER #BFRO-50-259/8111

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 1981

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
4/9/81	Primary containment isolation	Relay 16AK61A	Replacement of relay coil	The Rx zone ventilation system isolation was bypassed during relay replacement. This resulted in a limiting condition for operation.	Bad relay coil	Reactor building ventilation isolated.	Natural end of coil life. Replaced coil, relay operated properly. TR #208649 LER #BFRO-50-260/8117

BROWNS FERRY NUCLEAR PLANT UNIT 3CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
4/2/81	250 Volt DC system	Level switch 6-150A in moisture separator room	Ground on U-3 250V DC battery	None	LS-150A grounded at internal O-ring leak.	Ground on 250V DC system	Replaced level switch ground cleared. TR #205235
4/2/81	Fire protection	Smoke detector XS-39-28C located in U-3 control room panel 9-4	Detector inadvertently alarms	None	Bad detector	Inadvertent alarms	Replaced smoke detector, performed SI 4.11.C.1 & 5, detector operated properly. TR #205457
4/12/81	RPS MG set 3A	K-4 input trip relay	Scheduled maintenance and testing per EMI 13 section 5.2	None, input trip relay is not critical to RPS operation	Bad K-4 relay	Erratic timing	Replaced relay per EMI 23, timed relay per EMI 15, system operated properly per EMI 13. TR #190186 TR #219393
4/13/81	RSCS	Relay 3AK-49 in panel 9-28	Received a fuse failure alarm.	None	3AK-49 relay coil wire loose.	Fuse failure alarm inoperable.	Tightened loose coil wire, fuse alarm circuit operated properly. TR#223326
4/24/81	RBCCW	"3A" RBCCW pump breaker located in 480V shutdown bd 3A, panel 6B	Breaker tripped while transferring station service.	None	Apparent misadjustment of trip mechanism.	"3A" RBCCW pump inoperable.	Verified trip mechanism checked trip amp, breaker racked in properly, pump returned to service. TR #223331

MECHANICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

For the Month of April 19 81

SHEET 1 OF 2 SHEETS

UNIT 1

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
1-9-81	D/G	IC Air Comp.	Blown Head Gasket	NA	High Pressure	Leaking	Replaced head gasket TR 203080
UNIT 2							
4-18-81	CRD	2A CRD Pump	Change Filters	N/A	Dirty Filters	Unknown	Changed filters TR 225469
UNIT 3							
3-9-81	Fuel Pool Closing	Pump 3B	Motor needs realignment	NA	Out of alignment	Pump Vibrating	Realigned motor to pump & installed rubber rim under each foot of motor TR 136727
4-18-81	Secondary Containment	Door 510	Door giving off false alarm	NA	Latch bolt had a burr on it	False Alarm	Filed off burr & lubricated lock TR 218267
4-18-81	Secondary Containment	Door 651	Hard to open	NA	Unknown	Door wouldn't open	Replaced hinge & adjusted bolt TR 225460
2-24-81	D/G	3/C D/G Air Brake 1	Worn Air Valve	NA	Dirty filter	Unknown	Cleaned filters & replaced air valve TR 219229
2-26-81	D/G	3D	Actuator too high	NA	Unknown	Low Oil Level	Drained oil to proper level TR 219231
1-8-81	Secondary Containment	Reactor side door	Worn foot bolt	NA	Worn foot bolt	Door comes open when not designated	New foot bolt adjusted door closer & weather seal TR 198986

MECHANICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

For the Month of April 1981

SHEET 2 OF 2 SHEETS

UNIT 3

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-7-81	RCIC	FCV-71-6B	Valve blowing steam	NA	Needs new kit in steam trap	Steam leak	Installed new kit in steam trap. TR 223323
4-7-81	RCIC	Valve 71-574	Leak	NA	Unknown	Steam leak	S/A TR 205480
4-21-81	Secondary Containment	Door 648	Closer too slow	NA	Closer out of adjustment	Hold open by air pressure	Adjusted closer TR 218272
4-20-81	Door interlock & alarm	Door 800	Door closing too slow	NA	Slow closing of door	Not enough air pressure	Adjusted air press. TR 218268
4-23-81	HPCI	HCV-73-602	Valve stem broken	NA	Unknown	Unknown	Installed new valve TR 159662
4-22-81	Door interlock & Alarm	Door 654	Will not close	NA	Unknown	Closer needed adjusting	Adjusted closer TR 218083
4-24-81	HPCI	Gland Seal Condensor	Blown Gasket	NA	Pressure	Seal Condensor blown	Changed gaskets TR 190984
4-23-81	HPCI	Gland Seal Condensor	Blown Gasket	NA	Pressure	Unknown	Changed both gaskets TR 190983
<u>COMMON</u>							
3-26-81	RHR Service Water	D3 Pump	Low Flow Rate	NA	Bearing & wear ring worn	Caused low flow rate	Replaced column bushings, wear rings, bottom bushings & top TR 198827

BROWNS FERRY NUCLEAR PLANT UNIT 1, 2, & 3

INSTRUMENT MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF April 19 81

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>Unit 1</u>							
4-28	Neutron Monitoring	APRM-A	Repair	None	Faulty Flow Test Pot.	Power and Flow Signals Did Not Agree	None
4-30	Containment Air Dilution	LI-84-13A	Calibrate	None	Zero Shift	Redundant Indicators Did Not Agree	None
<u>Unit 2</u>							
4-1	Primary Containment	Pdc-54-61A,C	Calibrate	None	Setpoint Drift	Isolation Would Not Reset	None
4-6	Residual Heat Removal	FT-74-56	Repair	None	Faulty Amplifier	Indicator Shifted Off Zero	None
4-29	Control Rod Drive	PT-85-68	Replace	None	Gauge Damaged	Indicated Low Pressure (Local)	None
<u>Unit 3</u>							
4-6	Reactor Feedwater	TIS-63-2	Replace	None	Faulty Switch	Switch Would Not Reset	None
4-8	Reactor Feedwater	LI-3-46A,B	Repair	None	Dirty Bearings, Zero Drift	Readings Did Not Agree	None
4-23	Feedwater Control	FM-46-5C	Repair	None	Faulty Circuit Component	Feedwater Flow Erratic	None

OUTAGE SUMMARY

April 1981

Preparation for the unit 1 cycle 4 refueling outage continued through reactor shutdown which occurred April 11th, at 0049 hours. Initially the critical path work to completion of the outage was reactor pressure vessel disassembly through reactor cavity floodup for fuel unloading. This work was completed approximately one day behind schedule. The current critical path is the torus and related modification work. At the close of this report period torus modification work had progressed through the installation of the temporary ventilation system, sandblasting internal surfaces - approximately 20% complete, placement of the first ring girder reinforcement for welding on external surfaces and start of welding of cradle extensions. At present only 19 of 35 modifications scheduled to be performed on the torus have final drawings issued. The lack of drawings has severely restricted the ability to plan work, order material and establish tooling requirements. Other major work in progress includes:

1. P0214 - generator breaker modification.
2. P0275 - unit 2 station service transformer.
3. P0262 - union cordova line addition.
4. Unit 1 fuel unloading in preparation for feedwater sparger modification in-vessel.
5. Eddy current testing of selected heat exchanger tubes.
6. Turbo-generator disassembly, inspection and refurbishment.
7. Preparations for unit 2 short outage beginning May 15, 1981.

OUTAGE SUMMARY (Continued)

April 1981

Fuel Sipping Equipment Preparations

Fuel sipping equipment is due to arrive on May 7. Actual fuel sipping is due to begin on May 11, and is expected to be completed by May 25.

Unit 1 "B2" CCW/Inlet Expansion Joint Corrosion Pitting

Signs of mild pitting corrosion were discovered on the interior surface of the inlet expansion joint to 1B2 waterbox. A note of this condition was made and followup inspections will be scheduled for future refueling outages. The remaining expansion joints will be inspected and repaired as necessary.

The scheduled outage duration at this time is 108 days for an expected return to service date of July 28, 1981.