

TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER PRODUCTION
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT
August 1, 1981 - august 31, 1981

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

Submitted By: _____

[Signature]
Plant Superintendent

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Operations Summary

August 1981

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

There were 9 reportable occurrences and three revisions to previous reportable occurrences reported to the NRC during the month of August.

Unit 1

Unit 1 was in its EOC-4 refueling outage the entire month.

Unit 2

There were two scrams on the unit during the month. On August 1, the reactor was manually scrammed after an attempt to place the unit on line resulted in turbine-generator load rejection. The spare main transformer had been incorrectly connected during recent transformer maintenance following trouble with the 2A main transformer. The reactor scrammed on August 23, during the performance of a surveillance instruction when an APRM was placed into the standby condition (half-scam) while another APRM had been inadvertently left in the standby condition when a faulty knob on the selector switch slipped as the operator was attempting to return the APRM to the operate position.

Unit 3

There were three scrams on the unit during the month. On August 12, the reactor was manually scrammed in order to permit a drywell entry to investigate a low oil level alarm on the 3A recirculation pump. The reactor scrammed on August 22 during the performance of a surveillance instruction when a MSIV's not fully open signal was received and an extraneous signal from a MSL high temperature channel was received while another MSL high temperature channel was in

Operations Summary (Continued)

August 1981

test. On August 30, the reactor scrambled from a load unbalance and generator trip caused when the 500kV Davidson line was lost while the 500kV Cordova line was out due to a faulty relay operation.

Operations Summary (Continued)

August 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	0.00416	0.00359
Feedwater nozzle	0.24411	0.17784	0.13936
Closure Studs	0.19865	0.14126	0.10649

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

Common System

Approximately 1.36E+06 gallons of waste liquid were discharged containing approximately 1.83E+00 curies of activities.

Operations Summary (Continued)

August 1981

Refueling InformationUnit 1

Unit 1 began its EOC-4 refueling outage on April 11, with a scheduled restart date of September 19, 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.

There are 764 fuel assemblies in the reactor vessel. The spent fuel storage pool presently contains 260 EOC-4 fuel assemblies, 550 spent 7 X 7 fuel assemblies, five spent 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 1148 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, "A" low pressure turbine inspection, MG set installation for LPCI modification, and loading additional 8 X 8 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 storage

Operations Summary

August 1981

Refueling Information (Continued)Unit 2 (Continued)

pool. The present available storage capacity of the spent fuel pool is 160 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.

Unit 3

Unit 3 is scheduled for its fourth refueling beginning on or about October 16, 1981, with a scheduled restart date of February 13, 1982. This refueling involves loading additional 8 X 8 R (retrofit) assemblies into the core, relief valve modification, turbine inspections, generator breaker and unit station transformer tie-in, and torus modifications.

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
8/01/81	0001	End of cycle 4 refuel outage continues.
8/11/81	1840	Fuel reload complete.
8/31/81	2400	End of cycle 4 refuel outage continues.

Significant Operational Events

Unit 2

Date	Time	Event
8/01/81	0001	Reactor thermal power at 14%, holding unit off line due to transformer problems.
	2018	Reactor scram manual No. 124 from 14% thermal power after a turbine generator load rejection from "2A" and "2B" main transformer differential relay operation on July 31 at 2216 hours, as it was being tied on line. The spare main transformer had been incorrectly connected during recent transformer maintenance following trouble with the "2A" main transformer.
8/15/81	1940	Commenced rod withdrawal for startup.
	2102	Reactor Critical No. 137, holding for completion of transformer replacement.
8/16/81	2300	Reactor thermal power at 9%, holding for transformer wiring inspection during daylight hours.
8/17/81	1000	Rolled T/G.
	1044	Tripped turbine (exciter brush replacement).
	1100	Rolled T/G.
	1129	Synchronized generator, commenced power ascension.
8/18/81	1330	Commenced PCIOMR from 60% thermal power (sequence "B").
8/20/81	0100	Reactor thermal power at 97%, maximum flow, rod limited.
	0700	Reactor thermal power at 95%, maximum flow, rod limited.
	1500	Reactor thermal power at 93%, maximum flow, rod limited.
8/21/81	0016	Reduced thermal power from 93% to 81% due to recirculation pumps running back when 480V shutdown board "2B" was transferred.
	0035	Commenced power ascension.
	0222	Commenced PCIOMR from 92% thermal power (sequence "B").
	0320	Reactor thermal power at 94%, maximum flow, rod limited.
8/23/81	0010	Reduced thermal power to 85% for turbine control valve tests and SI's.
	0201	Reactor Scram No. 125 ⁽²⁾ from 85% thermal power while performing SI 4.2.C.1.A, E-APRM switch was in wrong position - 1/2 scram when removed from bypass while performing 1/2 scram on F-APRM.
	0540	Commenced rod withdrawal for startup.
	0708	Reactor Critical No. 138.
	1306	Rolled T/G.
	1324	Oil tripped turbine.
	1340	Synchronized generator.
	1352	Tripped turbine from 8% thermal power due to inability to hold condenser vacuum when gland steam packing on exhaust fan motors failed.

Significant Operational Events

Unit 2

Date	Time	Event
8/23/81	2400	Rolled T/G.
8/24/81	0034	Synchronized generator, commenced power ascension.
	0630	Commenced PCIOMR from 70% thermal power (sequence "B").
	2200	Reactor thermal power at 77%, maximum flow, rod limited.
8/25/81	0400	Reduced reactor thermal power to 64% for control rod pattern adjustment.
	0700	Control rod pattern adjustment completed, commenced PCIOMR (sequence "B").
	2045	Stopped PCIOMR at 80% thermal power, computer out of service.
8/26/81	0001	Computer back in service, commenced power ascension.
	0700	Reactor thermal power at 84%, holding, computer out of service.
	1415	Commenced reducing thermal power to repair strainer on "2C" RFWP.
	1425	Reactor thermal power at 74%, holding for repairs to "2C" RFWP.
	2110	"2C" RFWP in service, commenced power ascension.
8/27/81	0140	Commenced PCIOMR from 77% thermal power (sequence "B").
	1745	Reactor thermal power at 99%, maximum flow, rod limited.
	1828	Commenced reducing thermal power to maintain back-pressure when removing "2B" CCW pump from service for cooling tower operation.
	1915	"2B" CCW pump out of service, reactor thermal power at 94%.
	2145	"2B" CCW pump back in service, commenced power ascension.
8/28/81	0700	Reactor thermal power at 99%, maximum flow, rod limited.
	1045	Reduced reactor thermal power to 91% thermal power due to run back of both recirculation pumps while performing SI 4.9.A.1.b diesel generator emergency load acceptance test.
	1049	Reset runback, commenced power ascension.
	1300	Reactor thermal power at 98%, maximum flow, rod limited.
	2250	Commenced reducing thermal power for turbine control valve tests and SI's.
	2330	Reactor thermal power at 85%, holding for turbine control valve tests and SI's.
8/29/81	0010	Turbine control valve tests and SI's completed, commenced power ascension.
	0700	Reactor thermal power at 97%, maximum flow, rod limited.

Significant Operational Events

Unit 2

Date	Time	Event
8/30/81	1445	Commenced reducing thermal power due to "C" phase transformer high temperature (cooling problems).
	1515	Reactor thermal power at 92%, holding due to transformer high temperature.
	1645	Transformer problems resolved, commenced power ascension.
	1715	Reactor thermal power at 97%, maximum flow, rod limited.
8/31/81	0700	Reactor thermal power at 96%, maximum flow, rod limited.
	2400	Reactor thermal power at 96%, maximum flow, rod limited.

Significant Operational Events

Unit 3

Date	Time	Event
8/01/81	0001	Reactor in cold shutdown for maintenance on torus H ₂ O ₂ sample valve.
	1825	Maintenance complete on H ₂ O ₂ sample valve, commenced rod withdrawal for startup.
	2048	Reactor Critical No. 113.
8/02/81	0700	Reactor thermal power at 7%, holding unit off line for maintenance on FCV-71-3.
	2056	Maintenance complete on FCV-71-3, rolled T/G.
	2135	Synchronized generator, commenced power ascension.
8/03/81	1230	Commenced PCIOMR from 86% thermal power (control cell core).
8/04/81	0700	Reactor thermal power at 95%, holding due to "A" string high pressure heaters out of service.
	1000	Commenced reducing thermal power due to "A" string high pressure heaters out of service.
	1830	"A" string high pressure heaters back in service, commenced power ascension from 90% thermal power.
	2300	Reactor thermal power at 94%, maximum flow, rod limited.
8/06/81	0015	Commenced reducing thermal power for control rod pattern adjustment.
	0100	Reactor thermal power at 70%, control rod pattern adjustment in progress.
	0300	Control rod pattern adjustment complete, commenced PCIOMR (control cell core).
8/07/81	0700	Reactor thermal power at 99%, maximum flow, rod limited.
8/08/81	0115	Reduce thermal power to 89% for turbine control valve tests and SI's.
	0126	Turbine control valve tests and SI's complete, commenced power ascension.
	0430	Reactor thermal power at 99%, maximum flow, rod limited.
	2352	Reduced thermal power to 95% for SI 4.3.A-2 (control rod exercise).
8/09/81	0030	Control rod exercise complete, commenced power ascension.
	0230	Reactor thermal power at 99%, maximum flow, rod limited.
8/11/81	2230	Commenced reducing thermal power for shutdown for investigation of 3A recirculation pump low oil level.

Significant Operational Events

Unit 3

Date	Time	Event
8/12/81	0131	Reactor Scram Manual Scram No. 101 from 35% thermal power to investigate low level in upper bearing oil reservoir on 3A recirculation pump (replaced leaking thermocouple in upper bearing).
8/13/81	2258	Maintenance on "3A" recirculation pump complete, commenced rod withdrawal for startup.
	2358	Reactor Critical No. 114.
8/14/81	0902	Rolled T/G.
	0935	Synchronized generator, commenced power ascension.
8/15/81	1300	Commenced PCIOMR from 70% thermal power (control cell core).
8/16/81	0305	Reactor thermal power at 96%, maximum flow, rod limited.
	1530	Reactor thermal power at 93%, maximum flow, rod limited.
	2300	Reactor thermal power at 92%, control rod pattern adjustment in progress.
8/17/81	0010	Control rod pattern adjustment complete, commenced power ascension.
	1100	Reactor thermal power at 99%, maximum flow, rod limited.
	2300	Reactor thermal power at 97%, maximum flow, rod limited.
8/18/81	0700	Reactor thermal power at 97%, control rod pattern adjustment in progress.
	1000	Control rod pattern adjustment complete, commenced power ascension.
	1500	Reactor thermal power at 99%, maximum flow, rod limited.
8/20/81	0700	Reactor thermal power at 98%, maximum flow, rod limited.
8/21/81	2352	Commenced reducing thermal power for turbine control valve tests and SI's.
8/22/81	0026	Reactor thermal power at 85%, holding for turbine control valve tests and SI's.
	0124	Reactor Scram No. 102 ⁽²⁾ from 85% thermal power while performing SI 4.2.A.8 main steam line high temperature. An extraneous signal from channel "D" resulted in the MSIV's going closed.
	1200	Commenced rod withdrawal for startup.

Significant Operational Events

Unit 3

Date	Time	Event
8/22/81	1530	Stopped withdrawing control rods, computer out of service.
	1546	Commenced rod withdrawal for startup.
	1602	Reactor Critical No. 115.
	1833	Rolled T/G.
	1845	Oil tripped turbine.
	1853	Synchronized generator, commenced power ascension.
8/23/81	0400	Commenced PCIOMR from 73% thermal power (control cell core).
8/24/81	1130	Reactor thermal power at 94%, maximum flow, rod limited.
8/25/81	0110	Commenced reducing thermal power for control rod pattern adjustment.
	0120	Reactor thermal power at 79%, holding for control rod pattern adjustment.
8/25/81	0140	Control rod pattern adjustment complete, commenced power ascension.
	0330	Commenced PCIOMR from 82% thermal power (control cell core).
	2300	Reactor thermal power at 99%, maximum flow, rod limited.
8/27/81	1620	Reduced thermal power to 88% to maintain back-pressure when removing "3C" CCW pump from service during cooling tower operation.
	2140	Unit removed from cooling towers, placed in open mode, reactor thermal power at 88%.
	2148	Place "3C" CCW pump in service, commenced power ascension.
	2330	Commenced PCIOMR from 96% thermal power (control cell core).
8/28/81	0230	Reactor thermal power at 99%, maximum flow, rod limited.
8/29/81	0100	Commenced reducing thermal power for turbine control valve tests and SI's.
	0120	Reactor thermal power at 85%, holding for turbine control valve tests and SI's.
	0150	Turbine control valve tests and SI's complete, commenced power ascension.
8/29/81	0500	Reactor thermal power at 97%, maximum flow, rod limited.
	1250	Commenced reducing thermal power due to high condenser backpressure.

Significant Operational Events

Unit 3

Date	Time	Event
8/29/81	1320	Back pressure improving, commenced power ascension from 92% thermal power.
	2000	Reactor thermal power at 97%, maximum flow, rod limited.
	2205	Commenced reducing thermal power for ST-185 RFWP test.
	2230	Reactor thermal power at 85%, holding for ST-185 RFWP test.
8/30/81	0050	Commenced power ascension from 85% thermal power. ST-185 in progress.
	0115	Reactor thermal power at 95%, ST-185 in progress.
	0205	ST-185 completed, commenced power ascension.
	1349	Reactor Scram No. 103 ⁽¹⁾ from 97% when faulty relay caused a loss of the Cordova line. When relay reset was attempted, the Davidson line was lost with subsequent load unbalance and generator trip.
	1917	Commenced rod withdrawal for startup.
	2241	Reactor Critical No. 116.
8/31/81	0230	Rolled T/G.
	0324	Synchronized generator, commenced power ascension.
	1230	Commenced PCIOMR from 85% thermal power (control cell core).
	2400	Reactor thermal power at 93%, PCIOMR in progress.

(1) Maintenance Error

(2) Equipment Malfunction

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
 UNIT Browns Ferry - 1
 DATE 9-1-81
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

MONTH August

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>-7</u>	17	<u>-6</u>
2	<u>-6</u>	18	<u>-8</u>
3	<u>-6</u>	19	<u>-10</u>
4	<u>-6</u>	20	<u>-12</u>
5	<u>-6</u>	21	<u>-11</u>
6	<u>-7</u>	22	<u>-13</u>
7	<u>-8</u>	23	<u>-13</u>
8	<u>-9</u>	24	<u>-12</u>
9	<u>-9</u>	25	<u>-12</u>
10	<u>-9</u>	26	<u>-13</u>
11	<u>-9</u>	27	<u>-13</u>
12	<u>-9</u>	28	<u>-15</u>
13	<u>-10</u>	29	<u>-12</u>
14	<u>-9</u>	30	<u>-15</u>
15	<u>-5</u>	31	<u>-13</u>
16	<u>-6</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. 50-260
 UNIT Browns Ferry - 2
 DATE 9-1-81
 COMPLETED BY T. Thom
 TELEPHONE 205-729-6846

MONTH August

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>-16</u>	17	<u>214</u>
2	<u>-15</u>	18	<u>631</u>
3	<u>-15</u>	19	<u>918</u>
4	<u>-14</u>	20	<u>997</u>
5	<u>-14</u>	21	<u>986</u>
6	<u>-12</u>	22	<u>980</u>
7	<u>-10</u>	23	<u>68</u>
8	<u>-10</u>	24	<u>679</u>
9	<u>-10</u>	25	<u>756</u>
10	<u>-10</u>	26	<u>831</u>
11	<u>-10</u>	27	<u>957</u>
12	<u>-10</u>	28	<u>1029</u>
13	<u>-12</u>	29	<u>1021</u>
14	<u>-13</u>	30	<u>1015</u>
15	<u>-14</u>	31	<u>1028</u>
16	<u>-15</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. 50-296
 UNIT Browns Ferry - 3
 DATE 9-1-81
 COMPLETED BY T. Thom
 TELEPHONE 205-729-6846

MONTH August

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>-14</u>
2	<u>17</u>
3	<u>800</u>
4	<u>976</u>
5	<u>969</u>
6	<u>929</u>
7	<u>1038</u>
8	<u>1050</u>
9	<u>1024</u>
10	<u>1043</u>
11	<u>1033</u>
12	<u>18</u>
13	<u>-13</u>
14	<u>369</u>
15	<u>813</u>
16	<u>978</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>1018</u>
18	<u>1038</u>
19	<u>1041</u>
20	<u>1028</u>
21	<u>1029</u>
22	<u>129</u>
23	<u>869</u>
24	<u>959</u>
25	<u>966</u>
26	<u>1063</u>
27	<u>1019</u>
28	<u>1039</u>
29	<u>1010</u>
30	<u>577</u>
31	<u>672</u>

INSTRUCTIONS

On this form, fill in the average daily net power level (MWe-Net) for each day in the reporting period. If a value is not available, enter the nearest whole number.

OPERATING DATA REPORT

DOCKET NO. 50-259
 DATE 9-1-81
 COMPLETED BY Ted Thom
 TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 1
 2. Reporting Period: August 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>744</u>	<u>5831</u>	<u>62,113</u>
12. Number Of Hours Reactor Was Critical	<u>0</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>0</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>0</u>	<u>7,425,495</u>	<u>100,717,856</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>2,474,200</u>	<u>33,237,490</u>
18. Net Electrical Energy Generated (MWH)	<u>0</u>	<u>2,407,849</u>	<u>32,271,666</u>
19. Unit Service Factor	<u>0</u>	<u>40.8</u>	<u>58.6</u>
20. Unit Availability Factor	<u>0</u>	<u>40.8</u>	<u>58.6</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>38.8</u>	<u>48.8</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>38.8</u>	<u>48.8</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: _____
 26. Units In Test Status (Prior to Commercial Operation):

INITIAL CRITICALITY
 INITIAL ELECTRICITY
 COMMERCIAL OPERATION

Forecast	Achieved
_____	_____
_____	_____
_____	_____

OPERATING DATA REPORT

DOCKET NO. 50-260
 DATE 9-1-81
 COMPLETED BY T. Thom
 TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 2
 2. Reporting Period: August 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	744	5831	57,024
12. Number Of Hours Reactor Was Critical	402.15	4,862.68	35,606.29
13. Reactor Reserve Shutdown Hours	341.85	939.95	13,393.43
14. Hours Generator On-Line	326.17	4,620.68	34,361.64
15. Unit Reserve Shutdown Hours	0	0	0 97,689,396
16. Gross Thermal Energy Generated (MWH)	929,335	14,118,753	88,594,662
17. Gross Electrical Energy Generated (MWH)	299,250	4,702,120	32,439,308
18. Net Electrical Energy Generated (MWH)	285,490	4,558,493	31,508,800
19. Unit Service Factor	43.8	79.2	60.3
20. Unit Availability Factor	43.8	79.2	60.3
21. Unit Capacity Factor (Using MDC Net)	36.0	73.4	51.9
22. Unit Capacity Factor (Using DER Net)	36.0	73.4	51.9
23. Unit Forced Outage Rate	56.2	13.3	30.7
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):

INITIAL CRITICALITY
 INITIAL ELECTRICITY
 COMMERCIAL OPERATION

Forecast	Achieved
_____	_____
_____	_____
_____	_____

OPERATING DATA REPORT

DOCKET NO. 50-296
 DATE 9-1-81
 COMPLETED BY T. Thom
 TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 3
 2. Reporting Period: August 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	744	5,831	39,479
12. Number Of Hours Reactor Was Critical	653.25	5,054.96	31,026.23
13. Reactor Reserve Shutdown Hours	90.75	320.14	2131.03
14. Hours Generator On-Line	611.28	4,920.03	30,310.03
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	1,859,647	15,083,239	89,448,267
17. Gross Electrical Energy Generated (MWH)	607,830	4,996,300	29,535,330
18. Net Electrical Energy Generated (MWH)	587,972	4,843,069	28,667,392
19. Unit Service Factor	82.2	84.4	76.8
20. Unit Availability Factor	82.2	84.4	76.8
21. Unit Capacity Factor (Using MDC Net)	74.2	78.0	68.2
22. Unit Capacity Factor (Using DER Net)	74.2	78.0	68.2
23. Unit Forced Outage Rate	17.8	9.0	9.6
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each)			

Maintenance October 1981

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 August

DOCKET NO. 50-259
 UNIT NAME Browns Ferry - 1
 DATE 9-1-81
 COMPLETED BY T. 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 (Continued)	8/01/81	S	744	C	2				EOC-4 Refuel Outage

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

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-260UNIT NAME Browns Ferry - 2DATE 9-1-81COMPLETED BY T. ThomTELEPHONE 205-729-6846REPORT MONTH August

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
202	8/01/81	F	395.48	H	2				Turbine generator load rejection from 2A and 2B main transformer differential relay operation on July 31 at 2216 hrs as it was being tied on line. The spare main transformer had been incorrectly connected during recent transformer maintenance following trouble with 2A main transformer.
203	8/23/81	F	11.65	G	3				While performing SI 4.2.C.1A, E-APRM switch was in wrong position which gave a 1/2 scram when removed from bypass while performing 1/2 scram on F-APRM.
204	8/23/81	F	10.65	A	4				Turbine trip due to inability to hold condenser vacuum when gland steam packing on exhaust fan motors failed.

1
F - Forced
S - Schedule

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 (NURIG-0151)

5 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH August

DOCKET NO. 50-296
 UNIT NAME Browns Ferry - 3
 DATE 9-1-81
 COMPLETED BY T. 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
84	8/01/81	F	45.58	B	2				Reactor scram to swap transformers and maintenance on torus H ₂ O ₂ sample valve
85	8/06/81	S							Derated for control rod pattern adj.
86	8/12/81	F	56.07	A	2				Reactor scram to investigate low level in upper bearing oil reservoir of 3A recirc. pump (replaced leaking thermocouple in upper bearing).
87	8/22/81	F	17.48	A	3				Reactor scram while performing SI 4.2.A.8 main steam line high temp. on extraneous signal from channel "D" resulted in the MSIV going closed.
88	8/30/81	F	13.58	A	3				Reactor scram when faulty relay operation caused a loss of the Cordova line. When relay reset was attempted, the Davidson line was lost with subsequent load unbalance and generator trip.

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

INSTRUMENT MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF August 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
Unit 1							
8-5	Fuel Pool	LS-78-1A,1B,1C	Calibrate	None	Instrument Drift	Level Switches Did Not Agree	None
8-5	Radwaste	FQ-77-6	Backfill	None	Air in Lines	Erratic Indication	None
8-17	Neutron Monitoring	LPRM 4B-32-25	Repair	None	Bad Flux Card	Indicating Low	None
		LPRM 2B-24-41	Repair	None	Bad Connector	Indicating Low	None
8-18	Core Spray	FT-75-21	Replace	None	Failed Bellows	Indicator Showed 6000 GPM Flow with Pumps Off	None
8-18	Standby Liquid Control	PI-63-7B	Repair	None	Bent Pointer	Indicated Low Pressure	None
8-19	Core Spray	PI-75-32, 41	Calibrate	None	Instrument Shift	Indicated High Pressure	None
8-20	Primary Containment	TI-64-55A	Calibrate	None	Instrument Shift	Indicated Low Temperature	None
	Primary Containment	LI-64-54A	Calibrate	None	Instrument Shift	Indicated One Inch Low	None
Unit 2							
8-4	Neutron Monitoring	B LPRM Meter	Replace	None	Broken	Broken Glass in Meter	None
8-10	Rod Position Information	Top Half of Core Lights-PSY-6	Repair	None	Circuit Breaker Tripped	Loss of 1/2 Core Indication Lights	None
8-23	Neutron Monitoring	ARPM E Mode Switch	Repair	None	Loose Set Screw	Indicator Pointed to Wrong Mode	None

INSTRUMENT MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF August 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
Unit 2							
8-26	Neutron Monitoring	LPRM Downscale Alarm	Repair	None	Faulty Diode in Flux Amp. Card	False Alarm	None
Unit 3							
8-10	Neutron Monitoring	Tip "D" Veeder- Root Counter	Replace	None	Faulty Contacts	"Counts Out Too High" Alarm	None
8-6	Feedwater	PI-3-207	Replace	None	Binding Movement	Slow Response	None
8-13	Neutron Monitoring	IRM-D	Repair	None	Dirty Connector	Erratic Indication	None
8-15	Control Rod Drive	PX-3A-PS-6	Replace	None	Faulty Circuit	No Control Power on CRD Select	None
8-25	Primary Containment	TI-64-55A	Calibrate	None	Instrument Shift	False Temperature Indication	None
8-28	Primary Containment	LI-64-54A	Repair	None	Blown Fuse	Indicated Downscale	None

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of August 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
8/2/81	Fire Protection	Cardox tank expansion valve	High tank pressure	None	The expansion valve power head was sticking	Expansion valve inoperable	Replaced power head and cleaned expansion valve, unit operated properly. TR #224998
8/8/81	CRD	CRD (Rod 18-39) control circuitry	Rod 18-39 scrams on $\frac{1}{2}$ scram	None	Blown fuse	Rod would not half scram	Replaced fuse, CRD operated properly. TR #223259
8/17/81	CRD	Hand switch 85-48	HS 85-48 stop broken	None	Broken stop	Required care to be taken while operating switch to avoid rotating switch past desired setting	Replaced stop, switch operated properly. TR #225657
8/17/81	4kV shut-down boards	Under voltage relay 27BDDC	Received a annunciation for degraded voltage on panel 9-23	None	All four RHR pumps were started and stopped in rapid succession not allowing time for the degraded voltage relays to fully reset before the next RHR pump started.	Two out of three degraded voltage relays operated causing diesel start. Annunciation for degraded voltage on panel 9-23 remained in because relay 27BDDC did not fully reset	The relay was manually reset and the annunciation cleared. The D/G was returned to stand-by ready. TR #236204

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of August 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
8/18/81	Air-conditioning (cooling-heating)	Control room air handling unit 1B control circuitry	Air handling unit 1A would not start	None	Auxiliary contacts in unit 1B prevented unit 1A from starting	Air handling unit 1A was inoperable	Cleaned and lubricated the auxiliary contacts, the air handling units operated properly. TR #224946
8/27/81	Core spray cooling	Core spray pump 1D timer 14A-K19B	During performance of diesel generator load acceptance test (SI 4.9. A.1.b) core spray 1D timing was found slightly out of calibration	None	Timer 14A-K19B was out of calibration	Timer operated slightly slow	Performed SI 4.2. B-39 to calibrate timer. The timer calibrated properly. TR #186869 TR #225134
8/29/81	RBCCW	Drywell blower 1B5 feeder breaker..	Breaker would not trip	None	ACB molded case operator was broken	Breaker would not trip	Replaced the broken ACB operator. The breaker operated properly. TR #241686

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of August 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
7/2/81	Reactor protection	RPS MG set 2B motor	MG set motor over heating	None	Bad motor winding	Motor over heating however the motor was operable	The motor was rewound, re-installed 8/7/81. The MG set motor operated properly. TR #225119
8/2/81	Primary containment	FCV-64-28C	FCV-64-28C would not test from hand switch	None	Bad coil	FCV-64-28C was inoperable for manual operation	Replaced coil, valve operated properly. TR #205685
8/3/81	HPCI	Suppression chamber high level timing circuitry	While performing SI 4.2.B-27, suppression chamber high level sensor's LS-73-57A and LS-73-57B operated time delay relay 23AK51 at correct set-point but the parameter sensor relay 23AK15 did not operate	None, the unit was in cold shutdown	Relay 23AK51 timing circuitry possibly failed to operate on this one occasion	Parameter sensor relay 23AK15 did not operate on this one occasion	Relays 23AK51 and 23AK15 were successfully operated several times and the event could not be repeated. The relays will be functionally checked once per week for the next four weeks to verify operability. TR #241292 LER#BFRO-50-260/8142

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of August 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
8/10/81	Unit preferred 120 volt AC system	Unit preferred MG set tie to battery board #2 (normal feeder breaker #1001)	Breaker 1001 tripped	None	Over/under voltage trip circuitry card was bad	Normal feeder breaker 1001 was inoperable	The bad OVR was replaced, calibrated and successfully tested. TR #182803

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of August 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
8/2/81	RCIC	3-FCV-71-3	During routine startup, RCIC steam supply isolation valve 3-FCV-71-3 could not be electrically operated	RCIC was inoperable. Redundant systems were available and operable	Bad valve motor due to an open shunt field	RCIC was inoperable	The valve motor was replaced. The valve was timed and proven operable. TR#189772 LER#BFRO-50-296/8138
8/2/81	Air conditioning (cooling-heating)	3B control bay chiller	Control bay chiller 3B was not cooling properly	None	Low of freon, temperature controller was not operating properly	The control bay chiller was not cooling properly	Added freon, changed freon filters and replaced the temperature controller. The chiller operated properly. TR #189809
8/13/81	Off-gas	Condensor drive valve 66-93	Fuse 22-26A-F15 on panel 9-53 continually blowing	None	Bad relay coil and flow regulator was out of calibration	Valve 66-93 inoperable	Replaced bad relay coil, IM's repaired flow regulator, the valve operated properly. TR 182528

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of August 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
8/16/81	HPCI	Gland seal condenser hot well level switch 73-15B	Level switch 73-15B inoperable	None	Bad level switch	Hot well low level trip circuitry inoperable	Replaced level switch. Switch alarms and pump operated properly. TR 182410
8/26/81	Radiation monitoring	Radiation monitor 90-256	CAM detector circuitry inoperable	Drywell air sampling inoperable	Loose connection on thermostat not allowing relay operation	Drywell air sampling inoperable	Tightened loose connection, relay operated properly. TR #240635 LER#BFRO-50-296/8143

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of August 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
8-16-81	D/G	A Air Compress.	Blown Head Gasket	None	Unknown	Blown head gasket	Replaced head gasket high pressure cylinder TR# 204469
8-18-81	Control Bay	1B Control Room Air Handling Unit	Worn shaft & bearings	None	Worn & broken parts	Shaft & bearings worn out, & spider broken loose	Replaced shaft & bearings, also repaired spider TR# 189745
8-23-81	EECW	A2 RHRSW pump Vacuum Breaker	Broken Valve	None	Air release valve broken	Unknown	Replaced air release valve TR# 203771
8-22-81	D/G	1A D/G A Air Compressor	Blown gasket	None	Blown head gasket	Leaking head gasket	Replaced bottom gasket & spacer. Honed jig fit surface TR# 236214

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of August 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
8-18-81	CRD	34-43 1-85-40B	Faulty Valve	None	Rod withdraw time would not adjust	Rod withdrawal time too fast	Replaced directional control valve TR# 223283
8-4-81	RCW	A-B-C Chiller	Faulty gasket	None	Strainer was clogged up	Clogged strainer	Replaced gasket & unclogged drain TR# 235855
7-29-81	CRD	CRD 06-31 FCV-85-39A	Valve leak	None	Valve out of adjustment	Leak	Adjusted valve stem TR# 235849
7- -81	Contr. Bay Heating Vent & A.C.	1B oil cooler chiller	Faulty Valve	None	Bad valve	Unknown	Replaced all parts & valve body TR# 223465
8-21-81	EECW	A RHR Pump Motor Cooler	Broken Valve	None	Valve broken off cooler	Leak	Replaced valve TR# 235918
8-20-81	CRD	Valve 1-85-40B Module 26-39	Out of Adjust.	None	Faulty Valve	Valve would not operate	Changed out directional control valve TR# 235913
8-20-81	CRD	Module 34-11	Out of Adjust.	None	Faulty Valve	Withdraw time too fast	Rebuilt & replaced valve TR# 235912
8-21-81	D/G	1A D/G Air Compressor	Blown Head Gasket	None	Unknown	Bottom head gasket blown	Replaced both top & bottom head gaskets TR# 241869

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of August 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
8-5-81	CRD	85-552 85-554	Broken stem bushings	None	Stem bushings broken	Unknown	Replaced stem bushing with new ones TR# 205747
7-31-81	CRD	Accumulator 50-23	Leak	None	Faulty Accumulator	Water Leakage	Replaced with new one TR# 238988
7-31-81	High-Press. Fire Prot.	FCV-26-74C	Valve won't hold press.	None	Worn seat gasket	Valve not functioning properly	Changed rubber flap on check valve TR# 205629
8-4-81	Secondary Containment	Equip. Airlock U-2	Broken parts	None	Closer was broken & latch failure	Door would not operate properly	Install new closure, repaired lock. Shined hinges TR# 188225
7-28-81	Secondary Containment	Door 241	Door not locking properly	None	Worn Parts	Door not locking properly	Straighten air seal & fasten it in place TR# 234643
8-18-81	CRD	Module 50-23 Water accum.	Blown piston	None	Piston blown	Unknown	Replaced all o'rings & rebuilt TR# 233026

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of August 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
8-12-81	RCIC	HCV-71-570	Leak	None	Worn gaskets	Leakage at steam trap	Installed new gasket TR# 189833
8-26-81	HPCI	LS-73-56A	Faulty level switch	None	Bad level switch	Float sticking	Replaced level switch TR# 240708

OUTAGE SUMMARY

August 1981

The outage related maintenance and modification activities for the month of August continued to focus principally on the unit 1 cycle 4 refueling/torus modification work that has been in progress since April 1981. Note that some outage attention was diverted to the unscheduled unit 2 shutdown for transformer repairs and, to a lesser degree, the unit 3 unscheduled shutdown. Major emphasis was placed on the following activities with additional effort toward those items that are prerequisites for integrated leak rate testing:

1. Torus modification - Completed all internal torus modifications necessary for torus fill. Torus fill was completed on August 17, and torus was declared operable August 25, 1981.
2. LPCI modification continued - Completed Loop 1 portion of this modification and testing August 22. The two motor generator sets associated with Loop 1 have been released to Operations.
3. H_2O_2 analyzer and sample pump all pipe welds, caps and tie-ins to existing systems were completed during August. Electrical work, final hanger installations and post modification testing remain.
4. Turbine Floor - Completed all major turbine floor work scheduled for unit 1 outage.
5. Generator Breaker Modification P0214 - Continued this month, post modification testing is in progress at the close of this report period.
6. Core reload was completed August 11.
7. MSIV final repairs and leak testing complete.

OUTAGE SUMMARY (Continued)

August 1981

8. Degraded voltage relay installation and testing in the 4kV shutdown boards was completed. This is part of ECN P0275 Unit Station Service Transformer modification.
9. Five additional CRD's were identified for replacement this month. Work was completed August 26. The late identification of major work such as this has a disruptive effect on the overall outage schedule. It is recommended that efforts be directed toward earlier identification of all work of this nature including more positive diagnostics.
10. Core shutdown margin checks were performed as a prerequisite to CRD changeout.
11. The malfunctioning spare transformer has been disconnected and moved off its foundation pad. It was replaced with the transformer that was formerly in the 1C location. A replacement transformer has been received for installation in the vacated 1C location and work is presently in progress to mount the coolers and associated equipment prior to final placement of the transformer.

The unit 1 cycle 4 outage schedule was reevaluated recently which placed the revised outage duration at 161 days for a return to service date of September 19, 1981.

OUTAGE SUMMARY (Continued)

August 1981

During the performance of RTI-5 following CRD maintenance for newly rebuilt CRD's (30-31, 34-47, 42-43, and 50-19) experienced difficulty moving from position 00 to 02. They functioned normally during the withdrawal from 02 to 48. Three CRD's (30-35, 26-39 and 34-11) could not be timed to <40 second withdrawal time as required by RTI-5. All seven CRD's were replaced and satisfactorily retested. Investigation into these two problems continues.

After Unit 1 Cycle 5 fuel loading, the fuel support casting at core location 26-47 was found improperly seated. The problem was corrected prior to core verification. Subsequent investigation established that it was seated at the beginning of cycle 4 core verification. The fuel support casting is associated with control rod drive 26-47 removed for maintenance and was probably unseated during the maintenance activities.