

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT TO NRC
December 1, 1984 - December 31, 1984

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

Submitted by:

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Operations Summary

December 1984

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

There were four reportable occurrences and no revisions to previous reportable occurrences reported to the NRC during the month of December.

Unit 1

There were no scrams on the unit during the month.

Unit 2

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

Unit 3

There was one manual scram on the unit on December 9, 1984, due to a condensate pump motor ground coupled with a breaker trip failure.

Prepared principally by B. L. Porter.

Operations Summary (Continued)

December 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	0.00611	0.00492	0.00421
Feedwater nozzle	0.29404	0.21319	0.15791
Closure studs	0.23744	0.17629	0.14159

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

Common System

Approximately $8.68E+05$ gallons of waste liquids were discharged containing approximately $4/26E-01$ curies of activities.

Operations Summary (Continued)

December 1984

Refueling InformationUnit 1

Unit 1 is scheduled for its sixth refueling approximately June 1, 1985 with a scheduled restart date of March 31, 1986. 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 was shut down for its fifth refueling outage on September 15, 1984 with a scheduled restart date of August 1, 1985. This refueling outage will involve loading additional 8x8R (retrofit) fuel assemblies into the core, finishing torus modification, turbine inspection, piping inspection, TMI-2 modifications; post-accident sampling facility tie-ins, core spray change-out, and feedwater sparger inspection.

There are no fuel assemblies in the reactor vessel. At month end, there were 273 new fuel assemblies, 764 EOC-5 fuel assemblies, 248 EOC-4 fuel assemblies, 352 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 77 locations. All old racks have been removed from the pool and new HDR's are being installed.

Operations Summary (Continued)

December 1984

Unit 3

Unit 3 is scheduled for its sixth refueling outage approximately November 30, 1985, with a scheduled restart date of November 10, 1986. This refueling involves loading 8X8R (retrofit) assemblies into the core, and complete reinspection of stainless steel piping.

There are 764 fuel assemblies presently in the reactor vessel. There are 248 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 914 locations.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 1
12/01	0001	Reactor thermal power at 56-percent (%) for control rod sequence exchange.
	0300	Reactor thermal power at 54% for control rod sequence exchange, increasing thermal power for control rod sequence exchange.
	1308	Control rod sequence exchange complete, commenced power ascension from 63% thermal power.
	1356	Commenced PCIOMR from 68% thermal power.
12/03	0630	Reactor thermal power at 100%, maximum flow, rod limited.
	1000	Reactor thermal power at 99%, maximum flow, rod limited.
	1300	Reactor thermal power at 98%, maximum flow, rod limited.
	1350	Commenced PCIOMR from 98% thermal power.
	1600	Reactor thermal power at 100%, maximum flow, rod limited.
	2300	Reactor thermal power at 99%, maximum flow, rod limited.
12/04	0335	Commenced reducing thermal power for SI 4.3.A.2 (Control Rod Drive Exercise).
	0400	Reactor thermal power at 96% for control rod drive exercise.
	0515	SI 4.3.A.2 complete, commenced power ascension.
	0600	Reactor thermal power at 98%, maximum flow, rod limited.
	2200	Reactor thermal power at 97%, maximum flow, rod limited.
12/06	2241	Recirculation pump "B" tripped, reducing thermal power.
12/07	0500	Reactor thermal power at 48% due to "B" recirculation pump trip.
	0550	Commenced increasing power to restart "B" recirculation pump.
	0615	"B" recirculation pump in service, reactor power at 51%.
	0650	"B" recirculation pump out-of-service, reducing thermal power from 51%.
	0700	Reactor thermal power at 48% due to "B" recirculation pump out-of-service.
	0812	"B" recirculation pump in service, commenced power ascension.
	1200	Reactor thermal power at 97%, holding due to Xenon transient.
	1210	"B" recirculation pump tripped, reducing thermal power.
	1700	Reactor thermal power at 56%, holding due to "B" recirculation pump trip.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
12/07 (Cont.)	1957	"B" recirculation pump in service, commenced power ascension.
	2330	Commenced PCIOMR from 71% thermal power.
12/09	1130	Reactor thermal power at 100%, maximum flow, rod limited.
	1500	Reactor thermal power at 99%, maximum flow, rod limited.
	2000	Reactor thermal power at 98%, maximum flow, rod limited.
12/10	0300	Reactor thermal power at 97%, maximum flow, rod limited.
	1000	Commenced power ascension from 97% thermal power.
	1400	Commenced PCIOMR from 99% thermal power.
	1430	Reactor thermal power at 100%, maximum flow, rod limited.
	1500	Reactor thermal power at 99%, maximum flow, rod limited.
12/11	1632	Reduced thermal power to 97% when control rod 22-07 was inserted to position 00 for SI 4.3.B.1.a (Control Rod Coupling Integrity).
12/12	1135	Completed SI 4.3.B.1.a; commenced power ascension from 97% thermal power.
	1400	Reactor thermal power at 100%, maximum flow, rod limited.
	2200	Reactor thermal power at 99%, maximum flow, rod limited.
12/13	1041	"B" recirculation pump tripped, commenced reducing thermal power.
	1530	Reactor thermal power at 47%, "B" recirculation pump out-of-service.
	1600	Attempted to restart "B" recirculation pump, field breaker failed to close.
	1855	Commenced power ascension from 47% thermal power. "B" recirculation pump still out-of-service.
12/14	0530	Commenced reducing thermal power from 62% to adjust margins on core limits.
	0545	Reactor power at 58% holding due to core limits.
	1014	"B" recirculation pump in service, commenced power ascension.
	1130	Commenced reducing thermal power from 71% for control rod pattern adjustment.
	1500	Reactor power at 67% for control rod pattern adjustment.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
12/14 (Cont.)	1745	Control rod pattern adjustment complete, commenced power ascension.
	1930	Commenced PCIOMR from 76% thermal power.
12/16	0230	Reactor thermal power at 98%, maximum flow, rod limited.
	0900	Reactor thermal power at 97%, maximum flow, rod limited.
	1500	Reactor thermal power at 96%, maximum flow, rod limited.
	1728	Commenced reducing thermal power for control rod pattern adjustment.
	1855	Reactor thermal power at 76% for control rod pattern adjustment.
	1945	Control rod pattern adjustment complete, commenced power ascension.
	2000	Commenced PCIOMR from 78% thermal power.
12/17	1800	Reactor thermal power at 100%, maximum flow, rod limited.
	2200	Reactor thermal power at 99%, maximum flow, rod limited.
12/18	0130	Increased thermal power to 100%, maximum flow, rod limited.
	1000	Reactor thermal power at 99%, maximum flow, rod limited.
	1630	Increased thermal power to 100%, maximum flow, rod limited.
12/21	1900	Reactor thermal power at 99%, maximum flow, rod limited.
12/22	2335	Commenced reducing thermal power for SI 4.3.A.2 (Control Rod Drive Exercise).
	2400	Reactor thermal power at 95% for SI 4.3.A.2.
12/25	0210	SI 4.3.A.2 complete, commenced power ascension.
	0700	Reactor thermal power at 100%, maximum flow, rod limited.
12/29	0347	Commenced reducing thermal power for SI 4.3.A.2 (Control Rod Drive Exercise).
	0400	Reactor thermal power at 95% for SI 4.3.A.2.
	0540	SI 4.3.A.2 complete, commenced PCIOMR.
	1000	Reactor thermal power at 100%, maximum flow, rod limited.
12/30	0700	Reactor thermal power at 99%, maximum flow, rod limited.
12/31	2400	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 2
12/01	0001	End-of-cycle 5 refuel outage continues.
12/31	2400	End-of-cycle 5 refuel outage continues.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 3
12/01	0001	Reactor thermal power at 13%, holding for startup and turbine vibration checks.
	0555	Increased thermal power from 13%.
	0630	Reactor thermal power at 18%, holding for startup and turbine vibration checks.
	0800	Reactor thermal power at 17%, holding for startup and turbine checks.
	0900	Reactor thermal power at 16%, holding for startup and turbine vibration checks.
	0932	Rolled main turbine.
	1007	Turbine at rated speed, oil trip test complete.
	1021	Synchronized generator, commenced power ascension from 15% thermal power.
	1430	Turbine offline, from 22% thermal power for backup overspeed test.
	1455	Backup overspeed test complete.
	1505	Synchronized generator, commenced power ascension.
	1950	Reactor thermal power at 24%, holding for a TIP set.
	2400	Reactor thermal power at 23%, holding for a TIP set.
12/02	0300	Reactor thermal power at 22% for a TIP set.
	2125	Commenced power ascension from 22% thermal power.
	2150	Reactor thermal power at 24%, holding for a TIP set.
12/03	1410	TIP set complete, holding at 24% power for RTI-13 (Proces Computer).
	1810	Commenced power ascension from 24% thermal power.
	1820	Stopped power ascension at 25% thermal power, computer out-of-service.
	2245	Computer back in service, commenced power ascension.
12/04	0100	Stopped power ascension at 26%, holding for SI 4.1.B-2 (APRM Gain) and SI 4.1.B.1 (IRM/APRM Overlap).
	0230	SIs complete, commenced rod withdrawal.
	0330	Stopped power ascension at 27% thermal power, computer out-of-service.
	1615	Computer back in service, commenced power ascension.
	1624	Stopped power ascension at 28%, computer out-of-service.
	1650	Computer back in service, commenced power ascension.
	1720	Stopped power ascension at 30% thermal power, computer out-of-service.
	1735	Computer back in service, commenced power ascension.
	2300	Reactor power at 37%, holding for scram timing control rods (SI 4.3.C-1A).

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 3 (Continued)		
12/06	1030	SI 4.3.C-1A complete, holding at 37% power for startup SIs.
12/07	1834	Commenced power ascension from 37%, startup SIs in progress.
	1842	Stopped power ascension at 40% power, holding for startup SIs.
12/08	0155	Adjusted "B" recirculation pump speed due to vibration alarm, reducing thermal power to 39%.
	0230	Recirculation pump "B" back to original speed, reactor power at 39%, holding for startup SIs.
12/09	0945	Adjusted speed on recirculation pumps to clear vibration alarm, reducing thermal power.
	1000	Reactor thermal power at 36%, holding due to recirculation pump vibration alarm.
	12/05	Reactor Manual Scram No. 114 from 36% thermal power due to 3A unit board tripping and "A" hotwell pump going to ground, with RPS "A" being lost. Unit remained offline to repair leaks on the below seat drain valve for valve 68-33 inside the drywell.
12/10	0415	Reactor in cold shutdown.
12/18	1013	Commenced rod withdrawal for startup.
	1150	Reactor Critical No. 131.
12/19	0110	Rolled turbine/generator.
	0223	Synchronized generator, commenced power ascension.
	0700	Reactor power at 53% for LPRM/APRM gain adjustments.
	1500	Reactor power at 47% for LPRM/APRM gain adjustments.
	2300	Reactor power at 43% for LPRM/APRM gain adjustments.
12/20	0600	Reactor power at 41% for LPRM/APRM gain adjustments.
	2030	Reactor power at 40%, LPRM/APRM gain adjustments complete, holding for TIP run.
12/22	0455	All TIP runs complete, commenced power ascension.
	0550	Stopped power ascension at 55% power due to APRMs on rod blocks.
	0850	Commenced power ascension from 55% power.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 3 (Continued)		
12/22 (Cont.)	1310	Stopped power ascension at 65% for APRM flow bias testing.
	2300	APRM flow bias and functional tests complete, holding at 65% for a TIP run.
12/23	0100	TIP run complete, commenced power ascension.
	0152	Reduced thermal power from 66% to 61% for SI 4.3.A.2.d (Control Rod Accumulator Operability).
	0325	SI 4.3.A.2.d complete, commenced power ascension.
	0430	Commenced PCIOMR from 64% thermal power.
12/24	0830	Stopped PCIOMR at 84% thermal power for SI 4.1.B.2 (APRM Gain).
	1040	SI 4.1.B.2 complete, reactor power at 82% and decreasing for SI 4.1.B.15 (APRM Flow Bias Adjustments).
12/25	0315	SI 4.1.B.15 complete, commenced power ascension from 79% thermal power.
	0320	Commenced reducing thermal power from 81% for control rod pattern adjustment.
	0400	Reactor power at 58% and increasing for control rod pattern adjustment.
	0830	Control rod pattern adjustment complete, commenced PCIOMR from 70% thermal power.
12/26	1545	Stopped PCIOMR at 97% thermal power due to condensate demineralizer problems, decreasing thermal power.
	2130	Commenced PCIOMR from 95% thermal power.
12/27	0330	Stopped PCIOMR at 99% thermal power due to problems with "B" recirculation pump speed control, decreasing thermal power.
	1800	Reactor power at 96% due to "B" recirculation pump speed control problems.
12/28	1500	Reactor thermal power at 93% due to "B" recirculation pump speed control problems.
12/29	0044	Commenced reducing thermal power due to computer problems.
	0053	Reactor power at 90%, holding due to computer problems.
	0315	Computer back in service, commenced power ascension.
	0415	Reactor power at 93%, holding for TIP run.
	0910	Commenced reducing thermal power for removal of "A" condensate pump from service for maintenance.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 3 (Continued)		
12/29 (Cont.)	1030	Reactor thermal power at 70%, "A" condensate pump removed from service.
	1300	"A" condensate pump back in service, commenced power ascension.
	1355	Commenced PCIOMR from 77% thermal power.
12/30	1840	Reactor thermal power at 99% due to problems with indicating watt hour meter (reading >100% MWe).
	2300	Reactor thermal power at 98%, holding due to problems with indicating watt hour meter (reading >100% MWe).
12/31	0820	Reduced thermal power to 97% due to problems with indicating watt hour meter (reading >100% MWe).
	1335	Increased thermal power to 98%, holding due to problems with indicating watt hour meter (reading >100% MWe).
	2400	Thermal power at 98%, holding due to problems with indicating watt hour meter (reading >100% MWe).

13
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259

UNIT Browns Ferry-One

DATE 1/1/85

COMPLETED BY T. Thom

TELEPHONE 205/729-3834

MONTH December 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>656</u>
2	<u>895</u>
3	<u>1050</u>
4	<u>1059</u>
5	<u>1046</u>
6	<u>1021</u>
7	<u>645</u>
8	<u>876</u>
9	<u>1032</u>
10	<u>1054</u>
11	<u>1043</u>
12	<u>1037</u>
13	<u>779</u>
14	<u>683</u>
15	<u>940</u>
16	<u>991</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>976</u>
18	<u>1058</u>
19	<u>1072</u>
20	<u>1073</u>
21	<u>1060</u>
22	<u>1059</u>
23	<u>1056</u>
24	<u>1064</u>
25	<u>1072</u>
26	<u>1061</u>
27	<u>1069</u>
28	<u>1064</u>
29	<u>1055</u>
30	<u>1062</u>
31	<u>1056</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.

14
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260
UNIT Browns Ferry-Two
DATE 1/1/85
COMPLETED BY T. Thom
TELEPHONE 205/729-3834

MONTH December 1984

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

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>-3</u>
18	<u>-3</u>
19	<u>-2</u>
20	<u>-4</u>
21	<u>-4</u>
22	<u>-4</u>
23	<u>-3</u>
24	<u>-3</u>
25	<u>-4</u>
26	<u>-3</u>
27	<u>-3</u>
28	<u>-3</u>
29	<u>-3</u>
30	<u>-3</u>
31	<u>-4</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.

15
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-296
UNIT Browns Ferry-Three
DATE 1/1/85
COMPLETED BY T. Thom
TELEPHONE 205/729-3834

MONTH December 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>86</u>	17	<u>-12</u>
2	<u>176</u>	18	<u>-12</u>
3	<u>194</u>	19	<u>391</u>
4	<u>258</u>	20	<u>387</u>
5	<u>342</u>	21	<u>371</u>
6	<u>345</u>	22	<u>560</u>
7	<u>387</u>	23	<u>702</u>
8	<u>316</u>	24	<u>841</u>
9	<u>169</u>	25	<u>778</u>
10	<u>-16</u>	26	<u>966</u>
11	<u>-12</u>	27	<u>1011</u>
12	<u>-13</u>	28	<u>995</u>
13	<u>-10</u>	29	<u>882</u>
14	<u>-10</u>	30	<u>999</u>
15	<u>-10</u>	31	<u>1055</u>
16	<u>-13</u>		

NOTE: Problems with indicating watt hour meter.

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 1/1/85
 COMPLETED BY T. Thom
 TELEPHONE 205/729-3834

OPERATING STATUS

1. Unit Name: <u>Browns Ferry - One</u>	Notes
2. Reporting Period: <u>December 1984</u>	
3. Licensed Thermal Power (MWt): <u>3298</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>744</u>	<u>8,784</u>	<u>91,400</u>
12. Number Of Hours Reactor Was Critical	<u>744</u>	<u>8,067.48</u>	<u>57,873.6</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>700.20</u>	<u>6,485.22</u>
14. Hours Generator On Line	<u>744</u>	<u>7,922.95</u>	<u>56,640.59</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>2,286,965</u>	<u>24,603,767</u>	<u>163,161,446</u>
17. Gross Electrical Energy Generated (MWH)	<u>754,190</u>	<u>8,099,860</u>	<u>53,745,480</u>
18. Net Electrical Energy Generated (MWH)	<u>735,474</u>	<u>7,888,494</u>	<u>52,213,821</u>
19. Unit Service Factor	<u>100</u>	<u>90.2</u>	<u>62.0</u>
20. Unit Availability Factor	<u>100</u>	<u>90.2</u>	<u>62.0</u>
21. Unit Capacity Factor (Using MDC Net)	<u>92.8</u>	<u>84.3</u>	<u>53.6</u>
22. Unit Capacity Factor (Using DER Net)	<u>92.8</u>	<u>84.3</u>	<u>53.6</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>9.5</u>	<u>22.1</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

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

OPERATING DATA REPORT

DOCKET NO. 50-260
 DATE 1/1/85
 COMPLETED BY T. Thom
 TELEPHONE 205/729-3834

OPERATING STATUS

1. Unit Name: Browns Ferry - Two
2. Reporting Period: December 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>744</u>	<u>8,784</u>	<u>86,287</u>
12. Number Of Hours Reactor Was Critical	<u>0</u>	<u>5,895.85</u>	<u>55,860.03</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>300.08</u>	<u>14,200.44</u>
14. Hours Generator On-Line	<u>0</u>	<u>5,845.52</u>	<u>54,338.36</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>13,100,122</u>	<u>153,245,167</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>4,174,510</u>	<u>50,771,798</u>
18. Net Electrical Energy Generated (MWH)	<u>0</u>	<u>4,044,370</u>	<u>49,302,973</u>
19. Unit Service Factor	<u>0</u>	<u>66.5</u>	<u>62.9</u>
20. Unit Availability Factor	<u>0</u>	<u>66.5</u>	<u>62.9</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>43.2</u>	<u>53.7</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>43.2</u>	<u>53.7</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>4.1</u>	<u>23.0</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 April 13, 1985

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 1/1/85
 COMPLETED BY T. Thom
 TELEPHONE 205/729-3834

OPERATING STATUS

- 1. Unit Name: Browns Ferry - Three
- 2. Reporting Period: December 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

Notes

8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:
N/A

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

	This Month	Yr.-to-Date	Cumulative
11. Hours in Reporting Period	<u>744</u>	<u>8,784</u>	<u>68,712</u>
12. Number Of Hours Reactor Was Critical	<u>528.25</u>	<u>700.63</u>	<u>43,788.43</u>
13. Reactor Reserve Shutdown Hours	<u>215.75</u>	<u>763.37</u>	<u>4,641.50</u>
14. Hours Generator On-Line	<u>502.77</u>	<u>504.09</u>	<u>42,697.80</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>910,716</u>	<u>910,716</u>	<u>127,218,427</u>
17. Gross Electrical Energy Generated (MWH)	<u>303,220</u>	<u>303,370</u>	<u>41,900,990</u>
18. Net Electrical Energy Generated (MWH)	<u>290,505</u>	<u>290,505</u>	<u>40,665,761</u>
19. Unit Service Factor	<u>67.6</u>	<u>5.7</u>	<u>62.1</u>
20. Unit Availability Factor	<u>67.6</u>	<u>5.7</u>	<u>62.1</u>
21. Unit Capacity Factor (Using MDC Net)	<u>36.7</u>	<u>3.1</u>	<u>55.6</u>
22. Unit Capacity Factor (Using DER Net)	<u>36.7</u>	<u>3.1</u>	<u>55.6</u>
23. Unit Forced Outage Rate	<u>32.4</u>	<u>66.7</u>	<u>17.9</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
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 December 1984

DOCKET NO. 50-259
 UNIT NAME Browns Ferry-One
 DATE 1/1/85
 COMPLETED BY T. Thom
 TELEPHONE 205/729-3834

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
302 (Cont.)	12/1/84	S		H					Derated for control rod sequence exchange.
303	12/6/84	F		A					Derated for "B" recirculation pump trip.
304	12/13/84	F		A					Derated for "B" recirculation pump trip.
305	12/16/84	S		H					Derated for control rod pattern adjustment.

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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. 50-260
 UNIT NAME Browns Ferry-Two
 DATE 1/1/85
 COMPLETED BY T. Thom
 TELEPHONE 205/729-3834

REPORT MONTH December 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
305	12/1/84	S	744	C	4				EOC-5 Refuel Outage (Controlled shutdown September 15, 1984)

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. 50-296
 UNIT NAME Browns Ferry-Three
 DATE 1/1/85
 COMPLETED BY T. Thom
 TELEPHONE 205/729-3834

REPORT MONTH December 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
146 (Cont.)	12/1/84	F	10.35	B					Excessive vibration on main turbine (turbine offline for balancing).
147	12/1/84	S	0.58	B					Turbine tripped for backup overspeed test.
148	12/9/84	F	230.3	A	2				Reactor manual scram due to "3A" unit board tripping, "A" hotwell pump going to ground and loss of "A" RPS. The unit remained down for repair of a leak on the below seat drain valve on valve 68-33 inside drywell.
149	12/25/84	S		H					Derated ro control rod pattern adjustment.
150	12/29/84	F		A					Derated for maintenance on "A" condensate pump.

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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

BROWNS FERRY NUCLEAR PLANT UNIT 1

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of December 191984

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
1-27-84	82	1B Diesel Generator	Clean coolers for probolog	None	Routine Maintenance	N/A	N/A
-13-84	82	1B Diesel Generator	Inspect EECW Check valves during annual maintenance	None	Preventive Maintenance	N/A	N/A

BROWNS FERRY NUCLEAR PLANT UNIT 3

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of December 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
-13-84	74	1" line to 74-587A Unit 3 Drywell access	Grind out weld and replace weld	None	Unknown	N/A	A new piece of pipe between flange to socket. Repaired on MR A-174354
-17-84	74	RHR Vent line	Repair leak	None	Unknown		Repair on Mr A-156303
-13-84	74	VLV-74-52	Torque flange bolts RHR piping	None	Routine maintenance	N/A	N/A 23
-11-84	68	VLV-68-33	Retack weld on knee brace between 68-535 & 536 drain valves	None	Vibration	Delayed startup of unit	Repaired on MR A-160793
-11-84	23	Pmp 23-94 D3	Pull, repair & replace pump	None	Normal use	None	Rebuilt pump replacing shaft, impellers, bearing etc.

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of December 1984

System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
Diesel 125 V DC System	O-CHGB-254-BA 125VDC battery charger A for DG B	Replace voltmeter on battery charger	None	Wires shorted out during performance of Surveillance Instruction	Loss of voltage indication on battery charger	Replaced voltmeter MR 176095
High pressure fire protection	O-STN-26-1505 strainer and vertical fire pump B	Replace limit switch	None	Limit switch spring broken	Strainer not operating	Replaced limit switch MR 158017
Control bay heating, & vent, & AC	O-CHR-31-0007 CHW, water chiller B	Replace thermo-	None	Normal use	Chiller failed to work properly	Replaced thermostats MR 319940
Control bay heating, & vent, & AC	O-CHR-31-0013 CHW, water chiller A	Replace control relay	None	Burned out control relay	Control bay chiller tripped and would not restart	Replaced control relay MR 156656

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of December 1984

System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
Control rod drive	1-HS-85-48 CRD control switch	Replace spring	None	Broken spring on hand switch	Switch will not return to normal	Replaced spring MR 157111
Annunciator & Sequential Events Recording	1-PNL-55-25-31 backup switch in emergency position	Troubleshoot and replace card	None	Bad card	False annunciation	Replaced card MR 156653
Reactor feedwater	1-PDA-003-095 1-PDA-003-096 1-PDA-003-097 RFP pump seal inj water pressure low	Troubleshoot and replace card	None	Bad card	Annunciators will not test	Replaced card MR 156686
CO ₂ storage & fire	1-XS-39-69YD Rx bldg E1 593 zone Y smoke detector	Replace smoke detector	None	Moisture inside detector	False annunciation	Replaced smoke detector MR 169843

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of December 1984

System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
Annunciator Sequential vents recording	2-PNL-55-9-5 control room panel 9-5	Check power supply	None	Weak inverter	Annunciators appear to flicker when in alarm state	Replace inverter MR 314986
O ₂ storage fire detection	2-XS-39-27E smoke detector near Pnls 9-14	Replace smoke detector	None	Circuit defective	False annunciation	Replaced detector MR 158425

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of December 19 84

System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
High pressure coolant injection	3-HS-73-47A HPCI aux oil	Tighten control handle and replace switch	None	Loose and defective parts	Handswitch not operating properly	Tighten handle and replace switch MR 252926
480V diesel aux boards	3-BKR-219-3EB/ 6E nor fdr to DG 3A exhaust fan B	Replace correct time delay relay to remove TACF 3-84-193-82	None	Temporary relay installed until replacement was obtained	Not applicable	Replaced time delay relay MR 190822
Residual heat removal	3-FCV-74-54 RHR system I testable check vlv	Replace magnetic reed switch	None	Insulation breakdown	False valve position indication	Replaced switch MR 157831
Main steam	3-ZS-001-51 limit switch for main steam line D inbd isol vlv	Replace limit switch	None	Connections loose or defective	Valve will not stay closed in automatic	Replaced limit switch MR 171994
Reactor feedwater	3-RLY-3-86B interlock relay for bypass vlv	Replace relay	None	Open reset coil	Relay burned up	Replaced relay MR 157952
Standby liquid control	3-TS-63-004 pump suction temp switch	Replace thermostat	None	Differential too low on cut-off and on	SLC pump suction line trace heaters not working	Replace thermostat MR 157818

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
December 1984

MAJOR MILESTONES AND EVENTS

The revised Standard Practice BF 8.3 procedure was PORC-approved in mid-December, changing the work plan writing and approval scenarios.

Fuel receipt was completed on December 21, 1984. 301 new General Electric fuel bundles were received.

In-service inspections of pipe welds and hangers were completed on December 18, 1984. Seven welds were rejected. They include:

- DWRC-2-4; Isolable RWCU suction weld
- JP-2-1A&-2-1B; Jet pump instrument line nozzles
- KR-2-14; A Recirc riser saddle weld
- KR-2-36; B Recirc riser saddle weld
- KR-2-37; B Recirc end cap
- KR-2-41; B Recirc riser saddle weld

MINAC was tested with unsuccessful results.

Units 1 and 2 "B" and "A" diesel generator annual maintenance was completed.

The new low pressure (LP) "A" turbine rotor arrived onsite December 12, 1984. The "old" LP "C" spindle was shipped to Muscle Shoals on December 12, 1984.

Main steam relief valves were shipped to Wyle Labs for testing.

Fuel sipping was aborted due to new fuel receipt.

The torus drain was completed on December 17, 1984.

All condensers and waterboxes were opened as of December 21, 1984.

Both recirculation pumps "A" and "B" motor maintenance were completed on December 10, 1984.

The condenser circulating water inlet tunnel was pumped down. Two seams were reported leaking; one of which had been previously repaired.

IHSI of the following number of welds will be required:

- RWCU: 16
- Core spray: 11
- Recirc: 96
- RHR: 31

TOTAL: 154 (U-3 total was 148)

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
DECEMBER 1984

MAJOR MILESTONES AND EVENTS (Continued)

Five inoperative SRMS and IRMs were removed from the vessel.

The unit was taken out of backfeed for a four-week period to perform maintenance and repairs on generator breakers and 2A main transformers.

Probologs completed during December:

C1, C2, B2 Waterboxes
2A5 Drain Cooler
2B 1, 2, 3, 4, 5 Feedwater Heaters
2A RHRHX
1 and 2 A and 1 and 2 B Diesel Generators

Modifications completed during December:

ECN P0646; diesel generator air start valve installations completed on unit 1/2 "A" and "B" diesels.

CRITICAL PATH WORK

ECN P0126 work plan preparations continued with highest priority assigned to core drilling and conduit installation. The core drill workplan was approved on December 26, 1984, and core drilling started at elevation 593 on December 31, 1984.

OTHER MAJOR WORK IN PROGRESS

Security Modifications - As of December 31, 1984, 57 days remained for completion of modifications. All materials required for fabrication of the first (of three) set of 38 barriers have been received at the service shop. Modifications to the stairwells outside the power block personnel accesses were completed. Work plans for modifications to the control bay doors and for installation of the first set of barriers are in the approval cycle.

IHSI - Preparations to start heats on January 8, 1985, continued. The contractor arrived onsite in mid-December for setup and interference identifications. 54 interferences were identified; five electrical and 49 mechanical. The IHSI support building is set and power hookups are 90 percent complete.

Drywell structural steel inspections by Engineering Design continued with overall inspections approximately 80-percent complete.

Major valve work in progress: 74-68, 71-580, 73-603, 3-76, "B" I/B and both "C" main steam isolation valves, removal of 64-series valves.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
DECEMBER 1984

OTHER MAJOR WORK IN PROGRESS (Continued)

Recirculation motor-generator set (MG) maintenance continued through December and lacks stoning rings on both MG sets for completion.

ECN P0392 SDIV tank prefabrications are in progress.

Torus baffle removals are 80-percent complete. Bottom decontamination/sandblast was completed. Internal work started on December 18, 1984.

ECN P0361 (torus attached piping) work has not started. This work continues to be plagued with unissued drawings.

REMARKS

As of December 31, 1984 (outage day 108), the projected completion date is August 2, 1985 (outage day 322). Major slippage has occurred during the month and is attributed primarily to revision of BF Standard Practice 8.3 and engineer training.