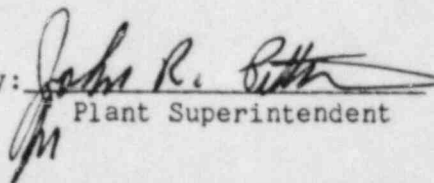


TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT TO NRC
February 1, 1984 - February 29, 1984

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

Submitted by:


Plant Superintendent

8403300136 840309
PDR ADOCK 05000259
R PDR

TABLE OF CONTENTS

Operations Summary.	1
Refueling Information	3
Significant Operational Instructions.	5
Average Daily Unit Power Level.	12
Operating Data Reports.	15
Unit Shutdowns and Power Reductions	18
Plant Maintenance	21
Field Services Summary.	31
Addenda	37

Operations Summary

February 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 nine reportable occurrences and no revisions to previous reportable occurrences reported to the NRC during the month of February.

Unit 1

There were four scrams on the unit during the month. On February 9, during performance of an SI, the reactor scrammed on MSIV closure due to a bad solenoid. On February 14, the unit was administratively shutdown with a manual scram. The RHRSW and EECW air release and vacuum relief valves were found marginally designed. On February 20, during turbine warming operations and unit startup, the unit scrammed on high first-stage pressure. On February 29, the unit automatically scrammed from an unknown cause.

Unit 2

There were two scrams on the unit during the month. On February 14, the unit was administratively shutdown with a manual scram. The RHRSW and EECW air release and vacuum relief valves were found marginally designed. On February 22, during rod pull approach to critical, an IRM HI HI scram occurred due to continuous withdrawal of a high worth rod.

Unit 3

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

Prepared principally by B. L. Porter.

Operations Summary (Continued)

February 1984

Fatigue Usage Evaluation

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

<u>Location</u>	<u>Usage Factor</u>		
	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>
Shell at water line	0.00598	0.00486	0.00403
Feedwater nozzle	0.28817	0.21103	0.15429
Closure studs	0.23477	0.17236	0.13233

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

Common System

Approximately $9.25\text{E}+05$ gallons of waste liquids were discharged containing approximately $1.17\text{E}+00$ curies of activities.

Operations Summary (Continued)

February 1984

Refueling InformationUnit 1

Unit 1 ended its fifth refueling outage on January 2, 1984. Unit 1 is scheduled for its sixth refueling beginning on or about February 8, 1985 with a scheduled restart date of August 27, 1985. This refueling will involve loading 8x8R (retrofit) fuel assemblies into the core, replacing recirculation piping, work on "A" and "B" low-pressure turbines, upgrade hangers and anchors, and environmentally qualify instrumentations.

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

Unit 2

Unit 2 is scheduled for its fifth refueling beginning on or about August 1, 1984 with a scheduled restart date of November 29, 1984. This refueling outage will involve loading additional 8X8R (retrofit) fuel assemblies into the core, finishing the torus modification, turbine inspection, finishing piping inspection, finishing TMI-2 modifications; post-accident sampling facility tie-ins, core spray change-out, and feedwater sparger inspection.

There are 764 fuel assemblies in the reactor vessel. At the end of the month there were 248 EOC-4 fuel assemblies, 353 EOC-3 fuel assemblies, 156 EOC-2 fuel assemblies, and 132 EOC-1 fuel assemblies in the spent fuel storage pool. The present available capacity of the spent fuel pool is 861 locations.

Operations Summary (Continued)

February 1984

Unit 3

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

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

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 1
2/1	0001	Reactor thermal power at 97-percent (%), maximum flow, rod limited.
	0200	Reactor thermal power at 96%, maximum flow, rod limited.
	1100	Reactor thermal power at 95%, maximum flow, rod limited.
2/2	2204	Commenced reducing thermal power for a control rod pattern adjustment.
	2400	Reactor power at 70% for a control rod pattern adjustment.
2/3	0010	Control rod pattern adjustment in progress, commenced power ascension.
	0500	Control rod pattern adjustment complete, commenced PCIOMR from 78% thermal power.
2/4	0300	Reactor thermal power at 100%, maximum flow, rod limited.
	1230	Reduced thermal power to 96% to decreased load line.
	1300	Commenced power ascension from 96% power.
	1330	Reactor thermal power at 100%, maximum flow, rod limited.
	1800	Reactor thermal power at 99%, maximum flow, rod limited.
	2040	Commenced power ascension from 99% power.
	2100	Reactor thermal power at 100%, maximum flow, rod limited.
	2350	Commenced reducing thermal power for turbine control valve test and Surveillance Instructions (SI).
2/5	0100	Reactor thermal power at 91% for turbine control valve test and SI's.
	0215	Turbine control valve test and SI's complete, commenced power ascension.
	0300	Commenced PCIOMR from 95% thermal power.
	0700	Reactor thermal power at 100% maximum flow, rod limited.
2/9	0928	Reactor Scram No. 169 from 100% thermal power during the performance of SI 4.1.A.10. When the high-radiation trip signal was given to MSL "B", FCV-1-38 went closed (MSIV "C" outboard). Post event investigation revealed the DC solenoid was failed on this valve. The SI removed power from the AC solenoid, allowing the valve to close. B1/B2 channels were tripped by the HI RAD signal, and A1/A2 RPS channels tripped when "C" reactor high-pressure signal was received following FCV-1-38 closed. MSL "A" high-flow signal occurred nearly coincident with the high-pressure signal, and initiated full MSIV closure.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
2/10	0141	Commenced rod withdrawal for startup.
	0528	Reactor Critical No. 192.
	1040	Rolled turbine/generator (T/G).
	1140	Synchronized generator, commenced power ascension.
	1730	Commenced reducing thermal power from 56% for "A" recirculation pump motor/generator (MG) set brush replacement.
	1900	Reactor thermal power at 46% for "A" recirculation pump, MG set brush replacement.
	2033	"A" recirculation pump in service, increasing thermal power.
	2050	Commenced reducing thermal power from 56% for "B" recirculation pump.
	2200	Reactor thermal power at 43% for "B" recirculation pump MG set brush replacement.
	2355	"B" recirculation pump in service, commenced power ascension.
2/11	0100	Reactor power at 66%, holding for turbine control valve test and SI's.
	0405	Turbine control valve test and SI's complete, increasing thermal power for control rod pattern adjustment.
	0635	Control rod pattern adjustment complete, commenced power ascension, 68% thermal power.
	0730	Commenced PCIOMR from 82% thermal power.
	1530	Stopped PCIOMR at 85% thermal power, computer out-of-service, reducing power.
	1900	Computer back in service, commenced PCIOMR from 83% thermal power.
2/12	1230	Reactor thermal power at 98%, maximum flow, rod limited.
	1800	Reactor thermal power at 97%, maximum flow, rod limited.
	2100	Reactor thermal power at 96%, maximum flow, rod limited.
2/13	0200	Reactor power at 95%, maximum flow, rod limited.
	0845	Commenced power increase with control rod pattern adjustment.
	1000	Reactor thermal power at 100%, maximum flow, rod limited.
	1538	Commenced reducing thermal power for control rod pattern adjustment.
	1700	Reactor power at 91%, increased thermal power for control rod pattern adjustment.
	1900	Commenced PCIOMR from 94% thermal power.

Significant Operational Events

Date	Time	Event
Unit 1 (Continued)		
2/14	0100	Reactor thermal power at 100%, maximum flow, rod limited.
	0125	Commenced reducing thermal power for shutdown due to problems with RHRSW air release valves.
	0245	Reactor Scram No. 170 from 47% thermal power for modifications to RHRSW air release valves.
	1025	Reactor in cold shutdown.
2/21	1800	Modifications and testing complete on RHRSW air release valves, commenced rod withdrawal for startup.
	1940	Reactor Critical No. 193.
2/22	1010	Reactor Scram (Manual) No. 171 from 8% thermal power when the high-pressure turbine first-stage pressure exceeded 142 psig with the TSV's closed. The A2 and B1 reactor trip actuators were picked up and initiated the scram, indicating that the only setpoint of PT-1-81B and 1-91A (turbine first-stage permissive) were reached.
	1500	Withdrawing control rods for startup.
	1935	Reactor Critical No. 194.
2/23	0200	Rolled T/G.
	0236	Synchronized generator, commenced power ascension.
	1600	Commenced PCIOMR from 79% thermal power.
2/24	1230	Reactor thermal power at 92%, maximum flow, rod limited.
2/25	2200	Reactor thermal power at 87%, maximum flow, rod limited, commenced reducing thermal power for control rod pattern adjustment.
2/26	0010	Reactor thermal power at 79% for control rod pattern adjustment, increasing thermal power.
	0150	Reduced thermal power from 86% to 83% for control rod pattern adjustment.
	0330	Control rod pattern adjustment complete, commenced PCIOMR from 83% power.
2/27	0100	Reactor thermal power at 100%, maximum flow, rod limited.
	1200	Reactor thermal power at 99%, maximum flow, rod limited.
2/29	2311	Reactor Scram No. 172 from 99% thermal power. It is suspected that personnel bumped panel 25-6A causing the scram.

Significant Operational Events

Date	Time	Event
		Unit 2
2/1	0001	Reactor thermal power at 100%, maximum flow, rod limited.
2/3	2330	Commenced reducing thermal power for turbine control valve test and SI's.
	2400	Reactor power at 91% for turbine control valve test and SI's.
2/4	0045	Turbine control valve test and SI's complete, commenced power descension.
	0046	Reactor power at 93%, holding for SI 4.3.A.2 (Control Rod Exercise).
	0355	SI 4.3.A.2 complete, commenced power ascension.
	0500	Comenced PCIOMR from 95% thermal power.
	0900	Reactor thermal power at 100%, maximum flow, rod limited.
	2400	Reactor thermal power at 99%, maximum flow, rod limited.
2/7	0900	Reactor thermal power at 98%, maximum flow, rod limited.
2/9	0700	Reactor thermal power at 97%, maximum flows, rod limited.
2/11	2210	Commenced reducing thermal power for "A" recirculation pump MG set brush replacement.
2/12	0200	Reactor power at 49%, "A" MG set brush replacement in progress.
	0218	"A" recirculation pump in service holding for replacement of brushes in "B" recirculation pump MG set.
	0244	Reactor power at 48%, "B" recirculation pump out-of-service for MG set brush replacement.
	0510	"B" recirculation pump in service, commenced power ascension.
	0635	Reactor power at 80% for STEAR 8211 (HPCI).
	0735	Commenced reducing thermal power for SI 4.3.B.1.a (Control Rod Coupling Integrity).
	0800	Reactor power at 72% for SI 4.3.B.1.a.
	0835	Completed SI 4.3.B.1.a, reducing thermal power for HPCI SI's.
	0900	Reactor power at 70% for HPCI SI's.
	1025	HPCI SI's complete, commenced power ascension.
	1330	Commenced PCIOMR from 72% thermal power.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 2 (Continued)		
2/13	2350	Commenced reducing thermal power from 98% for shutdown due to problems with RHRSW air release valves.
2/14	0107	Reactor Scram Manual No. 150 from 46% thermal power for modifications to RHRSW air release valves.
	1122	Reactor in cold shutdown.
2/21	1800	Modifications and testing complete on RHRSW air release valves, holding up on startup to place unit 2 main transformer in service and take spare transformer out-of-service.
	2323	Commenced rod withdrawal for startup.
2/22	0057	Reactor Scram No. 151 from 0% thermal power on high control rod worth.
	0845	Commenced rod withdrawal for startup.
	1030	Reactor Critical No. 161.
	2225	Holding up on startup due to condenser low vacuum, reactor power at 22%.
	2333	Reducing thermal power due to condenser low vacuum.
2/23	0130	Reactor power at 9%, holding due to condenser low vacuum.
	1112	Commenced rod withdrawal for startup.
	1155	Rolled main turbine.
	1209	Turbine tripped on low vacuum from 10% thermal power.
	1213	Rolled main turbine.
	1609	Synchronized generator, commenced power ascension.
2/24	1130	Commenced PCIOMR from 76% thermal power.
	1835	Stopped PCIOMR at 84% thermal power due to problems with "A" recirculation pump.
	2030	Reduced thermal power to 63% when "A" recirculation pump MG set ran back to minimum speed.
	2125	Commenced power ascension from 63%, "A" recirculation pump MG set limited.
	2200	Reactor power at 68%, holding due to "A" recirculation pump MG set problems (Bailey Controller).
2/25	0045	"A" recirculation pump MG set Bailey Controller problems resolved, commenced power ascension.
	0110	Reactor thermal power at 75% holding for turbine control valve test and SI's.
	0200	Turbine control valve test and SI's complete, commenced power ascension.
	0230	Commenced PCIOMR from 88% thermal power.
	1800	Reactor thermal power at 98%, maximum flow, rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 2 (Continued)
2/26	1000	Reactor thermal power at 95%, maximum flow, rod limited.
	1020	Commenced reducing thermal power for SI 4.3.A.2 (CRD exercise).
	1030	Reactor power at 86% for SI 4.3.A.2.
	1115	SI 4.3.A.2 complete, commenced power ascension.
	1140	Reactor thermal power at 95%, maximum flow, rod limited.
	1200	Reactor thermal power at 94%, maximum flow, rod limited.
2/29	2400	Reactor thermal power at 94%, maximum flow, rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 3
2/1	0001	End-of-cycle 5 refuel outage in progress (began September 7, 1983).
2/29	2400	End-of-cycle 5 refuel outage in progress.

12
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
UNIT Browns Ferry 1
DATE 3-1-84
COMPLETED BY T. Thom
TELEPHONE 205/729-0834

MONTH February

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>1028</u>	17	<u>-17</u>
2	<u>1014</u>	18	<u>-18</u>
3	<u>920</u>	19	<u>-17</u>
4	<u>1077</u>	20	<u>-16</u>
5	<u>1064</u>	21	<u>-13</u>
6	<u>1092</u>	22	<u>-13</u>
7	<u>1085</u>	23	<u>662</u>
8	<u>1084</u>	24	<u>965</u>
9	<u>424</u>	25	<u>890</u>
10	<u>207</u>	26	<u>968</u>
11	<u>845</u>	27	<u>1074</u>
12	<u>1037</u>	28	<u>1072</u>
13	<u>1045</u>	29	<u>1043</u>
14	<u>47</u>	30	<u></u>
15	<u>-16</u>	31	<u></u>
16	<u>-18</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. 50-260UNIT BFNP-2DATE 3-1-84COMPLETED BY T. ThomTELEPHONE 205/729-0834MONTH FebruaryDAY AVERAGE DAILY POWER LEVEL
(MWe-Net)

1	1080
2	1082
3	1082
4	1059
5	1074
6	1079
7	1061
8	1059
9	1058
10	1049
11	1032
12	736
13	997
14	4
15	-11
16	-8

DAY AVERAGE DAILY POWER LEVEL
(MWe-Net)

17	-8
18	-10
19	-11
20	-11
21	-11
22	-14
23	153
24	773
25	982
26	1028
27	1019
28	1013
29	1013
30	
31	

INSTRUCTIONS

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

14
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-296

UNIT 3

DATE 3-1-84

COMPLETED BY T. Thom

TELEPHONE 205/729-0834

MONTH February

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

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>-2</u>
18	<u>-3</u>
19	<u>-2</u>
20	<u>-3</u>
21	<u>-3</u>
22	<u>-3</u>
23	<u>-2</u>
24	<u>-2</u>
25	<u>-2</u>
26	<u>-2</u>
27	<u>-3</u>
28	<u>-3</u>
29	<u>-3</u>
30	<u></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. Compute to the nearest whole megawatt.

OPERATING DATA REPORT

DOCKET NO. 50-259
 DATE 3-1-84
 COMPLETED BY T. Thom
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry -1
 2. Reporting Period: February 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:

Notes

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>696</u>	<u>1,440</u>	<u>84,002</u>
12. Number Of Hours Reactor Was Critical	<u>480.85</u>	<u>1,208.53</u>	<u>51,014.65</u>
13. Reactor Reserve Shutdown Hours	<u>215.15</u>	<u>215.15</u>	<u>6,000.17</u>
14. Hours Generator On-Line	<u>453.13</u>	<u>1,131.10</u>	<u>49,848.74</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,363,322</u>	<u>2,988,96</u>	<u>141,546,643</u>
17. Gross Electrical Energy Generated (MWH)	<u>459,170</u>	<u>1,005,810</u>	<u>46,651,430</u>
18. Net Electrical Energy Generated (MWH)	<u>444,294</u>	<u>977,541</u>	<u>45,302,868</u>
19. Unit Service Factor	<u>65.1</u>	<u>78.5</u>	<u>59.3</u>
20. Unit Availability Factor	<u>65.1</u>	<u>78.5</u>	<u>59.3</u>
21. Unit Capacity Factor (Using MDC Net)	<u>59.9</u>	<u>63.7</u>	<u>50.6</u>
22. Unit Capacity Factor (Using DER Net)	<u>59.9</u>	<u>63.7</u>	<u>50.6</u>
23. Unit Forced Outage Rate	<u>34.9</u>	<u>19.7</u>	<u>23.7</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

25. If Shut Down At End Of Report Period, Estimated Date of Startup: _____

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

Forecast

Achieved

INITIAL CRITICALITY

INITIAL ELECTRICITY

COMMERCIAL OPERATION

OPERATING DATA REPORT

DOCKET NO. 50-260
 DATE 3-1-84
 COMPLETED BY T. Thom
 TELEPHONE 205 / 729-0834

OPERATING STATUS

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

N/A

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

Notes

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>696</u>	<u>1,440</u>	<u>78,943</u>
12. Number Of Hours Reactor Was Critical	<u>494.62</u>	<u>1,149.84</u>	<u>51,114.02</u>
13. Reactor Reserve Shutdown Hours	<u>201.38</u>	<u>290.16</u>	<u>14,190.52</u>
14. Hours Generator On-Line	<u>464.97</u>	<u>1,105.14</u>	<u>49,597.98</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,426,819</u>	<u>3,459,852</u>	<u>143,604,897</u>
17. Gross Electrical Energy Generated (MWH)	<u>478,980</u>	<u>1,139,280</u>	<u>47,736,568</u>
18. Net Electrical Energy Generated (MWH)	<u>464,527</u>	<u>1,106,575</u>	<u>46,365,178</u>
19. Unit Service Factor	<u>66.8</u>	<u>76.7</u>	<u>62.8</u>
20. Unit Availability Factor	<u>66.8</u>	<u>76.7</u>	<u>62.8</u>
21. Unit Capacity Factor (Using MDC Net)	<u>62.7</u>	<u>72.2</u>	<u>55.1</u>
22. Unit Capacity Factor (Using DER Net)	<u>62.7</u>	<u>72.2</u>	<u>55.1</u>
23. Unit Forced Outage Rate	<u>33.2</u>	<u>17.5</u>	<u>24.6</u>

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):

July, 1984 Refuel

25. If Shut Down At End Of Report Period, Estimated Date of Startup: _____

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

Forecast

Achieved

INITIAL CRITICALITY

INITIAL ELECTRICITY

COMMERCIAL OPERATION

OPERATING DATA REPORT

DOCKET NO. 50-296
 DATE 3-1-84
 COMPLETED BY T. Thom
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: 3
 2. Reporting Period: February 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>696</u>	<u>1440</u>	<u>61,368</u>
12. Number Of Hours Reactor Was Critical	<u>0</u>	<u>0</u>	<u>43,087.80</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>3878.13</u>
14. Hours Generator On-Line	<u>0</u>	<u>0</u>	<u>42,193.71</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>126,307,711</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>41,597,620</u>
18. Net Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>40,375,256</u>
19. Unit Service Factor	<u>0</u>	<u>0</u>	<u>68.8</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>68.8</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>61.8</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>61.8</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>0</u>	<u>16.4</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

25. If Shut Down At End Of Report Period, Estimated Date of Startup: August 1984

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

Forecast

Achieved

INITIAL CRITICALITY

INITIAL ELECTRICITY

COMMERCIAL OPERATION

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH February

DOCKET NO. 50-259
 UNIT NAME Browns Ferry 1
 DATE 3-1-84
 COMPLETED BY T. Thom
 TELEPHONE 205-729-0834

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
270	2/2/84	S		H					Derated for control rod pattern adjustment
271	2/9/84	F	26.20	B	3				Reactor Scram during the performance of SI 4.1.A.10
272	2/14/84	F	199.42	A	2				Reactor Scram for modifications to RHRSW air release valves
273	2/22/84	F	16.43	A	3				Reactor Scram (off line) when the high pressure turbine first stage pressure exceeded 142 PSIG with the TSV's closed
274	2/29/84	F	0.82	H	3				Reactor Scram due to possible bumping of panel 25-6A

18

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

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH FebruaryDOCKET NO. 50-260UNIT NAME 2DATE 3-1-84COMPLETED BY T. ThomTELEPHONE 205/729-0834

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
289	2/11/84	F		B					Derated for "A" & "B" Recirculation Pump MG set replacement
290	2/14/84	F	191.83	H	2				Rx Scram for Modifications on RHRSW Air Release Valves and to place main transformer in service and take spare transformer out of service
291	2/22/84	F	39.20	H	3				Rx Scram due to High Control Rod Worth

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

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH FebruaryDOCKET NO. 50-296UNIT NAME 3DATE 3-1-84COMPLETED BY T. ThomTELEPHONE 205/729-0834

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
140	2/1/84	S	696	C	4				EOC-5 Refuel Outage Continues (controlled shutdown, 9-7-83)

¹
F: Forced
S: Scheduled

²
Reason:
A-Equipment Failure (Explain)
B-Maintenance of 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

(9/77)

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of February 1984

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
2-15	RHR Service Water	Air release valve O-ARV-23-505	Remove valves and clean flange		Removed to install orifice plate	N/A	MR 155281
2-15	RHR Service Water	Air release valve O-ARV-23-525	Remove valves and clean flange		Removed to install orifice plate	N/A	MR 155282
2-15	RHR Service Water	Air release valve O-ARV-23-541	Remove valves and clean flange		Removed to install orifice plate	N/A	MR 155283
2-15	RHR Service Water	Air release valve O-ARV-23-560	Remove valves and clean flange		Removed to install orifice plate	N/A	MR 155284
2-15	RHR Service Water	Air release valve O-ARV-23-587	Remove valves and clean flange		Removed to install orifice plate	N/A	MR 155285
2-15	RHR Service Water	Air release valve O-ARV-23-590	Remove valves and clean flange		Removed to install orifice plate	N/A	MR 155286
2-03	Off-Gas System		Filter leak		Normal age and use	Leak	MR 206890 - Replaced gasket
2-05	Off-Gas System		Replace		Personnel error	Lube valve closed	MR 201603 - Replaced pump
2-15	RHR Service Water	Orifice Plates	Fabricate		None	None	MR 204663
2-14	RHR Service Water	Orifice Plates	Fabricate		None	None	MR 204654

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of February 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
2-06	HPCI	Servo Actuator	Remove and inspect servo actuator		Dirt	Sticky servo in mid-position	Cleaned and replaced servo actuator MR 150733

22

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of February 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 RECURRENT
1-20	EECW	3B & D Core Spray Pump Room Coolers 3-CLR-67-0922	Flush		Preventive maintenance		MR A207660

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 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
2/14	CO ₂ Storage fire protection & purging	0-25-296, 0-25-297, 0-25-295, 1-25-303, 3-25-287, 3-25-303	Replaced cells 1 through 12 on smoke detector panel 0-25-296, 7 through 12 on 0-25-297, 7 through 12 on 0-25-295, 1 through 6 on 1-25-303, 7 through 12 on 3-25-287, 7 through 12 on 3-25-303	None	Defective cells	None	Replaced cells MR's A216223 A216224 A216225 A216221 A216220 A216222
2/19	High-pressure fire protection	0-HS-026-0002	Replaced upper bearing in B fire pump motor	None	Unknown	Fire pump running noisy	Replaced bearing MR A261471
2/22	Radiation monitoring	0-PMP-090-00B	Replaced stack gas sample pump B fuses and motor	None	Bad motor	Stack gas sample pump B running noisy and blowing fuses	Replaced fuses and motor MR's A257189 A256297

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 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
2/16	Diesel 125VDC	1-BDGG-254-000C	Replaced nylon bolts, nuts & flatwashers with brass	None	Supplied by vendor	Broken bolt alerted EM of the problem	Replaced nylon hardware with brass MR A202259
2/10	Main steam	1-FCV-001-038	Replaced DC pilot coil	None	Coil burned out	Valve inoperable	Replaced coil MR A208090
2/12	Residual heat removal	1-MG-074-1EA	Adjusted voltage on LPCI MG set	None	Unknown	High voltage reading	Adjusted voltage MR A256371 25
2/14	Residual heat removal	1-FCV-074-0048	Replaced valve motor, replaced bearings on new motor, and performed EMI 7 on new valve and motor	Prevented shut-down cooling through the RHR system	Unknown	Site alert. LER BFRO-50-259-84012	Replaced motor, bearings, and performed EMI 7 MR A208095 A216024 A256599
2/15	Main steam	1-000-001-MSIV	Adjusted isolation valve limit switch	None	Limit switch LS-3 on FCV-1-26 was open	Relay 5AK3D dropped out	Adjusted limit switch. MR A256251
2/15	Control rod drive	1-FCV-085-039A	Adjusted limit switches on scram inlet and outlet valves on HCU's (continued)	None	Unknown	No annunciation in control room when inlet and outlet valves are open	Adjusted limit switches MR's A214556 A216607 A216606 A256605

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 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
2/8	Off-gas	Panel 25-95	Replaced the following fuses: 9FU from MIC-30 to ATM-20, 10FU from MIN-1 (red pin) to KLM-1/10, 16FU from MIC-3 to ATM-3	None	Wrong fuses	Blew one fuse	Replaced fuses MR 252188
2/9	High-pressure coolant injection	TRB-073-0054	Replaced HPCI EGM box per STEAR 82-11	None	In support of STEAR 82-11	None	Replaced EGM box MR 155500
2/12	EB heating and ventilation	2-XA-064-064B	Replaced relay 16AK64B	None	Unknown	None	Replaced relay MR 256637
2/14	Residual heat removal	2-PMP-074-0005	Replaced test switch on 2A RHR pump	None	Burned contact on test switch	2A RHR pump breaker would not close	Replaced test switch MR 257072
2/14	High pressure coolant injection	2-000-073-0000	Replaced ramp generator and calibrated new ramp generator	None	Bad ramp generator	None	Replaced ramp generator MR 208060
2/24	Temperature monitoring	2-TR-056-0004	Pulled new thermocouple cable and terminated per TACF 2-84-088-100-5	None	Bad thermocouple	Had to manually take readings from spare thermocouple	Connected spare thermocouple

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 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
2/15	Control rod drive		(continued) HCU's 58-35, 54-27, 54-47, 38-07, 38-51, 30-51, 22-39, 22-55, 18-59, 10-35, 14-47, 14-51, 06-43, 06-27, 02-35, 10-27, 30-59, 46-07, 46-11, 46-31, and 46-43				
2/21	Control rod drive	1-000-085-0000	Replaced relay	None	Relay coil burned up	Fuse failure alarm on panel 9-28	Replaced relay MR A256619

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 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
2/15	Control rod drive		(continued) HCU's 58-35, 54-27, 54-47, 38-07, 38-51, 30-51, 22-39, 22-55, 18-59, 10-35, 14-47, 14-51, 06-43, 06-27, 02-35, 10-27, 30-59, 46-07, 46-11, 46-31, and 46-43				
2/21	Control rod drive	1-000-085-0000	Replaced relay	None	Relay coil burned up	Fuse failure alarm on panel 9-28	Replaced relay MR A256619

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 19 84

[illegible]

CESS EQUIPMENT

INSTRUMENT MAINTENANCE SUMMARY

For the Month of February 1984

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
2/1	1	1-Pdt-1-25 A	Replace	None	unknown	Loss of Indication	Stear 84-07
2/1	1	2-Lm-85-85A	Repair	None	detector uncoupled	Loss of Alarm	None
2/3	76	1 ANA 76-89	Replace	None	bulb burned out	Loss of Indication	None
2/3	92	1 APRm	Replace	None	age	None	None
2/10	1	2 Pdis 1-13A	Replace	None	age	None	None
2/11	1	1-Pdt-1-25B	Replace	None	unknown	Loss of Indication	Stear 84-07
2/13	92	2-SRM A log count rate meter	Replace	None	age	None	None
2/17	92	2-APRm B meter function switch	Replace	None	age	None	None
2/23	1	1-Pdt-1-25A	Valued out, equalized, and then returned to normal	None	unknown	Loss of Indication	Stear 84-07
2/23	1	1 Pdt-1-25B	Replace	None	unknown	Loss of Indication	Stear 84-07

FIELD SERVICES SUMMARY

February 1984

Work Synopsis

Unit 3 cycle 5 outage activities were reduced during the February report period as a result of the decrease in available manpower resources which was imposed effective January 27, 1984. Major emphasis areas this month have included PO392 CRD scram discharge header modification prefabrication, RHR valve and heat exchanger maintenance as well as torus sandblasting and coating operations.

Major Work Areas

- A. Refuel Floor - The shipments of blade guides to Peach Bottom were completed during February. Inspection of new fuel was completed on February 22. Cold proof test of overhead crane was performed on February 29.
- B. Turbine - The unit 3 "C" low-pressure turbine work continued during the month. Coupling alignment on #1 and #2 was completed on February 29. Coupling #3 is presently being aligned.
- C. Other Mechanical Work -
 - 1. PO392 CRD Scram Discharge Modification work began during the month (prefabrication work). PO538 Control Rod Drive (CRD) Header Flush Connection Installation - work continued with 30% of shop prefabrication completed. CRD header discharge header work is critical path for unit 3 cycle 5 refueling outage.
 - 2. Repair work on valve 3-74-67 was begun in February. The valve stem was found broken in two places. A segment of break area was cut out for analysis. Work is continuing.

FIELD SERVICES SUMMARY

February 1984

Major Work Areas (Continued)

C. Other Mechanical Work -

3. Main Steam Relief Valves (MSRV) - Work continued at Wyle Labs. Awaiting Target Rock to supply list of required rebuild parts so contract change order can be approved.
4. Main Steam Isolation Valves (MSIV) - Of the eight MSIV's to be evaluated each outage, seven have been tested and four of these require maintenance. The four MSIV's requiring maintenance have been disassembled and are in various stages of poppet decontamination and main seat lapping.
5. Residual Heat Removal (RHR) heat exchanger work continued during February. Plugging and closing of "D" heat exchanger was completed on February 26. As of February 29, 76 of 124 plugs were installed in "B" heat exchanger.
6. Probologging of "A" and "C" string feedwater heaters was completed during the month. One tube was found to need plugging in each of the A1, A2, and C3 heaters with two tubes found to need plugging in C5. Plugging and closing of "C" string began on February 28. Probologging of 3A1 water box began on February 28 and is 50-percent complete. Some evidence of minor growth in steam erosion areas was reported.
7. Emergency Equipment Cooling Water (EECW) piping wall thickness measurements were made in an effort to determine whether replacement is needed. As of February 29, 10 of 16 measurements were made with no significant findings.

FIELD SERVICES SUMMARY

February 1984

Major Work Areas (Continued)

C. Other Mechanical Work (Continued)

8. IHSI - Preparation for IHSI work continued. The 750 MCM cable installation for power support was completed on February 23. A USQD is needed for the removal of interferences for IHSI.
9. PO709 Valve Replacement for Diesel Generators - Unit 1 and 2 prefabrication work is in progress. All shop welds are complete and PT is in progress.
10. PO616 Replace Fittings on Reactor Building Closed Cooling Water (RBCCW) to Recirculation Pump Motors - All work was completed on February 23.
11. PO450 Jet Pump Holddown Beam Changeout - This modification is being considered for deferment, awaiting outcome of UT test by General Electric on March 5. If test results are satisfactory, jet pump holddown beam changeout contract will be cancelled.
12. PO612 Installation of 1/2 inch stainless steel flex line for MSRV's continued.
13. PO547 Replace Recirculation Check Valves - Work began on February 27.
14. Hydraulic Snubbers - 10 of 13 Grinnel snubbers were tested as of February 29.
15. PO501 Modify Hanger Supports for RFWS-48 - Work continued during the month.
16. PO686 CRD Rebuild Room Drain Line - Work continued during the month.

FIELD SERVICES SUMMARY

February 1984

Major Work Areas (Continued)

C. Other Mechanical Work (Continued)

17. Local Leak Rate Test (LLRT) - Out of 167 valves requiring LLRT, 102 have been tested. Of the 102 valves, 67 have passed and 35 have failed initial testing.
18. P0684 Torus Vacuum Breaker Modification - Disassembly and shop prefabrication work continued this month.

D. Electrical/Instrumentation

1. Recirculation Motors - "A" pump motor was run satisfactorily on February 19. "B" pump motor is ready to run. Motor-generator (MG) set "A" had polarity changed and was run on February 28. MG set "B" is ready to run.
2. P0533 Torus Temperature Monitoring Devices - Conduit work continued. Work plan for sequential events recorder is in approval cycle.
3. P0422 Installation of Reactor Protection System cabinets and conduit continued during the month.
4. P0371 Low-Pressure Coolant Injection modification was completed on February 6 (wrap-up work only - the bulk of this modification was performed on a previous outage).

E. Planning and Scheduling:

1. The main thrust of the planning and scheduling effort this report period has been the development of a unit 3 cycle 5 outage schedule that reflects the remaining outage work activities in view of significant decreases in craft manpower over previous outages. The

FIELD SERVICES SUMMARY

February 1984

Major Work Areas (Continued)

E. Planning and Scheduling: (Continued)

1. (Continued)

schedule review indicated on August 1, 1984 return to service could be achieved at a 580-man trades and labor headcount given several assumptions - these include:

- a. No additions to the modifications currently scheduled for work (modification list dated February 15, 1984). This includes the assumption that there will be no significant increase in scope of existing modifications.
- b. EECW piping changeout (L1970) will not be performed (without significant effect on manpower and/or duration requirements).
- c. Additional QC inspectors will be available to support ECN P0392 (CRD Scram Discharge Header Modification) work on multiple shifts.
- d. Major LLRT valve failures will not be encountered.

2. Other planning staff efforts have included:

- a. Preparation of the unit 2 cycle 5 preliminary outage schedule.
- b. Assimilating data for the unit 1 cycle 5 post-outage report.
- c. Providing recommendations for planning staff changes that would permit a greater level of field support/involvement with regard to staging tools, materials and equipment as well as other pre-job preparation efforts that would be beneficial to the foreman.

FIELD SERVICES SUMMARY

February 1984

Major Work Areas (Continued)

F. Torus:

Torus sandblasting by Williams Contractor continued during February. Other work was as follows:

1. Torus internal modifications - painting work continued. Work was completed in bays 6 through 13 (except for touchup).
2. Attached piping and prefabrication work continued in February. Of 377 total supports, 183 are complete.
3. Work began on the new turbine decontamination facility. All old equipment was removed from the room. The floor is being stripped in preparation to paint.

G. Administrative:

The O&M budget for January was \$3,067,160 and the expenditures were \$2,710,962 with year-to-date budget being \$10,840,430 and actual year-to-date expenditures being \$12,935,014. The capital budget was \$2,799,700 and the expenditures were \$1,941,223 with year-to-date budget being \$12,155,758 and actual year-to-date expenditures being \$8,085,000. Overall budget was \$5,866,860 and the overall expenditures were \$4,652,185 with year-to-date budget being \$22,996,188 and actual year-to-date expenditures being \$21,020,015.

ADDENDUM

Attached for insertion in the January 1984 Monthly Operating Report to NRC are corrected pages, including Nuclear Plant Operating Statistics and Unit Outage and Availability (Unit 1).