

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT TO NRC

May 1, 1984 - May 31, 1984

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

Submitted by:

DE Swindell

Plant Manager

8407020378 840611
PDR ADDCK 05000259
R PDR

Operations Summary

May 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 was one reportable occurrence and two revisions to previous reportable occurrences reported to the NRC during the month of May.

Unit 1

There were no scrams on the unit during the month.

Unit 2

There were no scrams on the unit during the month.

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)

May 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	0.28849	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 $4.95E+05$ gallons of waste liquids were discharged containing approximately $9.05E-02$ curies of activities.

Operations Summary (Continued)

May 1984

Refueling InformationUnit 1

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

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

Unit 2

Unit 2 is scheduled for its fifth refueling beginning on or about August 24, 1984 with a scheduled restart date of January 23, 1985. This refueling outage will involve loading additional 8X8R (retrofit) fuel assemblies into the core, finishing the torus modification, turbine inspection, finishing piping inspection, finishing TMI-2 modifications; post-accident sampling facility tie-ins, core spray change-out, and feedwater sparger inspection.

There are 764 fuel assemblies in the reactor vessel. At the end of the month there were 248 EOC-4 fuel assemblies, 353 EOC-3 fuel assemblies, 156 EOC-2 fuel assemblies, and 132 EOC-1 fuel assemblies in the spent fuel storage pool. The present available capacity of the spent fuel pool is 601 locations.

Operations Summary (Continued)

May 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
5/1	0001	Reactor thermal power at 100-percent (%), maximum flow, rod limited.
5/5	0010	Commenced reducing thermal power for control valve test and SI's.
	0100	Reactor thermal power at 94% for turbine control valve test and SI's.
	0330	Turbine control valve test and SI's complete, commenced power ascension.
	0400	Reactor thermal power at 100%, maximum flow, rod limited.
5/12	0045	Commenced reducing thermal power for turbine control valve test and SI's.
	0200	Reactor thermal power at 91% for turbine control valve test and SI's.
	0325	Turbine control valve test and SI's complete, reducing thermal power for control rod pattern adjustment.
	0430	Reactor thermal power at 83% for control rod pattern adjustment.
	0500	Control rod pattern adjustment complete, commenced power ascension.
	0630	Commenced PCIOMR from 95% thermal power.
	0735	Commenced reducing thermal power from 97% for SI 4.3.A.2 (Control Rod Drive Exercise).
	0800	Reactor thermal power at 94% for SI 4.3.A.2.
	1015	SI 4.3.A.2 complete, commenced PCIOMR from 94% power.
	1300	Reactor thermal power at 100% maximum flow, rod limited.
5/13	0315	Commenced reducing thermal power from 100%, at load dispatchers request, load not needed.
	0500	Reactor thermal power at 82%, load not needed.
	0630	Commenced power ascension from 82% thermal power.
	0645	Commenced PCIOMR from 95% thermal power.
	1000	Reactor thermal power at 100%, maximum flow, rod limited.
5/17	1420	Commenced reducing thermal power for a control rod pattern adjustment.
	1446	Reactor thermal power at 93% for control rod pattern adjustment.
	1455	Control rod pattern adjustment complete, commenced power ascension.
	1500	Commenced PCIOMR from 95% thermal power.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
5/17 (Cont)	2105	Stopped PCIOMR at 99% power and commenced reducing power to remove "B" string low-pressure heaters from service for maintenance.
	2220	"B" string low-pressure heater out-of-service for maintenance, reactor power at 65% and reducing.
5/18	0100	Reactor thermal power at 64%, "B" string low-pressure heaters limited.
	0500	Reactor thermal power at 65%, "B" string low-pressure heaters limited.
	0545	"C" reactor feed water (RFW) pump out-of-service for maintenance, reactor power at 65%.
	0800	Reactor thermal power at 66%, "B" string low-pressure heaters and "C" RFW pump limited.
	1000	Reactor thermal power at 62%, "B" string low-pressure heaters and "C" RFW pump limited.
	1115	Commenced increasing thermal power from 58%.
	1500	Reactor thermal power at 64%, "B" string low-pressure heaters and "C" RFW pump limited.
	2215	Commenced reducing thermal power due to partial isolation on Reactor Water Cleanup (RWCU), Traversing Incore Probes System (TIPS), Drywell Floor Drain (DWFD) and Equipment Drain (ED) sump pumps, drywell air conditioning, drywell delta pressure air compressor, Pressure System Charging (PSC) supply valves, 256 continuous air monitors (CAMs) and H ₂ O ₂ analyzers, IP-2 declared.
	2225	Isolation reset, electricians found a loose wire on Primary Containment Isolation System (PCIS) reset relay.
	2240	Shutdown and IP-2 terminated, reactor thermal power at 60%.
2300	Commenced power ascension from 60% power.	
2343	"B" string low-pressure heaters back in service at 63% thermal power.	
5/19	0700	Reactor thermal power at 75% holding due to "A" string high-pressure heater problems, and "C" RFW pump.
	1245	Commenced reducing thermal power from 75% thermal power to remove "A" string high-pressure heaters from service for maintenance.
	1300	"A" string high-pressure heaters and "C" RFW pumps out-of-service for maintenance, reactor thermal power at 71%.
	1600	Reactor thermal power at 70% for maintenance on "A" string high-pressure heaters, and "C" RFW pump.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
5/19 (Cont)	1925	"C" RFW pump back in service, commenced power ascension.
	1930	"B" RFW pump taken out-of-service for maintenance, power ascension continues from 72%.
	1955	"A" high-pressure heaters back in service, power ascension continues from 73%.
	2300	Reactor thermal power at 75%, "B" RFW pump limited.
5/20	0740	"B" RFW pump back in service, reactor power at 75%.
	0755	"A" RFW pump out-of-service for maintenance, reducing thermal power.
	1200	Reactor thermal power at 74%, "A" RFW pump limited.
	2045	"A" RFW pump back in service, commenced power ascension.
	2200	Commenced PCIOMR from 84% thermal power.
5/21	2100	Reactor thermal power at 100%, maximum flow, rod limited.
	2300	Reactor thermal power at 99%, "R" factor out-of-limits.
5/22	0500	Reactor thermal power at 98%, "R" factor out-of-limits.
	1200	Reactor thermal power at 97%, "R" factor out-of-limits.
	1230	Commenced power ascension from 97% thermal power.
	1300	Reactor thermal power at 100%, maximum flow, rod limited.
5/23	0200	Reactor thermal power at 99%, "R" factor out-of-limits.
	1030	Commenced power ascension from 99% power.
	1100	Reactor thermal power at 100% maximum flow, rod limited.
	1220	Reduced thermal power to 99%, "B" recirculation pump high vibration.
	1333	Commenced power ascension from 99% power.
1400	Reactor thermal power at 100%, maximum flow, rod limited.	
5/26	0015	Commenced reducing thermal power for turbine control valve test and SI's.
	0200	Reactor thermal power at 94% for turbine control valve test and SI's.
	0300	Turbine control valve test and SI's complete, commenced power ascension.
	0400	Commenced PCIOMR from 99% thermal power.
	0500	Reactor thermal power at 100%, maximum flow, rod limited.
5/31	2400	Reactor thermal power at 100%, maximum flow, rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 2
5/1	0001	Reactor thermal power at 61%, derated to extend full cycle.
5/2	0728	Reactor thermal power at 60%, derated to extend full cycle.
5/4	0001	Reactor thermal power at 61%, derated to extend full cycle.
5/10	0001	Reactor thermal power at 60%, derated to extend fuel cycle and administrative hold because all Automatic Depressurization System (ADS) relief valve cables are routed through the same cable tray.
5/11	0001	Reactor thermal power at 59%, derated to extend full cycle and administrative hold.
5/30	0900	Reactor thermal power at 60%, derated to extend full cycle and administrative hold.
5/31	2400	Reactor thermal power at 60%, derated to extend full cycle and administrative hold.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 3
5/1	0001	End-of-cycle 5 refuel outage continues.
5/31	2400	End-of-cycle 5 refuel outage continues.

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
 UNIT 1
 DATE 6/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

MONTH May 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1075	17	1039
2	1079	18	645
3	1076	19	738
4	1090	20	796
5	1054	21	994
6	1078	22	1058
7	1073	23	1070
8	1076	24	1059
9	1075	25	1066
10	1075	26	1048
11	1073	27	1082
12	1042	28	1050
13	1043	29	1062
14	1064	30	1068
15	1080	31	1073
16	1070		

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.

11
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260
UNIT 2
DATE 6/1/84
COMPLETED BY Ted Thom
TELEPHONE 205/729-0834

MONTH May 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>617</u>	17	<u>607</u>
2	<u>615</u>	18	<u>593</u>
3	<u>611</u>	19	<u>596</u>
4	<u>633</u>	20	<u>597</u>
5	<u>627</u>	21	<u>592</u>
6	<u>591</u>	22	<u>595</u>
7	<u>618</u>	23	<u>596</u>
8	<u>619</u>	24	<u>591</u>
9	<u>620</u>	25	<u>592</u>
10	<u>603</u>	26	<u>587</u>
11	<u>600</u>	27	<u>566</u>
12	<u>601</u>	28	<u>622</u>
13	<u>600</u>	29	<u>593</u>
14	<u>589</u>	30	<u>607</u>
15	<u>502</u>	31	<u>606</u>
16	<u>597</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. 50-296UNIT 3DATE 6/1/84COMPLETED BY Ted ThomTELEPHONE 205/729-0834MONTH May 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	-3	17	-4
2	-3	18	-3
3	-3	19	-2
4	-3	20	-2
5	-2	21	-3
6	-3	22	-3
7	-3	23	-3
8	-4	24	-4
9	-4	25	-5
10	-4	26	-4
11	-4	27	-5
12	-4	28	-4
13	-2	29	-4
14	-3	30	-4
15	-4	31	-4
16	-4		

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 6/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

OPERATING STATUS

- 1. Unit Name: Browns Ferry - 1
- 2. Reporting Period: May 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>3,647</u>	<u>86,209</u>
12. Number Of Hours Reactor Was Critical	<u>744</u>	<u>3,405.28</u>	<u>53,211.40</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>225.40</u>	<u>6,010.42</u>
14. Hours Generator On-Line	<u>744</u>	<u>3,309.38</u>	<u>52,027.02</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>2,357,182</u>	<u>9,920,114</u>	<u>148,477,793</u>
17. Gross Electrical Energy Generated (MWH)	<u>786,510</u>	<u>3,332,590</u>	<u>48,978,210</u>
18. Net Electrical Energy Generated (MWH)	<u>767,289</u>	<u>3,248,425</u>	<u>47,573,752</u>
19. Unit Service Factor	<u>100</u>	<u>90.7</u>	<u>60.3</u>
20. Unit Availability Factor	<u>100</u>	<u>90.7</u>	<u>60.3</u>
21. Unit Capacity Factor (Using MDC Net)	<u>96.8</u>	<u>83.6</u>	<u>51.8</u>
22. Unit Capacity Factor (Using DER Net)	<u>96.8</u>	<u>83.6</u>	<u>51.8</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>8.4</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:

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 6-1-84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - 2
2. Reporting Period: May 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): 60%
10. Reasons For Restrictions, If Any: All Automatic Depressurization System Relief Valve Cables are routed through the same cable tray.

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>744</u>	<u>3,647</u>	<u>81,150</u>
12. Number Of Hours Reactor Was Critical	<u>744</u>	<u>3,356.84</u>	<u>53,321.02</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>290.16</u>	<u>14,190.52</u>
14. Hours Generator On-Line	<u>744</u>	<u>3,312.14</u>	<u>51,804.98</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,456,390</u>	<u>7,943,612</u>	<u>148,088,657</u>
17. Gross Electrical Energy Generated (MWH)	<u>461,560</u>	<u>2,574,720</u>	<u>49,172,008</u>
18. Net Electrical Energy Generated (MWH)	<u>448,374</u>	<u>2,505,370</u>	<u>47,763,973</u>
19. Unit Service Factor	<u>100</u>	<u>90.8</u>	<u>63.8</u>
20. Unit Availability Factor	<u>100</u>	<u>90.8</u>	<u>63.8</u>
21. Unit Capacity Factor (Using MDC Net)	<u>56.6</u>	<u>64.5</u>	<u>55.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>56.6</u>	<u>64.5</u>	<u>55.3</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>6.6</u>	<u>23.8</u>

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):
August 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	<u> </u>	<u> </u>
INITIAL ELECTRICITY	<u> </u>	<u> </u>
COMMERCIAL OPERATION	<u> </u>	<u> </u>

OPERATING DATA REPORT

DOCKET NO. 50-296
 DATE 6/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - 3
 2. Reporting Period: May 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>3,647</u>	<u>63,575</u>
12. Number Of Hours Reactor Was Critical	<u>0</u>	<u>0</u>	<u>43,087.80</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>3,878.13</u>
14. Hours Generator On-Line	<u>0</u>	<u>0</u>	<u>42,193.71</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>126,307,711</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>41,597,620</u>
18. Net Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>40,375,256</u>
19. Unit Service Factor	<u>0</u>	<u>0</u>	<u>66.4</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>66.4</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>59.6</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>59.6</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

DOCKET NO. 50-259
 UNIT NAME 1
 DATE 6/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH May 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
281	4/17/84	F		B					Derated for "B" string low-pressure heater maintenance.

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 (NURIG-0161)

5 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-260
 UNIT NAME 2
 DATE 6/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

REPORT MONTH May 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
292	5/1/84	S		H					Derated to extend fuel cycle into August 1984.
293	5/10/84	S		H					Derated to extend fuel cycle and administrative hold because all Automatic Depressurization System relief valve cables are routed through the same cable tray.

¹
 F- Forced
 S- Scheduled

²
 Reason:
 A-Equipment Failure (Explain)
 B-Maintenance or Test
 C-Refueling
 D-Regulatory Restriction
 E-Operator Training & License Examination
 F-Administrative
 G-Operational Error (Explain)
 H-Other (Explain)

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

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

⁵
 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-296
 UNIT NAME 3
 DATE 6/1/84
 COMPLETED BY Ted Thom
 TELEPHONE 205/729-0834

REPORT MONTH May 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
140	5/1/84	S	744	C	4				End-of-cycle refuel outage continues. (Controlled shutdown 9/7/83)

¹
 F - Forced
 S - Scheduled

²
 Reason:
 A-Equipme... (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)

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of May 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
1984 5/25	Radiation monitoring	O-PMP-90-152A	Replace fuses	None	Improper operation	Sample pump not operable. Low flow alarm	Task force organized to resolve recurring problem. MR 268030
5/28	Standby diesel generators	O-PX-82-00C (NVR)	Replace relay	None	Bad coil	Relay inoperable	Replaced bad relay. MR 267385
5/30	Standby diesel generators	O-RLY-82-00B	Replace relay	None	Bad relay	Relay inoperable	Replaced bad relay. MR 252792

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of May 19 84

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
1984 5/9	Control rod drive	1-LA-85-85B	Replace printed circuit card	None	Bad card	Alarm	Replaced bad card. MR 265038
5/19	Associated electrical systems	1-RLY-57-16AK20	Replace coil	None	Bad coil	Relay inoperable	Replaced bad relay. MR 268034 LER BFRO-50-259/ 84023

BRUSS FERRY NUCLEAR PLANT UNIT 2
 ELECTRICAL MAINTENANCE SUMMARY
 For the Month of May 19 84

CSSC EQUIPMENT

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
1984 5/4	Reactor protection	2-RLY-99-5AK-5C	Replace relay	None	Bad relay	Relay inoperable	Replaced bad relay. MR 268302
5/5	High pressure fire protection	2-BB2-26-105CT	Remounted smoke detector	None	Unknown	Alarm in control room	Remounted detector. MR 268304

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of May 19 84

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
1984 3/28	Control rod drive	3-HCV-85-50-47	Replace switch	None	Bad switch	Switch not operable during performance of EMI 50	Replaced bad switch. MR 155983
3/28	Control rod drive	3-HCU-85-46-47	Replace switch	None	Bad switch	Switch not operable during performance of EMI 50	Replaced bad switch. MR 155982
4/30	Control rod drive	3-PS-85-34-(46-11)	Replace level switch "O"-ring	None	Bad "O"-ring	Nitrogen leaking	Replaced bad "O"-ring. MR 254144
4/30	Control rod drive	3-LS-85-34-(50-27)	Replace level switch "O"-ring	None	Bad "O"-ring	Nitrogen leaking around "O"-ring	Replaced bad "O"-ring. MR 254161
5/1	Reactor water recirculation	3-FCV-68-33	Replace coil	None	Bad coil	Blowing fuses on Rx MOV Bd 3C	Replaced bad coil. MR 269875
5/7	Standby diesel generator	3-PMP-82-3A	Replace motor	None	Bad motor bearings	Pump motor making noises	Replaced bad lube oil pump motor. MR 269873
5/7	CO ₂ storage fire protection	3-00-39-00 Cardox unit	Replaced expansion valve	None	Bad valve	Cardox unit not cooling	Replaced bad expansion valve. MR 147355

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of May 19 84

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
1984 5/11	Air conditioning	3-AHU-31-0104	Replace contacts	None	Contacts not making up properly	Air conditioning unit not cooling	Replaced bad contact MR 254308
5/14	Reactor core isolation cooling	3-RLY-72-K12 PNL-25-31	Replace relay	None	Bad relay	Relay not timing correctly	Replaced bad relay. MR 254305
5/18	250VDC System	3-CHGA-248-03EB	Replace recording voltmeter	None	Bad voltmeter	Low reading on voltmeter	Replaced bad voltmeter. MR 217298
5/21	CO ₂ storage & fire protection	3-TA-39-110	Replace cable tray heat detector	None	Bad heat detector (cable found cut in two)	Alarm will not clear	Replaced cable tray heat detector. MR 252885
5/23	Standby diesel generator	3-SCO-82-3ED (controls)	Replace speed sensing switch	None	None	None	Replaced old type speed sensing switch with solid-state type (more reliable). MR 254313
5/29	4kV shut-down boards & busses	3-RLY-211-27R/53CX (HFA relay)	Replace coil	None	None	None	Replace with new type coil. MR 254771

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of May 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
1984 5/29	4kV Shut-down boards & busses	3-RLY-211- BBRB-1	Replace coil	None	None	None	Replaced coil with new type. MR 254758
5/30	4kV Shut-down boards & busses	3-RLY-211- CASB-2	Replace coil	None	None	None	Replaced coil with new type. MR 254764

BROWNS FERRY NUCLEAR PLANT UNIT 1
 MECHANICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

For the Month of May 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
5-11	Control Rod Drive System	1-PRP-85-0001	Replace Coupling	None	Normal age and use	Worn Coupling	MR A-253352 MR A-209481
5-23	High Pressure Coolant Injection (HPCI)	1-TRB-73-0054	Change out oil HPCI turbine	None	Water in oil	Contaminated oil	MR A-206374
5-25	Reactor Core Isolation Cooling System(RCIC)	1-SC-71-0010	Change out servo	None	Normal age and use	Servo leaking at seal	MR A-253734
5-25	Reactor Core Isolation Cooling System(RCIC)	1-TRB-71-0009	Change out oil in RCIC turbine		Preventative Maintenance	N/A	MR A-260373
5-25	Reactor Core Isolation Cooling System(RCIC)	1-FCV-71-0010	Change out carbon rings and stems	None	Normal age and use	RCIC steam valve packing leaking	MR A-264071

MECHANICAL MAINTENANCE SUMMARY

For the Month of May 19 84

CSSC EQUIPMENT

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
5-20	Standby Diesel Generator System (82)	3-DC-82-0030	Replace flex hose	None	Normal Age and Use	None	MR A-155333
5-21	Standby diesel Generator System	3-DC-82-0030	Clean Cooler after prob clog, reinstall heads & piping	None	None, Preventative Maintenance	None	MR A-260300

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of May 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
5-3	High Pressure Fire Protection (26)	0-HCV-26-0572	Replace Valve	None	Age and raw water	Valve leaking thru	MR A-253354
5-2	High Pressure Fire Protection	0-SRV-26-0573	Repair Valve	None	Age and raw water	Valve leaking thru	MR A-260362

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
MAY 1984

I. Work Synopsis

Unit 3 cycle 5 outage activities continued through day number 268 by the end of the May report period. Major emphasis areas this month have included P0392 CRD Scram Discharge Header Modification, MSIV Maintenance; P0399 Instrument and Control Bus Modification, and induction heat stress improvement (IHSI) of selected weld joints, as well as work on the refuel floor and in the torus. The following is a summary of the major events during this work period.

A. Critical Path Activities

1. P0392 CRD Scram Discharge Header Modification - Piping and valve tagging was completed on May 5, 1984. Hydrostatic test of the headers was completed on May 8, 1984. Platform work is continuing.
2. P0392 CRD Scram Discharge Header Hanger/Support Modification - Of 119 hangers, 82 have been completed with 17 having greater than 75-percent of their work complete. Many of the 37 incomplete hangers are awaiting FCR resolutions. Detailed breakdown is as follows:
 - a. Of twelve locations requiring inspection of existing hangers, 11 are complete.
 - b. Of 47 locations requiring removal only, 40 are complete.
 - c. Of 18 locations requiring removal and installation of new hangers, 17 are complete.
 - d. Of 38 locations requiring new hangers, 12 are complete.
 - e. Of four locations requiring a modification to an existing hanger, two are complete.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
MAY 1984

A. Critical Path Activities (Continued)

3. PO392 (Instrumentation) - This work is continuing with pulling and terminating of cable.
4. PO399 Instrument and Control Bus Modification - This work is continuing with the running of conduit and pulling of cable.
5. MSIV Maintenance - This work is continuing with reassembly being started on several of the valves. PO614 Stem Modification, was reported complete on May 20.

B. Refuel Floor

PO334 Changing Air Compressor on Platform was completed. PO027 Removal of Old Racks in Preparation for High Density Fuel Storage Rack Installation was completed on May 18. Fuel pool shuffle work began on May 22 and 351 of 930 moves had been completed by month end (one shift per day). Emphasis has been started on scheduling the repair of the jet pump nozzle which was found cracked during inspection. This work would involve a possible drain down of the reactor vessel.

C. Balance of Plant

Work continued on "C" Residual Heat Removal (RHR) heat exchanger. Eddy current testing revealed seven tubes to require plugging. The tubes were plugged and heat exchanger closed by the end of the month. Final torque and installation of drain piping are still needed to complete work. The condenser work was reported complete on May 3.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
MAY 1984

D. Turbine

The generator air test was completed on May 21. Replacement of the worn wheels on unit 3 turbine building crane was begun during May. Two of the four wheels have been completed.

E. Induction Heat Stress Improvement (IHSI)

The IHSI process was completed during May. The final recirculation weld was completed on May 15. The final RHR weld was treated on May 17. The final RWCW weld was completed on May 25 and the preparations for the GE contractor to move out began.

F. Other Mechanical Work

1. Diesel Generators - L1970/P0709 - EECW piping and valve changeout was completed on "3D" and "3C" diesels. Work began on "3B" diesel on May 30 and is continuing. Work on "3A" scheduled to start following the completion of "3B."
2. Hydraulic Snubbers - This work continued during the month.
3. MSRV's - Installation of valves and solenoids was completed. P0612, Installation of 1/2-inch SS flex line, is needed for completion. Six of 13 hangers have been designed for P0612 while material is being obtained for fabrication.
4. P0689 and P0691 - 64 series valves. This work is continuing and awaiting delivery of O-rings.
5. P0688 and P0690 Modify valves 76-18/19. This work continued during the month. Both valves were electrically hooked up May 25, 1984.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
MAY 1984F. Other Mechanical Work (Continued)

6. P0695 - Modify valves 84-8A, 8B, 8C, and 8D. This work continued during the month.
7. L2079 - H₂O₂ Modification. This work began during May. Work was temporarily delayed due to need for 1/2 inch pipe caps. These caps were received May 30 and work resumed.
8. P0684 Drywell Torus Vacuum Breakers - This work is continuing.
9. P0569 Replace RPV Head Vent Valves - Work continued during the month.
10. Repaired RHR suction valves 74-05/88. Both valves were stuck in open position.
11. Valves 77-2A/2B and 77-15A/15B passed Local Leak Rate Test (LLRT).
12. Valves 71-32/592 passed LLRT.
13. Valves 73-24/609 passed LLRT.
14. Replaced seals on unit 2 "C" RHR pump seal cooler heat exchanger on May 3.
15. Repaired leakage on unit 2 "A" RHR heat exchanger. A Limiting Condition of Operation (LCO) began on May 20
16. P0730 Head Spray Piping Removal - Hold order established to begin piping removal on May 28.

G. Electrical/Instrumentation

1. Diesel Generators - Completed modifications P0185 Rewiring of Diesel Protective Circuit, P0275 Degraded Voltage Relay Replacements, and P0585 Speed Sensing Device on "3D" and "3C" diesels. Work has started on "3E."

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
MAY 1984G. Electrical/Instrumentation (Continued)

2. EMI 71 Motor Maintenance - Core spray "3B" and "3C" motors were completed on May 2. Closed Cooling Water (CCW) pump motors "3A" and "3B" were completed on May 5. Raw Cooling Water (RCW) pump motors "3B" and "3C" were completed May 4. RHR service water pump motor "3A" was completed on May 15. High Temperature Circulation pump motors "A" and "B" were completed on May 16. Five motors remain to be tested for this outage.
3. EMI 7 Electrical Board Maintenance - Five breakers remain this outage.
4. P0415 Reactor Pressure Vessel Feedwater Nozzles - This work is continuing.
5. P0322/323 Torus Level Transmitters - Work is continuing. Awaiting receipt of level transmitters. Expected date of delivery is June 15.
6. P0631 RHRSW Tunnel Radiation Monitors - Work plan is in review cycle.
7. P0533 Install Torus Temperature Devices - Work continued but is delayed pending the completion of P0126, installation of inverters, for power.
8. Inspected EHC system cables for damage due to fluid spills.
9. TIP Indexer Maintenance - Sealing started on May 13.
10. P0284 Acoustic Monitors - This modification began during the month and is continuing.
11. LLRT was completed on the electrical penetrations of the TIP ball and check valves

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
MAY 1984

H. Torus

Torus work was as follows:

1. Torus attached piping support installation continued. By the end of the month, 356 of 456 supports were complete.
2. Repair of valve 74-722 was completed on May 6.
3. Touch-up painting of torus was completed.
4. Torus fill was completed on May 26.
5. NRC 79-02 hanger inspection started during the month with 95 of 362 complete.

I. Planning and Scheduling

Planning and scheduling efforts during this report period emphasized maintaining unit 3 cycle 5 network of activities while closely monitoring critical path activities. Unit 2 cycle 5 planning efforts are in progress. However, lack of confirmation on modifications to be worked coupled with lack of information on the scope of work involved with selected modifications is hampering this effort.

J. Administrative

The overtime percentage for the month of April was 17-percent with 115,829 straight time hours and 23,635 overtime hours. As of April 30, 1984, year-to-date overtime percentage was 20-percent, with 917,086 straight time hours and 227,391 overtime hours. The overall goal of the overtime percentage is 17-percent.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
MAY 1984

J. Administrative (Continued)

The Outage & Maintenance budget for April was \$2,576,410 and the expenditures were \$2,494,223 with year-to-date budget being \$19,109,384 and actual year-to-date expenditures being \$19,169,934.

The capital budget was \$3,194,000 and the expenditures were \$6,446,281 with year-to-date budget being \$24,662,900 and actual year-to-date expenditures being \$25,727,507. Overall budget was \$5,770,510 and the overall expenditures were \$8,940,504 with year-to-date budget being \$43,772,284 and actual year-to-date expenditures being \$44,897,442.