

TENNESSEE VALLEY AUTHORITY
DIVISION OF NUCLEAR POWER
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT TO NRC
July 1, 1984 - July 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

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Operations Summary

July 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 five reportable occurrences and no revisions to previous reportable occurrences reported to the NRC during the month of July.

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)

July 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	0.00609	0.00490	0.00403
Feedwater nozzle	0.29185	0.21223	0.15429
Closure studs	0.23676	0.17302	0.13233

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

Common System

Approximately $6.82E+05$ gallons of waste liquids were discharged containing approximately $7.47E-01$ curies of activities.

Operations Summary (Continued)

July 1984

Refueling Information

Unit 1

Unit 1 is scheduled for its sixth refueling beginning on or about March 22, 1985 with a scheduled restart date of October 8, 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 September 14, 1984 with a scheduled restart date of January 31, 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, 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 61 locations. All old racks have been removed from the pool and new HDR's are being installed.

Operations Summary (Continued)

July 1984

Unit 3

Unit 3 shutdown for its fifth refueling outage on September 7, 1983, with a scheduled restart date of September 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
7/01	0001	Reactor thermal power at 86-percent (%), power ascension in progress
	0030	Commenced PCIOMR from 86%, thermal power
	1230	Reactor thermal power at 91%, maximum flow, rod limited
	1600	Reactor thermal power at 90%, maximum flow, rod limited
	1900	Reactor thermal power at 89%, maximum flow rod limited
	2100	Reactor thermal power at 88%, maximum flow rod limited
7/02	0100	Reactor thermal power at 87%, maximum flow rod limited
	1000	Reactor thermal power at 86%, maximum flow rod limited
7/03	2340	Commenced reducing thermal power for control rod pattern adjustment.
	2400	Reactor thermal power at 76% for control rod pattern adjustment, increasing thermal power.
7/04	0425	Commenced power ascension from 86% thermal power.
	0530	Commenced PCIOMR from 91% thermal power.
	1605	Reactor thermal power at 100%, maximum flow, rod limited.
7/07	0200	Commenced reducing thermal power for turbine control valve test and SI's.
	0210	Reactor thermal power at 93% for turbine control valve test and SI's.
	0340	Turbine control valve test and SI's complete, commenced PCIOMR.
	0730	Reactor thermal power at 100%, maximum flow, rod limited.
7/13	2200	Commenced reducing thermal power for a control rod sequence exchange.
7/14	0200	Reactor thermal power at 55% for control rod sequence exchange.
	0515	Control rod sequence exchange in progress, increasing thermal power.
	1011	Control rod sequence exchange complete, commenced power ascension from 64% thermal power.
	1100	Commenced PCIOMR from 71% thermal power.
	1310	"R" factor out-of-limits, reduced thermal power from 74% to 73%.
	1700	"R" factor back in limits, commenced PCIOMR from 73% power.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 1 (Continued)		
7/15	2130	Reactor thermal power at 100%, maximum flow, rod limited.
	0215	Commenced reducing thermal power at request of load dispatcher.
	0230	Reactor thermal power at 90% at request of load dispatcher.
	0240	Commenced power ascension at request of load dispatcher.
	0500	Reactor thermal power at 100%, maximum flow, rod limited.
7/19	0215	Commenced reducing thermal power at request of load dispatcher.
	0230	Reactor thermal power at 90% at request of load dispatcher.
	0240	Commenced power ascension at request of load dispatcher.
	0500	Reactor thermal power at 100%, maximum flow, rod limited.
7/21	2227	Commenced reducing thermal power for control rod pattern adjustment.
7/22	0100	Reactor thermal power at 79% for control rod pattern adjustment, increasing thermal power.
	0255	Control rod pattern adjustment complete, commenced power ascension from 85% thermal power.
	0430	Commenced PCIOMR from 86% thermal power.
	1730	Reactor thermal power at 100%, maximum flow, rod limited.
7/28	0030	Commenced reducing thermal power for turbine control valve test and SI's.
	0050	Reactor thermal power at 94% for turbine control valve test and SI's.
	0303	Turbine control valve test and SI's complete, commenced power ascension.
	0700	Reactor thermal power at 100%, maximum flow, rod limited.
7/30	1630	Commenced reducing thermal power due to condensate demineralizer problems.
	1800	Reactor thermal power at 90%, condensate demineralizer limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 1 (Continued)
7/30	1945 1955 2230	Commenced power ascension from 90% thermal power. Commenced PCIOMR from 96% thermal power. Reactor thermal power at 100%, maximum flow, rod limited.
7/31	2400	Reactor thermal power at 100%, maximum flow, rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 2		
7/01	0001	Reactor thermal power at 59% to extend fuel cycle, and administrative hold because all ADS valve cables are routed through the same cable tray.
7/03	2300	Reactor thermal power at 60% to extend fuel cycle and administrative hold.
7/06	2300	Reactor thermal power at 61% to extend fuel cycle and administrative hold.
7/08	0200	Reactor thermal power at 60% to extend fuel cycle and administrative hold.
7/12	2200 2400	Commenced reducing thermal power to extend fuel cycle. Reactor thermal power at 55% to extend fuel cycle.
7/14	1600	Reactor thermal power at 56% to extend fuel cycle.
7/16	0525 0600 1400 1900 2100	Increasing thermal power from 56%. Reactor thermal power at 61% to extend fuel cycle and administrative hold (ADS valve control cables). Reactor thermal power at 60% to extend fuel cycle and administrative hold. Reducing thermal power to extend fuel cycle. Reactor thermal power at 53% to extend fuel cycle.
7/17	1315 1600 1730 2100	Commenced power ascension from 53%. Reactor thermal power at 61% to extend fuel cycle and administrative hold. Reducing thermal power from 61%. Reactor thermal power at 51% to extend fuel cycle.
7/18	1025 1100 1800 2100	Commenced power ascension from 51% thermal power. Reactor thermal power at 60% to extend fuel cycle and administrative hold. Commenced reducing thermal power to extend fuel cycle. Reactor thermal power at 51% to extend fuel cycle.
7/19	1230 1300	Increasing thermal power from 51%. Reactor thermal power at 53% to extend fuel cycle.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
Unit 2 (Continued)		
7/21	1215	Commenced power ascension from 53% thermal power.
	1500	Reactor thermal power at 61% to extend fuel cycle and administrative hold.
	2000	Reactor thermal power at 60% to extend fuel cycle and administrative hold.
7/22	1300	Reactor thermal power at 59% to extend fuel cycle and administrative hold.
7/23	0700	Reactor thermal power at 60% to extend fuel cycle and administrative hold.
	0900	Commenced power ascension from 60% thermal power (administrative hold lifted).
	1300	Reactor thermal power at 75%, maximum flow, rod limited.
	1700	Reactor thermal power at 75%, maximum flow, rod limited.
	2100	Reactor thermal power at 73%, maximum flow, rod limited.
7/24	0100	Reactor thermal power at 72%, maximum flow, rod limited.
	0700	Reactor thermal power at 71%, maximum flow, rod limited.
	1800	Reactor thermal power at 70%, maximum flow, rod limited.
7/28	2300	Reactor thermal power at 69%, maximum flow, rod limited.
7/31	2400	Reactor thermal power at 69%, maximum flow, rod limited.

Significant Operational Events

<u>Date</u>	<u>Time</u>	<u>Event</u>
		Unit 3
7/1	0001	End-of-cycle 5 refuel outage continues.
7/31	2400	End-of-cycle 5 refuel outage continues.

11
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
UNIT One
DATE 8/1/84
COMPLETED BY Ted Thom
TELEPHONE (205)729-0834

MONTH July 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>907</u>	17	<u>1046</u>
2	<u>836</u>	18	<u>1049</u>
3	<u>871</u>	19	<u>1047</u>
4	<u>975</u>	20	<u>1046</u>
5	<u>1017</u>	21	<u>1026</u>
6	<u>1018</u>	22	<u>969</u>
7	<u>1028</u>	23	<u>1046</u>
8	<u>1048</u>	24	<u>1046</u>
9	<u>1034</u>	25	<u>1043</u>
10	<u>1043</u>	26	<u>1041</u>
11	<u>1045</u>	27	<u>1056</u>
12	<u>1040</u>	28	<u>1036</u>
13	<u>1018</u>	29	<u>1048</u>
14	<u>685</u>	30	<u>1034</u>
15	<u>955</u>	31	<u>1048</u>
16	<u>1041</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.

12
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260
UNIT Two
DATE 8/1/84
COMPLETED BY Ted Thom
TELEPHONE (205)729-0834

MONTH July 1984

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>585</u>	17	<u>510</u>
2	<u>582</u>	18	<u>521</u>
3	<u>571</u>	19	<u>492</u>
4	<u>590</u>	20	<u>497</u>
5	<u>578</u>	21	<u>534</u>
6	<u>574</u>	22	<u>578</u>
7	<u>589</u>	23	<u>682</u>
8	<u>593</u>	24	<u>709</u>
9	<u>585</u>	25	<u>694</u>
10	<u>584</u>	26	<u>694</u>
11	<u>585</u>	27	<u>731</u>
12	<u>583</u>	28	<u>701</u>
13	<u>582</u>	29	<u>702</u>
14	<u>530</u>	30	<u>698</u>
15	<u>533</u>	31	<u>687</u>
16	<u>556</u>		

INSTRUCTIONS

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

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-296
 UNIT Three
 DATE 8/1/84
 COMPLETED BY Ted Thom
 TELEPHONE (205)729-0834

MONTH July 1984

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

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 8-1-84
 COMPLETED BY Ted Thom
 TELEPHONE (205)729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - One
2. Reporting Period: July 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>5,111</u>	<u>87,673</u>
12. Number Of Hours Reactor Was Critical	<u>744</u>	<u>4,629.10</u>	<u>54,435.22</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>465.58</u>	<u>6,250.60</u>
14. Hours Generator On-Line	<u>744</u>	<u>4,508.95</u>	<u>53,226.59</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>2,383,044</u>	<u>13,799,488</u>	<u>152,357,167</u>
17. Gross Electrical Energy Generated (MWH)	<u>768,640</u>	<u>4,556,830</u>	<u>50,202,450</u>
18. Net Electrical Energy Generated (MWH)	<u>748,596</u>	<u>4,437,358</u>	<u>48,762,685</u>
19. Unit Service Factor	<u>100</u>	<u>88.2</u>	<u>60.7</u>
20. Unit Availability Factor	<u>100</u>	<u>88.2</u>	<u>60.7</u>
21. Unit Capacity Factor (Using MDC Net)	<u>94.5</u>	<u>81.5</u>	<u>52.2</u>
22. Unit Capacity Factor (Using DER Net)	<u>94.5</u>	<u>81.5</u>	<u>52.2</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>11.2</u>	<u>22.9</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):

	Forecast	Achieved
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

OPERATING DATA REPORT

DOCKET NO. 50-260
 DATE 8-1-84
 COMPLETED BY Ted Thom
 TELEPHONE (205)729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - Two
2. Reporting Period: July 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): 60%
10. Reasons For Restrictions, If Any: All automatic depressurization system relief valve cables are routed through same cable tray.

Notes

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>744</u>	<u>5,111</u>	<u>82,614</u>
12. Number Of Hours Reactor Was Critical	<u>744</u>	<u>4,810.92</u>	<u>54,775.10</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>300.08</u>	<u>14,200.44</u>
14. Hours Generator On-Line	<u>744</u>	<u>4,760.59</u>	<u>53,253.43</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>1,508,141</u>	<u>10,834,215</u>	<u>150,979,260</u>
17. Gross Electrical Energy Generated (MWH)	<u>463,030</u>	<u>3,465,920</u>	<u>50,663,208</u>
18. Net Electrical Energy Generated (MWH)	<u>447,449</u>	<u>3,366,978</u>	<u>48,225,381</u>
19. Unit Service Factor	<u>100</u>	<u>93.1</u>	<u>64.5</u>
20. Unit Availability Factor	<u>100</u>	<u>93.1</u>	<u>64.5</u>
21. Unit Capacity Factor (Using MDC Net)	<u>56.5</u>	<u>61.9</u>	<u>55.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>56.5</u>	<u>61.9</u>	<u>55.3</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>5.0</u>	<u>23.3</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): <u>September 1984 - refuel</u>			

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 8-1-84
 COMPLETED BY Ted Thom
 TELEPHONE (205)729-0834

OPERATING STATUS

- 1. Unit Name: Browns Ferry - Three
- 2. Reporting Period: July 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>5,111</u>	<u>65,039</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>40,175,256</u>
19. Unit Service Factor	<u>0</u>	<u>0</u>	<u>64.9</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>64.9</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>58.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>58.3</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	<u> </u>	<u> </u>
INITIAL ELECTRICITY	<u> </u>	<u> </u>
COMMERCIAL OPERATION	<u> </u>	<u> </u>

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-259
 UNIT NAME One
 DATE 8/1/84
 COMPLETED BY Ted Thom
 TELEPHONE (205)729-0834

REPORT MONTH July 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
288	7/13/84	S		H					Derated for control rod sequence exchange

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)

(9/77)

⁵
 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-260
 UNIT NAME Two
 DATE 8/1/84
 COMPLETED BY Ted Thom
 TELEPHONE (205) 729-0834

REPORT MONTH July 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
296	7/1/84	S		H					Derated to extend fuel cycle and administrative hold because all ADS relief valve cables are routed through the same cable tray.
297	7/13/84	S		H					Derated to extend fuel cycle.
298	7/16/84	S		H					Same as 296.
299	7/16/84	S		H					Same as 297
300	7/17/84	S		H					Same as 296
301	7/17/84	S		H					Same as 297
302	7/18/84	S		H					Same as 296
303	7/18/84	S		H					Same as 297
304	7/21/84	S		H					Same as 296

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)

(9/77)

⁵
 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-296
 UNIT NAME Three
 DATE 8/1/84
 COMPLETED BY Ted Thom
 TELEPHONE (205)729-0834

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

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)

(1/77)

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 Exhibit I - Same Source

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of July 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 6/11	Standby Diesel Generator	0-RLY-82-NVR	Replaced NVR relay	None	Vendor recommendation	Possible inoperability of diesel generator A loss of voltage alarm	Installed new model NVR relay. MR # 254813
6/27	4kV shut-down board and buses	0-BDAA-211-A	Replace test trip and close station	None	Bad trip and close station pushbutton	Not able to test trip and close breaker in compt. 17 of 4kV shutdown board A	Replaced bad trip and close station. MR # 266174 20
7/13	CO ₂ storage fire protection & purging	0-BAT-39-25-305	Replaced battery	None	Bad battery	Low cell voltage	Replaced bad battery MR # 322740
7/25	Air-conditioning	0-CHR-031-0007B	Replace solenoid valve on chiller purge unit.	None	Bad solenoid on purge unit	Valve inoperable	Replaced bad solenoid valve. MR # 322846
7/26	Ventilating	0-FS-30-60B	Replace flow switch	None	Paddle missing	Flow switch inoperable	Replaced bad flow switch. MR # 266192

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of July 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 1/27	Raw service water	1 & 2-ANN-25-41A	Replace AFL air flow switch	None	Bad switch	Annunciation	Replaced bad switch. MR # 207922
1/27	Raw service water	1 & 2-ANN-25-41C	Replace AFL air flow switch	None	Bad switch	Annunciation	Replaced bad switch. MR # 207923
3/9	Air conditioning	1-FAN-31-161A	Replace fan motor	None	Bad fan motor	Fan motor trips on overload	Replaced bad fan motor. MR # 140633
3/13	Unit preferred 120VAC	1-000-252-000	Replace switch voltmeter on unit preferred local control cabinet	None	Bad switch voltmeter	Annunciation	Replaced bad switch voltmeter. MR # 267850
5/30	Standby diesel generator	1 & 2-GEN-82-B	Replace overload relay	None	Bad overload relay	Lube oil circulating pump will not run	Replaced bad overload relay. MR # 252792
6/22	RHR service water	1-LA-23-80A	Replace level switch	None	Bad level switch	Annunciation	Replaced bad level switch with new model switch. MR # 265985
6/26	Main steam	1-FCV-1-1-55	Replace relay coil	None	Bad coil	FCV-1-1-55 will not operate from control switch on pnl 9-3	Replaced bad coil MR # 267386
6/27	Main steam	1-PCV-1-4	Test	None	Unknown	1-PCV-001-0004 operated prematurely during unit startup	Valve tested O.K. MR # 266175

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of July 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 6/30	Control rod drive	1-HS-85-48	Replace springs in switch	None	Broken springs	HS-85-48 inoperable	Replaced bad switch. MR # 257451
7/10	Residual heat removal	1-MG-74-IDN	Replaced motor and generator	None	Failed generator	Motor-generator set inoperable	Installed new motor and generator. MR # 263352
7/16	Reactor bldg. heating & ventilation	1-FAN-64-12C	Replace breaker	None	Bad breaker	Fan trips off	Replace bad breaker. MR # 266027
7/28	RHR service water	1-MTR-23-8	Replace R1 relay	None	Bad relay	C1 RHRSW pump failed to start during performance of SI 4.9.A.3.a	Replaced bad relay. MR # 322596

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of July 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 7/12	Unit preferred 120VAC	2-GEN-252-2	Replace exciter belt	None	Bad belt	Unit preferred MG set inoperable	Installed new exciter belt. MR # 322568

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of July 19 84

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Prevent Recurrence
1984 3/8	Standby diesel generator	3-RLY-82-TRB-3	Replace relay	None	Cracked coil spool	None	Replaced bad relay. MR # 254754
3/21	4kV shut-down boards & buses	3-RLY-211-275/3CX	Replace relay coil	None	Cracked coil spool	None	Replaced bad relay coil. MR # 254769
4/11	4kV shut-down board & buses	3-RLY-211-Spare	Replace relay coil	None	Cracked coil spool	None	Replaced bad relay coil. MR # 254774
7/1	CO ₂ storage, fire protection & purging	3-TA-39-113	Replace kl relay	None	Bad relay	Annunciation	Replaced bad relay. MR # 257739 ²⁴
7/9	Radiation monitoring	3-CAM-90-251	Replace power switch	None	Toggle switch burned up	Possible fire hazard	Replaced bad switch. MR # 257642
7/10	Control rod drive	3-FCV-85	Replace solenoids	None	Coils in scram pilot solenoid burned up	Valve inoperable	Replaced bad solenoids. MR # 257645
7/26	RHR service water	3-RHRSW-Pump Start	Replace R1 relay	None	Bad relay	RHR service water pumps B1, C3, & D1 did not auto start during SI 4.2.B-39A	Replaced bad relay. MR # 312616
7/27	Battery boards 1,2,3 & 4	3-FU-280-3C	Replaced incorrect fuses	None	Oversized fuses	Inadequate fuse protection for I&C bus	Replaced with correct fuses. MR # 254952
7/28	Residual heat removal	3-MTR-74-39	Replaced secondary disconnect block	None	Bad secondary block	No green light when breaker is racked in; does have green light in test position.	Replaced secondary disconnect block. MR # 314317

BROWNS FERRY NUCLEAR PLANT UNIT CommonCSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of July 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
7/3	85	0-ACU-85-3847	Rebuild water accumulator and store for spare	None	None	N/A	N/A

BROWNS FERRY NUCLEAR PLANT UNIT 2CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of July 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
6/25	85	2-HCV-85-22-07	Repair water accumulator	None	Defective O-rings	Leak	Repaired on MR A-252811
6/30	85	2-HCV-85-38-47	Repair accumulator	None	Normal usage	Accumulator alarm would not clear	Repaired on MR A-257554

BROWNS FERRY NUCLEAR PLANT UNIT 1

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of July 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
6/18	67	1-CLR-67-0909	Clean Coolers	None	Routine Maintenance	N/A	N/A
6/28	85	1-FCV-85-0039A	Repair leak	None	Unknown	Control rod was in past "00"	Repaired on MR A-257383
7/16	85	1-PMP-85-001	Replace gasket	None	Normal use	Leak	Repaired on MR A-266148

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JULY 1984

I. Work Synopsis

- A. During the July report period the unit 3 outage progressed through day number 329 of what is presently scheduled to be a 371-day outage. Projected milestone dates from the July 31, 1984, schedule update were as follows:

Open Fuel Pool Gates	8/3/84
Start Core Reload	8/9/84
Start RPV Reassembly	8/24/84
Start Reactor Vessel Hydrostatic Test	8/29/84
Return Unit 3 to Service	9/12/84

- B. Major field activities for the unit 3 outage effort during the July report period include progression of ECN P0392 CRD System Scram Discharge Instrument Volume Modification work to the point of completion of post-modification testing which allowed preliminary CRD testing to begin July 30, 1984.

II. Mechanical Summary - Modifications Section

- A. Jet pump instrumentation nozzles weld overlays were completed and Non-Destructive Examinations (NDE) reported satisfactory.
- B. Main Steam Isolation Valves - valve restoration lacks completion of ECN P0621 installation of locking tags and limit switch mounting plates. Limit switch bracket installation and mounting of the switches was reported at 65-percent complete on inboard valves.
- C. ECN P0730 removal of RHR head spray piping (from unit 3) was reported field complete.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JULY 1984

II. Mechanical Summary - Modifications Section (Continued)

- D. Diesel generator modifications (electrical and mechanical) were completed on the "1A," "B," and "C" diesel generators. These modifications include:
- P0585 Replacement of Existing Speed Sensing Equipment with Solid State Equipment
 - P0185 Loss of Field Trip Bypass When in Emergency Mode
 - P0275 Degraded Voltage Relays
 - P0709 Throttle Valve Installation in EECW Piping to the Cooling Water Heat Exchangers
 - L1970 EECW Piping Changeout (Carbon Steel to Stainless) - partial
- Note that these modifications were previously completed on the 3A, B, C, and D diesel generators.
- E. Three recirculation system snubbers were removed for maintenance.
- F. ECN P0361 Modification work on torus attached piping progressed through field completion of 447 of 457 required supports.
- G. The 79-02 hanger inspection program effort reported 337 of 387 complete at the end of July.
- H. Preparations are in progress to coat the lower drywell elevations (including structural steel).
- I. P0569 Replacement of RPV Head Vent Valves 3-98 and 3-99 is approximately 90-percent complete. Solenoid valve hookup and limit switch installation was tested satisfactorily from the control room.
- J. P0695 Modification to Selected 84-System valves to allow Local Leak Rate Test (LLRT) to the Flange Sides was reported field complete on July 17, 1984.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JULY 1984

II. Mechanical Summary - Modifications Section (Continued)

- K. P0691 (similar to P0695 described above) was continued on selected 64-series valves.
- L. P0684 Modifications to the Drywell-to-Torus Vacuum Breakers was still in progress this month.
- M. RHR Loop I and II maintenance and modification work was completed to a point that allowed release of these systems to the operations section for lineup and tests.
- N. Refuel floor efforts this month have included:
 - 1. Unit 2 high density fuel storage rack preparation work
 - 2. Unit 3 refuel platform maintenance
 - 3. Lost article search in the unit 3 reactor vessel
 - 4. SRM dry-tube inspection - no relevant indications found

III. Electrical Summary - Modifications Section

- A. ECN P04151 Temperature Instrumentation on the reactor feedwater nozzles was reported field complete on July 19, 1984.
- B. P0399/P0422/P5097 Correcting I&C bus voltage problems and RPS modification to provide redundant class IE protection were continued this month. The bus outages for transformer hookups associated with P0399 were completed. P0422 was reported field complete July 23, 1984.
- C. P3138 Replacement of RHR Pump Room Cooler Fan Motors was reported field complete this month.

OUTAGE MAINTENANCE & MAJOR MODIFICATION MANAGEMENT
JULY 1984

III. Electrical Summary - Modifications Section (Continued)

- D. P3006 System-73 Pressure Switch Repacement was reported field complete July 6, 1984.
- E. P0631 Relocation of RHRSW Radiation Detector - Work per this ECN has been delayed due to four-week delivery time for cable connectors.

IV. Planning and Scheduling

- A. The principal unit 3 efforts have centered around monitoring the work progress versus the schedule projections in order to identify delays and gains so that this information could be applied to additional schedule refinements.
- B. Unit 2 planning and scheduling work continues in preparation for the presently scheduled September 14, 1984, start of the unit 2 outage.

TENNESSEE VALLEY AUTHORITY
Browns Ferry Nuclear Plant
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AUG 09 1984

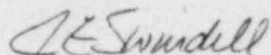
Nuclear Regulatory Commission
Office of Management Information
and Program Control
Washington, DC 20555

Gentlemen:

Enclosed is the July 1984 Monthly Operating Report to NRC for Browns Ferry Nuclear Plant Units 1, 2, and 3.

Very truly yours,

TENNESSEE VALLEY AUTHORITY



G. T. Jones
Plant Manager

Enclosures

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