

TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER PRODUCTION
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT
February 1, 1982 - February 28, 1982

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

Submitted By:

JR Bynum
Plant Superintendent

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Operations Summary

February 1982

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

There were 19 reportable occurrences and three revisions to previous reportable occurrences reported to NRC during the month of February.

Unit 1

There were two scrams on the unit during the month. On February 12, the reactor scrammed from a turbine trip caused by a high water level in a moisture separator due to a malfunction of a back up level indicator controller while the normal level indicator controller was out of service. The reactor was manually scrammed on February 28 to repair a drywell control air leak inside the drywell.

Unit 2

There were no scrams on the unit during the month.

Unit 3

The unit was in its EOC-4 refueling outage the entire month.

Operations Summary (Continued)

February 1982

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	0.00531	0.00432	0.00361
Feedwater nozzle	0.25421	0.18767	0.14108
Closure studs	0.20986	0.14460	0.10977

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

Common System

Approximately 1.95E+06 gallons of waste liquids were discharged containing approximately 1.58E+00 curies of activities.

Operations Summary (Continued)

February 1982

Refueling InformationUnit 1

Unit 1 is scheduled for its fifth refueling beginning on or about March 4, 1983, with a scheduled restart date of June 3, 1983. This refueling will involve loading 8 X 8 R (retrofit) fuel assemblies into the core, finishing the torus modification, turbine inspection, and finishing TMI-2 modifications, post accident sampling facility tie-ins, core spray change out, and change out of jet pump hold-down beams.

There 764 fuel assemblies in the reactor vessel. The spent fuel storage pool presently contains 260 EOC-4 fuel assemblies, 232 EOC-3 fuel assemblies, 156 EOC-2 fuel assemblies and 168 EOC-1 fuel assemblies. The present capacity is 1148 locations. Modification work and testing is in progress to increase the spent fuel pool capacity to 3471 assemblies.

Unit 2

Unit 2 is scheduled for its fourth refueling beginning on or about July 30, 1982, with a scheduled restart date of January 1, 1983. This refueling outage will involve completing relief valve modifications, torus modifications, "A" low pressure turbine inspection, generator inspection, MG set installation for LPCI modification, loading additional 8 X 8 fuel assemblies into the core, TMI-2 modifications, post accident sampling facility tie-ins, and change out of jet pump hold-down beams.

There are 764 fuel assemblies in the reactor vessel. At the end of the month there were 353 EOC-3 fuel assemblies, 156 EOC-2 fuel assemblies, and 132 EOC-1 fuel assemblies in the spent storage pool. The present available storage capacity of the spent fuel pool is 160 locations. With present capacity the

Operations Summary (Continued)

February 1982

Refueling Information (Continued)Unit 2 (Continued)

1979 refueling was the last refueling that could be discharged to the spent fuel pool without exceeding that capacity and maintaining full core discharge capability in the pool. However, 949 new high density storage locations have been installed and can be used after they are qualified.

Unit 3

Unit 3 began its fourth refueling on October 30, 1981, with a scheduled restart date of April 8, 1982. This refueling involves loading additional 8 X 8 R (retrofit) assemblies into the core, relief valve modification, turbine inspection, generator breaker and unit station transformer tie-in, and torus modifications.

There are 13 fuel assemblies presently in the reactor vessel. There are 751 EOC-4 fuel assemblies, 124 EOC-3 fuel assemblies, 144 EOC-2 fuel assemblies, 208 EOC-1 fuel assemblies, and 288 new fuel assemblies in the spent fuel storage pool. The present available capacity of the spent fuel pool is 234 locations.

Significant Operational Events

Unit 1

Date	Time	Event
2/01/82	0001	Reactor thermal power at 95%, PCIOMR in progress (Sequence "A").
	0630	Reactor thermal power at 99%, maximum flow, rod limited.
2/05/82	2200	Commenced reducing thermal power for turbine control valve tests, SI's and control rod pattern adjustment.
	2230	Reactor thermal power at 67%, holding for turbine control valve tests, SI's and control rod pattern adjustment.
	2235	Turbine control valve tests and SI's complete, holding at 67% thermal power for control rod pattern adjustment.
	2350	Control rod pattern adjustment complete, commenced power ascension.
2/06/82	0430	Commenced PCIOMR from 96% thermal power (Sequence "A").
	0700	Reactor thermal power at 99%, maximum flow, rod limited.
	2100	Reactor thermal power at 98%, maximum flow, rod limited.
2/08/82	0030	Commenced reducing thermal power for SI 4.3.D.1-2 (Periodic Critical Rod Comparison).
	0130	Reactor thermal power at 94% for SI 4.3.D.1-2.
	0200	Reducing thermal power for control rod pattern adjustment.
	0235	Reactor thermal power at 76%, holding for control rod pattern adjustment.
	0440	Control rod pattern adjustment complete, commenced power ascension.
	0600	Commenced PCIOMR from 89% thermal power, (Sequence "A").
	1500	Reactor thermal power at 99%, maximum flow, rod limited.
2/12/82	0152	Reactor Scran No. 147 ⁽¹⁾ from 99% thermal power when the trubine tripped on moisture separator high level.
	1412	Commenced rod withdrawal for startup.
	1835	Reactor Critical No. 168.
	2023	Rolled T/G.
	2052	Synchronized generator, commenced power ascension.
2/13/82	1930	Commenced PCIOMR from 88% thermal power (Sequence "A").

Significant Operational Events

Unit 1

Date	Time	Event
2/14/82	0930	Reactor thermal power at 93%, maximum flow, rod limited.
	1050	Commenced withdrawing control rods for control rod pattern adjustment.
	1200	Reactor thermal power at 99%, maximum flow, rod limited.
	1900	Reactor thermal power at 98%, maximum flow, rod limited.
	2000	Reactor thermal power at 97%, maximum flow, rod limited.
	2300	Reactor thermal power at 96%, maximum flow, rod limited.
	2330	Commenced reducing thermal power for control rod pattern adjustment.
2/15/82	0025	Reactor thermal power at 84%, holding for control rod pattern adjustment.
	0145	Control rod pattern adjustment complete, commenced PCIOMR from 84% thermal power (Sequence "A").
	1330	Reactor thermal power at 99%, maximum flow, rod limited.
2/19/82	2200	Commenced reducing reactor thermal power for control rod pattern adjustment.
	2400	Reactor thermal power at 64%, holding for control rod pattern adjustment.
2/20/82	0050	Commenced withdrawing control rods for rod pattern adjustment.
	0440	Control rod pattern adjustment complete, commenced PCIOMR from 77% thermal power (Sequence "A").
	1520	Stopped PCIOMR for "R" factor adjustment. Reactor power at 89%.
	1750	"R" factor adjustment complete, commenced PCIOMR from 89% power (Sequence "A").
2/21/82	0300	Reactor thermal power at 99%, maximum flow, rod limited.
2/23/82	2242	Commenced reducing thermal power for backwash and precoat of condensate demineralizers.
	2300	Reactor thermal power at 92%, holding for backwash and precoat of condensate demineralizers.
2/24/82	1025	Commenced power ascension from 92% thermal power.
	1500	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Events

Unit 1

Date	Time	Event
2/27/82	0125	Commenced reducing thermal power for control rod pattern adjustment and turbine control valve tests and SI's.
	0145	Reactor thermal power at 90%, holding for turbine control valve tests and SI's.
	0200	Turbine control valve tests complete, holding for control rod pattern adjustment.
	0230	Control rod pattern adjustment complete, commenced PCIOMR from 90% thermal power (Sequence "A").
	0605	Commenced reducing thermal power from 94% due to an EHC leak on #2 control valve servo valve.
	0700	Reactor thermal power at 78%, holding to repair #2 control valve servo valve leak.
	0850	Leak repair on #2 control valve servo valve complete, holding for turbine control valve test.
	1110	Turbine control valve tests complete, commenced power ascension.
	1230	Commenced PCIOMR from 87% thermal power (Sequence "A").
	1730	Reactor thermal power at 99%, maximum flow, rod limited.
2/28/82	0435	Commenced reducing thermal power for shutdown due to control air leak in drywell.
	0905	Reactor Manual Scram No. 148 (1) from 45% thermal power due to a control air leak inside drywell.
	2400	Unit remains offline to repair control air leak inside drywell. (The control air leak is on the solenoid valve for core spray testable check valve 75-26).

Significant Operational Events

Unit 2

Date	Time	Event
2/01/82	0001	Reactor thermal power at 99%, maximum flow, rod limited.
2/06/82	1950	Commenced reducing thermal power for control rod pattern adjustment.
	2015	Reactor thermal power at 82%, holding for control rod pattern adjustment.
	2130	Control rod pattern adjustment completed, commenced PCIOMR (Sequence "A").
2/07/82	1030	Reactor thermal power at 99%, maximum flow, rod limited.
2/13/82	2325	Commenced reducing thermal power for turbine control valve tests and SI's.
2/14/82	0001	Reactor thermal power at 80%, holding for turbine control valve tests and SI's.
	0050	Turbine control valve tests and SI's complete, commenced power ascension.
	0500	Reactor thermal power at 99%, maximum flow, rod limited.
2/21/82	0001	Reduced thermal power to 90% for turbine control valve tests and SI's.
	0037	Turbine control valve tests and SI's complete, commenced power ascension.
	0100	Reactor thermal power at 99%, maximum flow, rod limited.
2/28/82	0230	Reduced thermal power to 90% for turbine control valve tests and SI's.
	0253	Turbine control valve tests and SI's complete, commenced power ascension
	0330	Reactor thermal power at 99%, maximum flow, rod limited.
	2400	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Events

Unit 3

Date	Time	Event
2/01/82	0001	End-of-Cycle 4 refuel outage continues.
2/28/82	2400	End-of-Cycle 4 refuel outage continues.

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
 UNIT Browns Ferry - 1
 DATE 3-1-82
 COMPLETED BY Ted Thom
 TELEPHONE 205 729 6846

MONTH February

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1058
2	1063
3	1073
4	1071
5	1041
6	1046
7	1044
8	1007
9	1070
10	1063
11	1071
12	110
13	759
14	1014
15	1019
16	1066

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	1076
18	1072
19	1044
20	893
21	1070
22	1064
23	1066
24	1032
25	1064
26	1070
27	980
28	334
29	
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.

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260UNIT Browns Ferry - 2DATE 3-1-82COMPLETED BY Ted ThomTELEPHONE 205 729 6846MONTH February

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>1075</u>	17	<u>1094</u>
2	<u>1074</u>	18	<u>1092</u>
3	<u>1082</u>	19	<u>1087</u>
4	<u>1078</u>	20	<u>1088</u>
5	<u>1070</u>	21	<u>1093</u>
6	<u>1057</u>	22	<u>1088</u>
7	<u>1048</u>	23	<u>1090</u>
8	<u>1077</u>	24	<u>1092</u>
9	<u>1083</u>	25	<u>1080</u>
10	<u>1077</u>	26	<u>1082</u>
11	<u>1080</u>	27	<u>1085</u>
12	<u>1083</u>	28	<u>1084</u>
13	<u>1072</u>	29	<u> </u>
14	<u>1071</u>	30	<u> </u>
15	<u>1078</u>	31	<u> </u>
16	<u>1080</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 Browns Ferry - 3DATE 3-1-82COMPLETED BY Ted ThomTELEPHONE 205 729 6846MONTH February

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

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>-6</u>
18	<u>-5</u>
19	<u>-5</u>
20	<u>-4</u>
21	<u>-4</u>
22	<u>-5</u>
23	<u>-3</u>
24	<u>-4</u>
25	<u>-4</u>
26	<u>-12</u>
27	<u>-7</u>
28	<u>-8</u>
29	<u></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 3-1-82
 COMPLETED BY Ted Thom
 TELEPHONE 205 729 6846

OPERATING STATUS

1. Unit Name: <u>Browns Ferry - 1</u>	Notes
2. Reporting Period: <u>February 1982</u>	
3. Licensed Thermal Power (MWt): <u>3293</u>	
4. Nameplate Rating (Gross MWe): <u>1152</u>	
5. Design Electrical Rating (Net MWe): <u>1065</u>	
6. Maximum Dependable Capacity (Gross MWe): <u>1098.4</u>	
7. Maximum Dependable Capacity (Net MWe): <u>1065</u>	
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons: <u>NA</u>	
9. Power Level To Which Restricted, If Any (Net MWe): <u>NA</u>	
10. Reasons For Restrictions, If Any: <u>NA</u>	

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>672</u>	<u>1,416</u>	<u>66,458</u>
12. Number Of Hours Reactor Was Critical	<u>640.37</u>	<u>1,324.87</u>	<u>40,639.67</u>
13. Reactor Reserve Shutdown Hours	<u>31.63</u>	<u>42.73</u>	<u>5,257.93</u>
14. Hours Generator On-Line	<u>638.08</u>	<u>1,318.68</u>	<u>39,748.85</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>2,026,159</u>	<u>4,215,002</u>	<u>111,089,909</u>
17. Gross Electrical Energy Generated (MWH)	<u>673,030</u>	<u>1,387,550</u>	<u>36,680,000</u>
18. Net Electrical Energy Generated (MWH)	<u>656,174</u>	<u>1,353,160</u>	<u>35,622,069</u>
19. Unit Service Factor	<u>95.0</u>	<u>93.1</u>	<u>59.8</u>
20. Unit Availability Factor	<u>95.0</u>	<u>93.1</u>	<u>59.8</u>
21. Unit Capacity Factor (Using MDC Net)	<u>91.7</u>	<u>89.7</u>	<u>50.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>91.7</u>	<u>89.7</u>	<u>50.3</u>
23. Unit Forced Outage Rate	<u>5.0</u>	<u>6.9</u>	<u>26.6</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	Actual
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 3-1-82
 COMPLETED BY Ted Thom
 TELEPHONE 205 729 6846

OPERATING STATUS

1. Unit Name: <u>Browns Ferry - 2</u>	Notes
2. Reporting Period: <u>February</u>	
3. Licensed Thermal Power (MWt): <u>3293</u>	
4. Nameplate Rating (Gross MWe): <u>1152</u>	
5. Design Electrical Rating (Net MWe): <u>1065</u>	
6. Maximum Dependable Capacity (Gross MWe): <u>1098.4</u>	
7. Maximum Dependable Capacity (Net MWe): <u>1065</u>	
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons: <u>NA</u>	
9. Power Level To Which Restricted, If Any (Net MWe): <u>NA</u>	
10. Reasons For Restrictions, If Any: <u>NA</u>	

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>672</u>	<u>1,416</u>	<u>61,399</u>
12. Number Of Hours Reactor Was Critical	<u>672</u>	<u>1249.78</u>	<u>39,696.74</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>157.72</u>	<u>13,639.48</u>
14. Hours Generator On-Line	<u>672</u>	<u>1,194.38</u>	<u>38,391.47</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>2,203,800</u>	<u>3,847,375</u>	<u>110,500,165</u>
17. Gross Electrical Energy Generated (MWH)	<u>742,370</u>	<u>1,282,280</u>	<u>36,714,928</u>
18. Net Electrical Energy Generated (MWH)	<u>725,787</u>	<u>1,250,361</u>	<u>35,672,507</u>
19. Unit Service Factor	<u>100.0</u>	<u>84.3</u>	<u>62.5</u>
20. Unit Availability Factor	<u>100.0</u>	<u>84.3</u>	<u>62.5</u>
21. Unit Capacity Factor (Using MDC Net)	<u>101.4</u>	<u>82.9</u>	<u>54.6</u>
22. Unit Capacity Factor (Using DER Net)	<u>101.4</u>	<u>82.9</u>	<u>54.6</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>15.7</u>	<u>28.8</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): <u>August 1982 - Refuel & Modifications</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	<u> </u>	<u> </u>
INITIAL ELECTRICITY	<u> </u>	<u> </u>
COMMERCIAL OPERATION	<u> </u>	<u> </u>

OPERATING DATA REPORT

DOCKET NO. 50-296
 DATE 3-1-82
 COMPLETED BY Ted Thom
 TELEPHONE 205 729 6846

OPERATING STATUS

1. Unit Name: <u>Browns Ferry - 3</u>	Notes
2. Reporting Period: <u>February</u>	
3. Licensed Thermal Power (MWt): <u>3293</u>	
4. Nameplate Rating (Gross MWe): <u>1152</u>	
5. Design Electrical Rating (Net MWe): <u>1065</u>	
6. Maximum Dependable Capacity (Gross MWe): <u>1098.8</u>	
7. Maximum Dependable Capacity (Net MWe): <u>1065</u>	
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons: <u>NA</u>	
9. Power Level To Which Restricted, If Any (Net MWe): <u>NA</u>	
10. Reasons For Restrictions, If Any: <u>NA</u>	

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	<u>672</u>	<u>1,416</u>	<u>43,824</u>
12. Number Of Hours Reactor Was Critical	<u>0</u>	<u>0</u>	<u>32,466.98</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>2,141.53</u>
14. Hours Generator On-Line	<u>0</u>	<u>0</u>	<u>31,750.78</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>93,858,620</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>30,998,190</u>
18. Net Electrical Energy Generated (MWH)	<u>0</u>	<u>0</u>	<u>30,088,946</u>
19. Unit Service Factor	<u>0</u>	<u>0</u>	<u>72.5</u>
20. Unit Availability Factor	<u>0</u>	<u>0</u>	<u>72.5</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>0</u>	<u>64.5</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>0</u>	<u>64.5</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>0</u>	<u>9.2</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	_____	_____

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH January (1)
 DOCKET NO. 50-260
 UNIT NAME Browns Ferry - 2
 DATE 3-1-82
 COMPLETED BY Ted Thom
 TELEPHONE 205 729 6846

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
225	1-12-82	F		A					Derated when 2B SJAE was lost due to a pressure regulator failure
226	1-15-82	F		A					Derated when C-1 water box out of service for cleaning
227	1-29-82	F		A					Derated for "B" recirculation pump MG set brush replacement and 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 (NUREG-0161)

 5
 Exhibit I - Same Source

(177)

(1) No power reductions or shutdowns occurred during February 1982

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH February

DOCKET NO. 50-259
 UNIT NAME Browns Ferry - 1
 DATE 3-1-82
 COMPLETED BY Ted Thom
 TELEPHONE 205 729 6846

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
199	2-5-82	S		H					Derated for control rod pattern adjustment
200	2-8-82	S		H					Derated for control rod pattern adjustment
201	2-12-82	F	19.00	A	3				Reactor scram when turbine tripped on moisture separator high level
202	2-19-82	S		H					Derated for control rod pattern adjustment
203	2-28-82	F	14.92	A	2				Reactor scram due to control air leak in drywell. Leak was in solenoid for core spray testable check valve 1-75-26

1
 F- Forced
 S- Scheduled

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

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

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

5
 Exhibit I - Same Source

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH February

DOCKET NO. 50-296
 UNIT NAME Browns Ferry -3
 DATE 3-1-82
 COMPLETED BY Ted Thom
 TELEPHONE 205 729 6846

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
93 (Cont)	2-01-82	S	672	C	2				Reactor scram to accommodate EOC-4 refuel outage

¹
 F - Forced
 S - Scheduled

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

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

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

⁵ Exhibit I - Same Source

BROWNS FERRY NUCLEAR PLANT UNIT 1 & Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 19 82

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
2/2/82	Unit Preferred Power	Degraded voltage relays on the 4kV shutdown boards (common to units 1 & 2)	During the performance of SI4.9.A.4.c the trip setpoint of all 12 degraded voltage relays were found to be below the minimum trip point of 3900 volts.	None, the loss of voltage relay channels were available and operable	The degraded voltage relays trip setpoint had drifted down about 3% in 6 months since installation	The relays trip setpoint was too low	The relays were recalibrated by PSO and returned to service. The calibration frequency will be increased until the relays stability has been determined. LER#BFRO-50-259/8213
2/11/82	CRD	LA-85-085A	Annunciator window would not illuminate	None	Bad annunciator circuitry card	Annunciator inoperable	Replaced the bad circuitry card, the annunciator operated properly. TR #231983
2/11/82 2/15/82	Fire Protection	XS 39-75-BB XS 39-66 E	SI4.11.C.1&5	None	The detectors were found to have low sensitivity during the performance of SI	The smoke detectors sensitivity was too low	Replaced the smoke detectors and performed SI4.11.C.1&5. The detectors operated properly. TR #188246 TR #252946

BROWNS FERRY NUCLEAR PLANT UNIT 1 & Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 19 82

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
2/23/82	Off-gas	Stack filter cubicle (exhaust) fan A	The fan was continually tripping	None	Overload setting	The fan was tripping out on the thermal overloads	Tested motor, greased motor bearings and increased overload setting. The fan operated properly. TR #231794
2/23/82	Main Steam	Main steam line A outer isolation valve limit switch	Received a closed indication while valve was open	None	Open limit switch actuating arm was loose	Received a false closed indication	Adjusted and tightened the position arm, indicating lights operated properly. TR #231826
2/28/82	Neutron Monitoring	Neutron monitoring battery channel A	Positive terminal cracked	None	The cables were possibly bumped during cleanup	Cracked battery terminal, however the terminal was not broken to the point of breaking the battery connection	Replaced the battery cell terminals 1, 2 and 3 per SEMI 36. TR #280161

BROWNS FERRY NUCLEAR PLANT UNIT 2CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 19 82

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
2/5/82	RCIC	FCV-2-71-59	FCV-2-71-59 inoperable	None	The valves feeder breaker was not racked in properly	FCV-2-71-59 was inoperable	Adjusted and lubricated the breakers racking screw. Racked in the breaker and the valve operated properly. TR #279473
2/9/82	Ventilating	(FCO-30-163B) 4kV shutdown bd. battery rm. exhaust fan damper	Damper inoperable	None	Bad damper motor	FCO-30-163B inoperable	Replaced the bad damper motor, adjusted the damper arms and linkage and the damper operated properly. TR #252892
2/10/82	RHR	(FCV-2-74-2) RHR pump A shutdown cooling suction valve	FCV-2-74-2 inoperable	None	Overload opened	FCV-2-74-2 was inoperable	Reset overload, the valve current was checked and found to be acceptable. The valve was operated and returned to service TR #279415

BROWNS FERRY NUCLEAR PLANT UNIT 2CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 19 82

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
2/12/82	Main Steam	FCV 2-1-26 AC pilot coil circuitry	During the performance of EMI 39 terminal lug on GG block, point 51 in panel 2-25-32 was found to be broken	None	Broken wire terminal lug	AC pilot coil inoperable	Replaced the broken terminal lug, re-terminated conductor and successfully completed EMI 39. TR 105841

BROWNS FERRY NUCLEAR PLANT UNIT 3CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 19 82

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
2/1/82	Fire Protection	XS-39-71 XS XS-39-93 QA XS-39-93 NB XS-39-93 LA	SI4.11.C.1&5	None	The detectors were found to be bad during the performance of SI4.11.C.1&5	Smoke detectors XS-39-71XS, XS-39-93LA, and XS-39-93 QA was found to have improper sensitivity. Smoke detector XS-39-93NB would not clear after it was initiated	Replaced the bad detectors and each operated properly. TR #188252 TR #267900 TR #267901 TR #267899
2/7/82	Neutron Monitoring	Bypass switch for "H" IRM	"H" IRM would not bypass	None	Switch contacts 5 and 6 were bad	Bypass switch for "H" IRM was bad	Replaced the bad switch, the new switch operated properly. TR #280591
2/7/82	Fire Protection	XS-39-93XB	Received a trouble alarm on panel 25-313	None	Loose wire connection in smoke detector XS-39-93KB	Smoke detector XS-39-93KB was inoperable	Tightened the loose connection and the detector operated properly. TR #280592

BROWNS FERRY NUCLEAR PLANT UNIT 3CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 19 82

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
1/26/82 2/13/82	HPCI	Gland seal condenser pump motor and solenoid on FCV-3-73-8	Inspection of these components was required due to flooding of the HPCI room	None	HPCI room flooding	The gland seal condenser pump motor was grounded and the FCV-73-8 solenoid badly corroded	Replaced the pump motor, while testing the pump motor failed and was replaced with a second motor which operated properly. The FCV-73-8 solenoid was replaced and operated properly. TR #233046 TR #252928 TR #233044 TR #252929
2/17/82	CRD	Scram accumulator level switch 34-39	When push-button 34-39 was engaged, fuse would blow causing light to illuminate in the control room	None	Broken insulation on the accumulator level switch leads	Accumulator level switch 34-39 inoperable	The broken insulation was repaired and the switch operated properly. The switch again failed on 2/22/82, and the level switch was replaced and tested per EMI 50 and operated properly. TR #225922 TR #225976

BROWNS FERRY NUCLEAR PLANT UNIT 3CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of February 1982

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
2/22/82	CRD	Scram accumulator level switch 34-07	Received a false accumulator level alarm	None	Bad accumulator level switch 34-07	Accumulator level switch 34-07 was inoperable	Replaced the level switch and successfully tested per EMI 50. TR #225980
2/24/82	RCIC	Overspeed monitor circuitry	A ground was indicated on the RCIC turbine trip circuitry	None, unit in refueling outage	Broken wire lug	Overspeed monitor trip circuitry inoperable	Repaired the broken connection, ground cleared. TR #241786

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of February 1982

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
2-4	CRD	Module 14-43 Star Valve Assembly	Faulty Valve	None	Bad Valve	Leak	Installed new Cartridge Valve TR# 233728
2-3	CRD	Star valve module 30-03	Valve Mal- function	None	Worn Packing	Leak	Replaced packing on star valve TR# 227946
2-5	CRD	Star valve module 14-11	Star valve needs repacking	None	Worn Packing	Leak	Repacked star valve TR# 227976
2-8	HPCI	LS-73-15A LS-73-15B	Switches binding	None	Switch full of water and rust	Switches inoperable	Installed new switches TR# 188238
2-14	CRD	FCV-85-11B	Valve not functioning properly	None	Roller bad in Valve	Valve leaking thru	Replaced roller and gasket TR# 228049
1-31	D/G	B D/G #2 Air Comp. unloader valve	Faulty Valve	None	Bad Valve	Pilot Valve Leaking	Replaced pilot valve TR# 227901
1-7	D/G	A Engine left & right bank air start motors	Air Start Motor Inoperable	None	Faulty air start motor	Unknown	Rebuilt air motor left & right bank TR# 233136
1-26	D/G	B Engine left & right bank air start motors	Air start motor inoperable	None	Faulty air start motor	Unknown	Changed air start motors TR# 233137
1-27	D/G	#1 Air Comp. D/G "D"	Air leak on high-pressure head	None	Head gasket worn	Leaking	Rebuilt head gasket TR# 227913
2-5	RHR	3D RHR Rm Cooler	Broken nipple	None	1/4" pipe nipple broke off of cooling coils	Unknown	Resolder new brass nipple on cooling coils TR# 306320

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of February 19 82

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
1-29	Contnmnt. Atmospheric Dilution	CAD Tanks	Leak around valves	None	Faulty O'ring & poppet	Relief valve relieving at all pressures	Replaced O'ring, poppet & set to 140 psi, tightened packing TR# 138228
2-23	D/G	1A D/G air comp. 0-86-504A	Valve needs repair	None	Handle broken on valve	Valve inoperable	Replaced ball valve TR# 279564

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of February 19 82

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
2-5	CRD	Star Valve Module 14-31	Packing needs replacing	None	Worn Packing	Leak	Repacked Valve TR# 227975
2-6-	CRD	CRD Accumulator Valve 85-229	Valve Needs Repacking	None	Packing Worn Out	Leak	Repacked star valve TR# 228059
2-16	CRD	Star Valve 3-85-229A	Valve needs Repacking	None	Worn Packing	Leak	Replaced packing TR# 225905
2-6	CRD	3-85-590 Module 46-39	Faulty Valve	None	Bad stem bonnet & gasket	Leak	Replaced stem bonnet & gasket TR# 225906
2-16	CRD	3-85-588 Module 58-19	Valve needs re-charging	None	Faulty wedge (gate)	Non-proper operation	Replaced wedge (gate) TR# 225904
2-21	CRD	3-85- Module 38-15	Valve needs re-charging	None	Faulty wedge (gate)	Non-proper operation	Replaced wedge (gate) TR# 225920
2-18	CRD	Module 30-07 Star Valves	Valves need repacking	None	Worn packing (full)	Leaking when not in back seat)	Repacked valves TR# 225923
2-10	D/G	3A D/G Air Compressor #2 Relief Valve	Valve not operating properly	None	Relief valve off of compressor	Valve lifts before air compressor shuts off	Installed new relief valve TR# 227992
1-27	D/G	B Engine Freq. Gen. Coupling	Faulty Coupling	None	Coupling was bad	Unknown	Installed new coupling TR# 337803
2-4	HPCI	LS-73-8	Faulty float & reweld level pot	None	Float switch would not operate	Level switch inoperable	Replaced float & reweld pot TR# 233347
2-3	CRD	Module 18-31 3-85-588	Valve Frozen	None	Worn bonnet & stem damaged	Valve inoperable	Replaced bonnet TR# 233729
2-4	CRD	Module 26-23 85-229A	Faulty Valve	None	Bad Valve	Leak	Installed new cartridge valve TR# 227956

BROWNS FERRY NUCLEAR PLANT UNIT 2CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of February 19 82

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
2-9	CRD	FSV-85-398	Channel "A" Scram Pilot Valve Air Leak	None	Faulty O'rings	Air Leak	Changed O'rings TR# 297303 TR# 337810

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of February 19 82

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
2-11	Core Spray	B&D Core Spray Pumps Cooler	Water Leak	None	Broken coil vent	Tube Leaking	Resoldered vent to coil. TR# 231982
2-6	Core Spray	Cooler for A&C Core Spray Pumps	Water Leak	None	Vent nipple broken off	Leakage	Resoldered vent nipple to coil TR# 281441
2-5	EECW	EECW Hdr. pipe to RHR pump Rm.	Hole in pipe	None	Hole in line	Water Leak	Used rubber gasket & cleanup around pipe. TR# 281447
2-4	RBCCW	Sample Pump	Replace Coupling	None	Bad coupling & spider	Unknown	Replaced couplings & spider TR# 241590
2-10	HPCI	Tubing at stop valve & stop control valve relay	Faulty valve & stripped threads	None	Bad valve threads stripped	Oil Leak	Repaired valve, filed threads TR# 282041
2-9	HPCI	HPCI Turbine	Tank needs cleaning	None	Water contents in oil	Turbine was inoperable	Changed oil & filters TR# 182361

BROWNS FERRY NUCLEAR PLANT UNIT 1, 2, & 3

INSTRUMENT MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF February 1982

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
<u>nit 1</u>							
2-1	23	PT-23-59	Replace	None	Frozen	Loss of Indication	Repaired Thermostat
<u>nit 2</u>							
2-1	67	PT-67-20	Calibration	None	Instrument Drift	Incorrect Indication	None
2-10	75	PDIS-75-56	Replace	None	Excessive Drift	Incorrect Switch Operation	None
<u>nit 3</u>							
2-22	74	TR-74-80	Repair	None	Open Slidewire	Loss of Indication	None
2-23	85	PI-85-34	Replace	None	Broken	Incorrect Indication	None
2-25	75	FT-75-21	Calibrate	None	Instrument Drift	Incorrect Indication	None

FIELD SERVICES SUMMARY

February 1982

The unit 3 cycle 4 refueling outage overall duration has been revised from 146 days to 160 days. Return to service date is now scheduled for April 9, 1982. The fourteen additional days were required due to late system turnover to operations and manpower limitations required to accomodate the surveillance instructions from the reactor pressure vessel hydro to startup.

A

Significant activities that were completed included:

1. The shrunk-on-wheel inspections for "B" and "C" low pressure turbines with no problems encountered.
2. The painting and filling the torus.
3. The repair and reassembly of "C" reactor feedpump.
4. The installation of the debris screens in the drywell.
5. The repair and reassembly of the bypass and main stop valves.
6. The cleanup and post mod test on the generator breaker modification.
7. The additional changeout of 3 CRD's 22-31, 38-59 and 42-51.
8. The removal of the fuel pool gates for fuel reload.

Major modifications and routine maintenance work that is in progress includes the Unit Station Service Transformer installation which is approximately 85 percent complete, degraded voltage relays for the USST, TIP indexer maintenance, LLRT of miscellaneous valves, external portion of the torus modification, security modifications, recirculation motor generator, pump motors and pump maintenance, EMI-7 breaker maintenance, eddy current testing of selected heat exchangers, conduit installation for hydrogen and oxygen sample pumps, main steam relief and isolation valve maintenance and testing, and control rod drive rebuild.

FIELD SERVICES SUMMARY (Continued)

February 1982

Major emphasis is not placed on the fuel reload which is approximately 5 percent complete and integrated leak rate test preparations. Preplanning effort is in progress for unit 2 end-of-cycle 4 outage.