

TENNESSEE VALLEY AUTHORITY  
DIVISION OF NUCLEAR POWER  
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT

October 1, 1982 - October 31, 1982

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

Submitted by: D. T. Jones  
Plant Superintendent

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Operations Summary

October 1982

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 17 reportable occurrences and four revisions to previous reportable occurrences reported to the NRC during the month of October.

Unit 1

There were no scrams on the unit during the month.

Unit 2

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

Unit 3

There was no scrams on the unit during the month.

Principally prepared by B. R. McPherson.

Operations Summary (Continued)

October 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	0.00557	0.00448	0.00388
Feedwater nozzle	0.27208	0.19544	0.14701
Closure studs	0.21555	0.15641	0.12638

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

Common System

Approximately  $4.67\text{E}+05$  gallons of waste liquids were discharged containing approximately  $5.75\text{E}-01$  curies of activities.

Operations Summary (Continued)

October 1982

Refueling InformationUnit 1

Unit 1 is scheduled for its fifth refueling beginning on or about March 18, 1983 with a scheduled restart date of July 18, 1983. This refueling will involve loading 8 X 8 R (retrofit) fuel assemblies into the core; finishing the torus modification; turbine inspection; finishing TMI-2 modifications; post-accident sampling facility tie-ins; core spray changeout; and changeout of jet pump hold-down beams.

There are 764 fuel assemblies in the reactor vessel. The spent fuel storage pool presently contains 52 new 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 capacity is 1,148 locations. Modification work and testing are in progress to increase the spent fuel pool capacity to 3,471 assemblies.

Unit 2

Unit 2 began its fourth refueling on July 30, 1982 with a scheduled restart date of January 19, 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 R fuel assemblies into the core; TMI-2 modifications; post-accident sampling facility tie-ins; and changeout of jet pump hold-down beams.

There are no fuel assemblies in the reactor vessel. At the end of the month there were 248 new fuel assemblies; 764 EOC-4 fuel assemblies; 353 EOC-3 fuel assemblies; 156 EOC-2 fuel assemblies; and 132 EOC-1 fuel

Operations Summary (Continued)

October 1982

Refueling InformationUnit 2 (Continued)

assemblies in the spent fuel storage pool. The present available capacity of the spent fuel pool is 97 locations.

Unit 3

Unit 3 is scheduled for its fifth refueling on or about October 1, 1983, with a scheduled restart date of January 31, 1984. This refueling will involve loading 8 X 8 R (retrofit) assemblies into the core; finishing the torus modifications; post-accident sampling facility tie-in; core spray changeout; finishing TMI-2 modifications; turbine inspection; and changeout of jet pump hold-down beams.

There are 764 fuel assemblies presently in the reactor vessel. There are 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 993 locations.

Significant Operational Event

## Unit 1

Date	Time	Event
10/01/82	0001	Reactor thermal power at 93% for maintenance on C1 and C2 high-pressure heaters.
	0230	Commenced PCIOMR from 93% thermal power.
	0330	Reactor thermal power at 97%, holding due to maintenance on C1 and C2 high-pressure heaters.
	0810	Reduced thermal power to 91% to remove "A" CCW pump from service due to low oil level.
	0830	"A" CCW pump back in service, commenced power ascension.
	1000	Reactor thermal power at 96%, for maintenance on C1 and C2 high-pressure heaters.
	1930	C1 and C2 high-pressure heaters in service, commenced power ascension.
	2100	Reactor thermal power at 99%, maximum flow, rod limited.
10/02/82	0040	Commenced reducing thermal power for turbine control valve tests and SI's.
	0100	Reactor thermal power at 90% for turbine control valve tests and SI's.
	0112	Turbine control valve test complete, holding at 90% due to problems with control rod 46-35.
	0137	Reducing thermal power to withdraw control rod 46-35 to position 48.
	0145	Reactor thermal power at 85%, control rod 46-35 withdrawn.
	0150	Commenced power ascension from 85% thermal power.
	0430	Commenced PCIOMR from 97% thermal power (Sequence "A").
	0630	Reactor thermal power at 99% maximum flow, rod limited.
10/09/82	0048	Commenced reducing thermal power for control rod pattern adjustment.
	0300	Reactor thermal power at 74% for control rod pattern adjustment.
	0330	Commenced power increase for control rod pattern adjustment.
	0430	Control rod pattern adjustment complete, commenced PCIOMR from 76% thermal power (sequence "A").
	2220	Commenced reducing thermal power from 92% control rod pattern adjustment.
	2230	Reactor power at 88% for control rod pattern adjustment.
	2300	Commenced PCIOMR from 88% thermal power (sequence "A").

Significant Operational Event

## Unit 1

Date	Time	Event
10/10/82	0830	Stopped PCIOMR at 95% power to backwash and precoat demineralizer.
	1030	Holding at 95% power for control rod pattern adjustment.
	1155	Commenced power increase for control rod pattern adjustment.
	1330	Control rod pattern adjustment complete, commenced PCIOMR from 97% thermal power (sequence "A").
	1500	Stopped PCIOMR at 98% power due to problems with condensate demineralizers.
10/11/82	0007	Reduced thermal power to 96% for control rod pattern adjustment.
	0030	Control rod pattern adjustment complete, commenced PCIOMR.
	0400	Reactor thermal power at 99%, maximum flow, rod limited.
10/13/82	1700	Reduced thermal power to 95% to pull control rods for core flow adjustment.
	1740	Commenced power ascension from 95% thermal power.
	1800	Reactor thermal power at 99%, maximum flow, rod limited.
10/14/82	1350	Reduced thermal power to 97%, when control rod 45-35 scrambled while performing TI-60.
10/15/82	0218	Commenced reducing thermal power for scram testing control rod 46-35.
	0300	Reactor thermal power at 79% for scram testing control rod 46-35.
	0345	Scram test of control rod 46-35 complete, commenced power ascension.
	0430	Reactor thermal power at 99%, maximum flow, rod limited.
	2300	Reduce thermal power to 95% for turbine control valve tests and SI's.
	2345	Turbine control valve tests and SI's complete, commenced power ascension.
10/16/82	0030	Reactor thermal power at 99%, maximum flow, rod limited.
10/22/82	2345	Commenced reducing thermal power for turbine control valve tests and SI's.



Significant Operational Event

## Unit 1

Date	Time	Event
10/23/82	0100	Reactor thermal power at 95% for turbine control valve test and SI's.
	0150	Turbine control valve tests and SI's complete, holding for SI 4.1.A.10 (Main Steam High Radiation).
	0210	Commenced reducing thermal power when control rod 38-59 scrammed while performing SI 4.1.A.10. The rod scrammed on "C" main steam 1/2 scram "A" channel.
	0400	Reactor thermal power at 87%, holding for SI 4.1.B-10 (Main steam line high rod set point adjustment).
	0600	SI 4.1.A.10 performed again after setpoint adjustment on main steam lines high radiation. Control rod 38-59 scrammed again on 1/2 isolation on channel "A". Holding thermal power at 87% for repair of control rod.
	0930	Commenced power ascension, control rod 38-59 remains out for maintenance.
	1000	Holding power at 97% for backwash and precoat of condensate demineralizer.
	1030	Commenced power ascension from 97% power.
	1200	Reactor thermal power at 99%, maximum flow, rod limited.
	1325	Reactor thermal power at 95% to scram test control rod 38-59.
	1343	Scram test complete on control rod 38-59, commenced power ascension.
	1400	Reactor thermal power at 99%, maximum flow, rod limited.
10/29/82	2015	Commenced reducing thermal power to remove recirculation MG sets from service for brush replacement and for a control rod pattern adjustment.
10/30/82	0600	Reactor thermal power at 50% for recirculation pump MG set brush replacement and for control rod pattern adjustment.
	0615	Control rod pattern adjustment complete, recirculation pumps MG set brush replacement continues.
	0700	Reactor power at 53% for recirculation pumps MG set brush replacement.
	1020	Recirculation pumps MG set brush replacement complete, commenced power ascension.
	1320	Commenced PCIOMR from 75% thermal power.
	1720	Commenced reducing thermal power from 80% for control rod pattern adjustment.

Significant Operational Event

Unit 1

<u>Date</u>	<u>Time</u>	<u>Event</u>
10/30/82	1800	Reactor power at 78% for control rod pattern adjustment.
	1830	Commenced increasing power for control rod pattern adjustments.
10/31/82	0130	Control rod pattern adjustment complete, commenced PCIOMR from 84% thermal power.
	2100	Reactor thermal power at 99%, maximum flow, rod limited.
	2400	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Event

Unit 2

<u>Date</u>	<u>Time</u>	<u>Event</u>
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10/01/82 0001

End-of-cycle 4 refuel outage continues.

Significant Operational Event

## Unit 3

Date	Time	Event
10/01/82	0001	Reactor thermal power at 99%, computer limited.
	1700	Reactor thermal power at 99%, maximum flow, rod limited.
10/02/82	0210	Commenced reducing thermal power for turbine control valve tests and SI's.
	0220	Reactor thermal power at 90% for turbine control valve tests and SI's.
	0235	Turbine control valve tests and SI's complete, commenced power ascension.
	0300	Reactor thermal power at 95%, holding for SI 4.3.A.2 (CRD exercise).
	0330	SI 4.3.A.2 complete, commenced power ascension.
	0430	Reactor thermal power at 99%, maximum flow, rod limited.
10/05/82	2155	Commenced reducing thermal power to remove "C" string high-pressure heater from service for maintenance.
10/06/82	2220	Reactor thermal power at 87%, "C" string high-pressure heaters out of service for maintenance.
	2300	Reactor thermal power at 86% for "C" string high-pressure heater maintenance.
10/07/82	0830	Commenced power ascension from 86% thermal power.
	1400	Reactor thermal power at 96% for "C" string high-pressure heater maintenance.
	1500	Reactor thermal power at 95% for "C" string high-pressure heater maintenance.
	2245	"C" string high-pressure heaters back in service, commenced power ascension.
10/08/82	0310	Commenced PCIOMR from 98% thermal power.
	0400	Reactor thermal power at 99%, maximum flow, rod limited.
10/09/82	2230	Commenced reducing thermal power for removal of "A" reactor feedwater pump from service for maintenance.
	2315	Reactor thermal power at 78% for maintenance on "A" reactor feedwater pump.
10/10/82	1500	Reactor power at 80%, holding for "A" reactor feedwater pump maintenance.
	1605	"A" reactor feedwater pump back in service, commenced power ascension.

Significant Operational Event

## Unit 3

Date	Time	Event
10/10/82	1700	Commenced PCIOMR from 85% thermal power (Control Cell Core).
	2400	Stopped PCIOMR at 88% due to vibration in "B" recirculation pump.
10/11/82	0500	Commenced PCIOMR from 88% thermal power.
	1400	Reactor thermal power at 99%, maximum flow, rod limited.
10/15/82	1150	Reduced thermal power to 97% when control rod 10-35 scrambled.
	1310	Reduced thermal power to 75% to set rod pattern for control rod 10-35.
	1610	Rod pattern set on control rod 10-35, commenced power ascension.
	1830	Reactor thermal power at 99%, maximum flow, rod limited.
10/16/82	0012	Commenced reducing thermal power for turbine control valve tests and SI's.
	0100	Reactor thermal power at 95% for turbine control valve tests and SI's.
	0142	Turbine control valve tests and SI's complete, commenced power ascension.
	0205	Reactor thermal power at 99%, maximum flow, rod limited.
10/20/82	0030	Reduced thermal power to 98% for flux shaping
	0035	Increased thermal power to 99%, maximum flow, rod limited.
10/23/83	0400	Commenced reducing thermal power for turbine control valve tests and SI's.
	0430	Reactor thermal power at 94% for turbine control valve tests and SI's.
	0515	Turbine control valve tests and SI's complete, commenced power ascension.
	0600	Reactor thermal power at 99%, maximum flow, rod limited.
10/30/82	2325	Commenced reducing thermal power for control rod pattern adjustment.
10/31/82	0005	Reactor thermal power at 88% for control rod pattern adjustment.
	0030	Commenced power increase for control rod pattern adjustment.

Significant Operational Event

Unit 3

<u>Date</u>	<u>Time</u>	<u>Event</u>
10/31/82	0100	Commenced PCIOMR from 94% thermal power (Control Cell Core).
	0530	Reactor thermal power at 99%, maximum flow, rod limited.
	2400	Reactor thermal power at 99%, maximum flow, rod limited.

## AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259  
 UNIT Browns Ferry - 1  
 DATE 11-1-82  
 COMPLETED BY T. Thom  
 TELEPHONE 205 729 0834

MONTH October

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>1019</u>	17	<u>1062</u>
2	<u>1021</u>	18	<u>1052</u>
3	<u>1050</u>	19	<u>1061</u>
4	<u>1048</u>	20	<u>1057</u>
5	<u>1050</u>	21	<u>1059</u>
6	<u>1045</u>	22	<u>1061</u>
7	<u>1051</u>	23	<u>1006</u>
8	<u>1046</u>	24	<u>1070</u>
9	<u>870</u>	25	<u>1042</u>
10	<u>981</u>	26	<u>1054</u>
11	<u>1041</u>	27	<u>1056</u>
12	<u>1048</u>	28	<u>1056</u>
13	<u>1055</u>	29	<u>1027</u>
14	<u>1048</u>	30	<u>696</u>
15	<u>1062</u>	31	<u>966</u>
16	<u>1047</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. 50-260  
 UNIT Browns Ferry - 2  
 DATE 11-1-82  
 COMPLETED BY T. Thom  
 TELEPHONE 205 729 0834

MONTH October

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

1	-3
2	-2
3	-2
4	-2
5	-2
6	-2
7	-2
8	-2
9	-2
10	-2
11	-2
12	-2
13	-2
14	-2
15	-2
16	-2

DAY AVERAGE DAILY POWER LEVEL  
(MWe-Net)

17	-2
18	-2
19	-2
20	-2
21	-2
22	-2
23	-2
24	-2
25	-2
26	-2
27	-2
28	-2
29	-2
30	-2
31	-2

## 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 Browns Ferry - 3  
 DATE 11-1-82  
 COMPLETED BY T. Thom  
 TELEPHONE 205 729 0834

MONTH October

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>1062</u>
2	<u>1033</u>
3	<u>1052</u>
4	<u>1049</u>
5	<u>1051</u>
6	<u>1037</u>
7	<u>954</u>
8	<u>1025</u>
9	<u>1036</u>
10	<u>816</u>
11	<u>998</u>
12	<u>1046</u>
13	<u>1057</u>
14	<u>1059</u>
15	<u>1041</u>
16	<u>1042</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>1055</u>
18	<u>1060</u>
19	<u>1061</u>
20	<u>1057</u>
21	<u>1055</u>
22	<u>1060</u>
23	<u>1056</u>
24	<u>1078</u>
25	<u>1042</u>
26	<u>1064</u>
27	<u>1063</u>
28	<u>1063</u>
29	<u>1063</u>
30	<u>1059</u>
31	<u>1039</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 11-1-82  
 COMPLETED BY T. Thom  
 TELEPHONE 205 729 0834

## OPERATING STATUS

1. Unit Name: Browns Ferry - 1
2. Reporting Period: October 1982
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:  
NA

Notes

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

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	745	7,296	72,338
12. Number Of Hours Reactor Was Critical	745	6,737.12	46,051.92
13. Reactor Reserve Shutdown Hours	0	405.98	5,621.18
14. Hours Generator On-Line	745	6,675.52	45,105.69
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,455,054	20,716,370	127,591,277
17. Gross Electrical Energy Generated (MWH)	784,240	6,731,940	42,024,390
18. Net Electrical Energy Generated (MWH)	764,355	6,539,917	40,808,826
19. Unit Service Factor	100	91.5	62.4
20. Unit Availability Factor	100	91.5	62.4
21. Unit Capacity Factor (Using MDC Net)	96.3	84.2	53.0
22. Unit Capacity Factor (Using DER Net)	96.3	84.2	53.0
23. Unit Forced Outage Rate	0	8.5	24.8
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 11-1-82  
 COMPLETED BY T. Thom  
 TELEPHONE 205 729 0834

## OPERATING STATUS

1. Unit Name: <u>Browns Ferry - 2</u>	Notes		
2. Reporting Period: <u>October 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>745</u>	<u>7,296</u>	<u>67,279</u>
12. Number Of Hours Reactor Was Critical	<u>0</u>	<u>4,846.51</u>	<u>43,293.47</u>
13. Reactor Reserve Shutdown Hours	<u>0</u>	<u>203.06</u>	<u>13,684.82</u>
14. Hours Generator On-Line	<u>0</u>	<u>4,778.36</u>	<u>41,975.45</u>
15. Unit Reserve Shutdown Hours	<u>0</u>	<u>0</u>	<u>0</u>
16. Gross Thermal Energy Generated (MWH)	<u>0</u>	<u>13,827,550</u>	<u>120,480,340</u>
17. Gross Electrical Energy Generated (MWH)	<u>0</u>	<u>4,592,260</u>	<u>40,024,908</u>
18. Net Electrical Energy Generated (MWH)	<u>0</u>	<u>4,450,929</u>	<u>38,873,075</u>
19. Unit Service Factor	<u>0</u>	<u>65.5</u>	<u>62.4</u>
20. Unit Availability Factor	<u>0</u>	<u>65.5</u>	<u>62.4</u>
21. Unit Capacity Factor (Using MDC Net)	<u>0</u>	<u>57.3</u>	<u>54.3</u>
22. Unit Capacity Factor (Using DER Net)	<u>0</u>	<u>57.3</u>	<u>54.3</u>
23. Unit Forced Outage Rate	<u>0</u>	<u>5.5</u>	<u>27.1</u>
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each)			
25. If Shut Down At End Of Report Period, Estimated Date of Startup: <u>January 1983</u>			
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 11-1-82  
 COMPLETED BY T. Thom  
 TELEPHONE 205 729 0834

## OPERATING STATUS

1. Unit Name: Browns Ferry - 3  
 2. Reporting Period: October 1982  
 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:  
NA

Notes

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

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	745	7,296	49,704
12. Number Of Hours Reactor Was Critical	745	3,681.30	36,148.28
13. Reactor Reserve Shutdown Hours	0	1,230.62	3,372.15
14. Hours Generator On-Line	745	3,559.28	35,310.06
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,403,910	10,921,148	104,779,768
17. Gross Electrical Energy Generated (MWH)	794,050	3,536,840	34,535,030
18. Net Electrical Energy Generated (MWH)	774,649	3,424,654	33,512,700
19. Unit Service Factor	100	48.8	71.0
20. Unit Availability Factor	100	48.8	71.0
21. Unit Capacity Factor (Using MDC Net)	97.6	44.1	63.3
22. Unit Capacity Factor (Using DER Net)	97.6	44.1	63.3
23. Unit Forced Outage Rate	0	26.8	18.0
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 OCTOBER

DOCKET NO. 50-259  
 UNIT NAME Browns Ferry-1  
 DATE 11-1-82  
 COMPLETED BY T. Thom  
 TELEPHONE 205 729 0834

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
241	10/09/82		S	H					Derated for control rod pattern adjustment
242	10/15/82		F	B					Derated to scram test control rod 46-35
243	10/29/82		F	B					Derated for recirculation pump MG set brush replacement and control rod pattern adjustment

<sup>1</sup> F: Forced  
 S: Scheduled

<sup>2</sup> 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)

<sup>3</sup> Method:  
 1-Manual  
 2-Manual Scram.  
 3-Automatic Scram.  
 4-Other (Explain)

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

<sup>5</sup> Exhibit I - Same Source

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH OCTOBER

DOCKET NO. 50-260  
 UNIT NAME Browns Ferry - 2  
 DATE 11-1-82  
 COMPLETED BY T. Thom  
 TELEPHONE 205 729 0834

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
243	10/1/82	S	745	H	2				EOC-4 Refuel Outage continues

<sup>1</sup>  
 F: Forced  
 S: Scheduled

<sup>2</sup>  
 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)

<sup>3</sup>  
 Method:  
 1-Manual  
 2-Manual Scram.  
 3-Automatic Scram.  
 4-Other (Explain)

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

<sup>5</sup>  
 Exhibit I - Same Source

(9/77)

## UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH OCTOBERDOCKET NO. 50-296UNIT NAME Browns Ferry - 3DATE 11-1-82COMPLETED BY T. ThomTELEPHONE 205 729 0834

No.	Date	Type <sup>1</sup>	Duration (Hours)	Reason <sup>2</sup>	Method of Shutting Down Reactor <sup>3</sup>	Licensee Event Report #	System Code <sup>4</sup>	Component Code <sup>5</sup>	Cause & Corrective Action to Prevent Recurrence
113	10/09/82	F		B					Derated for "A" reactor feedpump maintenance
114	10/15/82	F		H					Derated to set rod pattern for control rod 10-35

1  
F: Forced  
S: Scheduled

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

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

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

5  
Exhibit I - Same Source

(9/77)

CRS EQUIPMENT

INSTRUMENT MAINTENANCE SUMMARY  
FOR THE MONTH OF October 19 82

TE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENT
-1							
-4	3	PS-3-74B	Replace	None	Age	Non-Linear	None
-17	APRM	Relay K 15	Replace	None	Faulty relay	Invalid Alarm	None
-2							
-13	APRM	Function Selector Switch	Replace	None	Faulty Switch	Erratic Switch Action	None
-13	APRM	TR-68-2	Repair	None	Failed Thermo-couple	Incorrect Indication	None
-3							
-13	76	H2R-76-37	Repair	None	Failed Chart Drive Gear	No Chart Drive	None
-15	64	PS-64-56C	Replace	None	Faulty Switch	Instrument Drift	None



CSSC EQUIPMENT

## MECHANICAL MAINTENANCE SUMMARY

For the Month of October 19 82

REF	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
24	LPCI	LPCI MG Set 1DA	bearings noisy	none	faulty bearings	MG set not running properly	replaced bearings on motor end of flywheel "D". TR# 296723
23	LPCI	LPCI MG Set 1DN	bearings noisy	none	faulty bearings	MG set not running properly	replaced "C" flywheel bearing, packed coupling and bearing with proper grease TR# 331823

## CSSC EQUIPMENT

## MECHANICAL MAINTENANCE SUMMARY

For the Month of October 1982

WLE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
-28	CRD	Module 02-39 Valve 85-40A	solenoid valve bad	none	set screw seat worn out	valve not functioning properly	replaced valve TR# 312540
0-7	CRD	Module 18-35 solenoid valve	faulty valve	none	worn valve	valve not functioning properly	changed out solenoid valves TR# 244858
0-6	Fire Protection	2nd floor col. line R12 T-line from "B" RWCU pump	pin hold causing leakage	none	unknown	water leakage	welded hole in fire protection line TR# 274745
-21	Fire Protection	3" line 2nd floor Rx. bld. at end of RBCCW heat exchangers	crack in fire protection line	none	unknown	pipe deteriorated and cracked	welded hole in fire protection line TR# 317481
-25	RHR Service Water	FCV-23-57	faulty seal	none	faulty worn grease seal on operator valve	valve not functioning properly	replaced greased seal TR# 337855
0-5	CRD	Module 34-39	moving drift past "00" position	none	seat ruptured	module not functioning properly	replaced seat disc, retainer & gaskets TR# 312564

## CSSC EQUIPMENT

## MECHANICAL MAINTENANCE SUMMARY

For the Month of October 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
1-15	CRD	Module 10-35 scram pilot "B" valve	faulty valve	none	pilot valve worn out	valve non-functional	installed new repair kit, exhaust diaphragm and pressure diaphragm TR# 276280
-29	D/G	D/G 3ED	problems with mechanical governor	none	slipping friction drive plate past #45	cannot load up generator	changed out governor TR# 249617
-24	D/G	DG 3C #1 Air Compressor	air leak	none	in-line valve faulty	1/8" copper line leaking at ferrule fitting	replaced in-line check valve TR# 274486
-29	Radiation Monitoring	CAM 3-90-251	handle missing on CAM	none	unknown	handle off	replaced handle TR# 216615
1-21	LPCI	LPCI MG Set 3DN	faulty seal	none	coupling seal worn out	bad seal	replace seal, lube with Koppers HP grease TR# 312568
1-20	D/G	DG A Air Comp. #2	faulty air compressor	none	blown head gasket	air leak	replaced head gasket TR# 274678

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of October 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
10/4/82	Fire Protection	K-2 relay in panel 1-25-334	During the performance of SI4.11.C.3&4 local panel 1-25-283 was put in alarm condition. Central panel 1-25-334 did not alarm.	None, heat, smoke, and flow detector operability was not affected.	Bad relay, contact 9-10 of K2 relay failed to remain closed. These normally closed contacts are used to supply AC power for circuit supervision and test functions only.	Required panel 1-25-334 to be taken out of service for repairs.	A roving fire watch was established, the relay was replaced and the SI successfully completed. TR #300553 TR #317524
10/7/82	Fire Protection	Fire alarm panel plugin relay retaining clips.	Survey of retaining clips as a result of LER#BFRO-50-259/8267 dated 9/1/82.	None	Relay retaining clips were found out of position and missing.	Prompted survey of fire alarm panels with similar mounting arrangement.	Replaced missing and tightened loose relay retaining clips in unit 1, 2, and 3 fire alarm panels. Ref. BFRO-259/8267 TR #225370
10/10/82	Fire Protection	Smoke detector XS-39-27A	Operators observed a smoke alarm on panel 9-20. Smoke detector XS-39-27A alarmed and would not clear.	None	Increased detector sensitivity.	The false alarm initiated by XS-39-27A would have masked signals from detector XS-39-27B which is required to be operable.	The bad smoke detector was replaced and the new detector successfully test per SI4.11.C. 1 & 5. TR #266927 LER#BFRO-50-259/8285

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of October 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
9/13/82	Diesel Generators	D/G D governor control circuitry.	While performing SI 4.9.A-1 Supplement A, the control room operator was unable to manually increase the diesel generator speed.	None, two off-site power sources were available and all of the CS and RHR systems and the remaining three units 1 and 2 diesel generators were operable.	During troubleshooting, the diesel generators mode switch was operated several times. These operations corrected the problem. A visual inspection was made of the mode switch and the OMRD4 relay contacts involved in this circuitry with no problems found. The problem is believed to have been caused by slightly dirty contacts.	Diesel generator D was inoperable.	SI 4.9.A-1 Supplement A was successfully performed and the diesel generator returned to service. TR #245345 LER#BFRO-50-259/8280
9/14/82	Core Spray Cooling	FCV-75-22A FCV-75-50A	During the performance of SI 4.5.A.1.C FCV-1-75-22A and FCV-1-75-50A failed to meet the required closing time of 30 seconds.	None	Valves were out of timing calibration.	The valves were slightly slow in closing.	The valves were timed and successfully tested per EMI 18. TR #196582 TR #196583 LER#BFRO-50-259/8279

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of October 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
0/23/82	CRD	FSV 85-39B (38-59) solenoid valve (scram channel "B" pilot valve)	Control rod 38-59 scrambled during $\frac{1}{2}$ scram SI 4.1.A.10.	None, this pilot valve failure could not have prevented scram. Rod could be moved with normal CRD pressure.	Bad coil on the pilot solenoid.	FSV 85-39B inoperable.	The bad solenoid coil was replaced, the rod was successfully test. TR #291651

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of October 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
9/14/82	CRD	CRD 46-35A scram solenoid valve.	CRD 46-35A scrambled from position 48 to 00 on a half scram on "B" channel.	None	Bad solenoid coil.	CRD 46-35 scrambled.	The bad solenoid coil was replaced with coil from unit 2 CRD 54-31B. The CRD operated properly. TR #245334 TR #317583
9/22/82	4-kV Shut down boards and busses	Degraded voltage relays.	During the performance of recurrence control calibration (BFRO-50-296/8213) of degraded voltage relays (SI 4.9.A.4.C) degraded voltage relays 27-211-1C on 4-kV Shtd. Bd. "A" and 27-211-2C on 4-kV Shtd. Bd. "B" were found to operate slightly below the required 3900 to 3940 volt range	None, the other 2 degraded voltage relays on each board were operable, the loss-of-voltage relay channel on each board was available and operable.	Relay sensitive to temperature variation is suspected.	The degraded voltage relays operated at 3885 and 3897 volts as opposed to the required 3900 to 3940 volt range.	The relays were recalibrated to the correct set-points. The set-point drift problem is now being evaluated by TVA Engineering Design and will be addressed in a revision to BFRO-50-259/8213 by 3/1/83. TR #196580 LER#BFRO-50-259/8286

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of October 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
0/24/82	RHR	"IDA" LPCI M/G set voltage regulator.	The M/G set output voltage was erratic.	None, it has been determined that C8 capacitor failure does not make the generator inoperable.	The erratic output voltage was due to the failure of feedback capacitor C8 in the voltage regulator.	Erratic output voltage. M/G set was taken out of service to replace the voltage regulator.	The voltage regulator was replaced, adjusted, and monitored. The voltage remained stable. Similar failures have been analyzed by the Louis Allis Company. This analysis showed that the failure of capacitor C8 would not have a significant effect on the generator output. Ref. LER #BFRO-50-296/8152 R1 TR #266954 LER#BFRO-50-259/8287
0/24/82	RHR	"IEA" LPCI M/G set voltage regulator.	Generator output voltage high.	None	M/G set voltage regulator was out of adjustment.	Generator output voltage was high.	Adjusted the voltage regulator to an acceptable voltage (490 volts) and monitored. The voltage remained stable. TR #266953



CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of October 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
9/29/82	RPS	Relay 5AK-10K located in panel 9-16 (Turb. stop vlv. close scram trip) and relay 2E-K14 located in pnl. 9-30 (auto. blow down)	During inspection of relays (with Lexan coil spools) these relays were found to have cracked coil spools.	None, relays had not failed.	Design, Ref. DPM N74M13	Cracked coil spools.	The relay coils were replaced and the relays successfully tested. TR #241422 TR #241423
10/6/82	SEGT	FS-65-20A and FS-65-20B	During the performance of SI 4.2.A.13 on SEGT trains A, B, and C, FS-65-20A & B failed to operate properly.	None	Bad flow switches FS-65-20A FS-65-20B	SEGT Train A inoperable.	Replaced FS-65-20A and FS-65-20B and successfully completed SI 4.2.A.13. TR #252147

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of October 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
10/19/82	CRD	Accumulator level switches for CRD's 46-19 and 42-07. Pressure switches for CRD's 42-07 and 38-07.	During the performance of EMI 50 the listed component items failed.	None, unit in refueling outage	Level switch for CRD 42-07 grounded, broken wire (grounded) on CRD 46-19. Pressure switch grounded on CRD 38-07, pressure switch corroded (inoperable) on CRD 42-07.	The listed two pressure switches and two scram accumulator level switches were inoperable.	The pressure and level switches were replaced and tested per EMI 50. TR #317591 TR #317592 TR #317594 TR # 317597

CSSC EQUIPMENT

## ELECTRICAL MAINTENANCE SUMMARY

For the Month of October 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
10/20/82	Diesel Generators	"3C" D/G annunciator circuitry on pnl. 9-23C.	Received a "4-kV breaker 1832 and 1834 overload" annunciation.	None	Loose annunciator circuitry card.	Received a false annunciation.	Realigned and tightened card, annunciator operated properly. TR #274685

FIELD SERVICES SUMMARY

October 1982

Major Work AreasA. Refuel Area

The jet pump hold-down beam replacement and fuel inspection program were started during the month of October. The jet pump hold-down beam replacement has not proceeded as projected primarily due to deconning delays and GE tooling inspection problems. This work is currently 10-percent complete. The fuel inspection program is approximately 100-percent completed but no firm direction has been determined at this time.

B. Turbine

During the month of October, work on the turbine floor was centered around completion of magnaflux testing of LP turbines, RFWP turbine "A" and the shrunk-on-wheel inspection of the LP "A" and "B" spindle. This work was accomplished and the repairs that were necessary, based on the magnaflux test, are 95 percent complete. As of this writing final results from the shrunk-on-wheel inspection have not been received from GE. In addition to the above work, all valve work and inner cylinder horizontal joint weld repair was accomplished plus 90 percent of the diaphragm weld repair.

One area that continues to be a logistical problem is not having the ability to move equipment/components from one unit to the other due to the breezeway being cluttered with material. Resolution of the disposition of the contaminated sand would provide a good deal of additional room.

FIELD SERVICES SUMMARY

October 1982

Major Work Areas (Continued)C. Electrical

The major work items during the past month have been in support of the unit 2 cycle 4 outage. The 2B transformer was prepared for shipment to the PSS for repair; preparations were completed for making 1B transformer ready for tie-ins in mid-November; maintenance work for recirculation pump motors A and B is complete except for EMI 81 on 2B; P0392 framework fabrication is complete and ready for setting at its location; P0129 removal of signal sensors is finished; P0426 feedwater control power supply modifications were completed; and MOV limit switches for valve limit torque circuitry has been worked. On going activities include: LPCI conduit/baseplate work and setting of MG sets continues; EMI-71 motor maintenance is at 89 percent, EMI-7 breaker maintenance is at 95 percent, and these items are being worked as systems availability allows; recirculation pump MG set maintenance is approximately 87 percent and expected to be completed in about three weeks; unit 2 emergency lighting is 33-percent complete and on hold for manpower diversion; cable pulls for P0392 were initiated and is parallel activity with conduit work. At present all P0392 work plans have been approved for work, but there have been some delays in obtaining materials. LPRM reconnection work is in progress. P0089 ILRT connector penetrations is underway, P0126 replacement of switches with transmitters is being worked in conjunction with P0392 electrical activities; and P0590 unit 2 control room overhead light modification has started and is approximately 33-percent complete.

FIELD SERVICES SUMMARY

October 1982

Major Work Areas (Continued)D. Mechanical

The CRD changeout was completed during the early part of October. With the completion of CRD changeout, the CRD system was tagged out for tie-in work on SDIV modification and CRD flush connection. During October all 6-inch, 2-inch, and 1-inch pipe removal and removal of SDIV (west header) was completed. Installed SDIV's (east and west header) and completed 12 of 19 6-inch X-ray welds. As of this writing the 12 welds had not been X-rayed. Hanger work associated with P0392 was also worked this month. The MSIV work continued with primary emphasis being placed on valve disassembly, poppet decontamination, and work plan and procedure preparation. Welding of poppets and poppet guides commenced on October 30; however, weld rod problems have slowed progress on getting the poppets ready for installation. The balance-of-plant work continued with waterbox expansion joint maintenance, RHR heat exchanger tube cleaning and snubber replacement, rebuilding, and testing. Local leak rate testing is approximately 70-percent complete, with 14 valves that have not had initial test and 27 valves that require retest. Welding Services, Inc., is performing work on the MSRV vacuum breaker tees and the "M" and "N" tailpipe installation. The "M" and "N" tailpipe work is just getting underway due to the work plan not getting approved until October 15. (Revisions required because of differences in TVA and Welding Services weld procedures).

FIELD SERVICES SUMMARY

October 1982

Major Work Areas (Continued)D. Mechanical (Continued)

On the vacuum breaker tees Welding Services has completed six welds. On the six welds, all were X-rayed and one weld will require rework. The critical path for Welding Services has prevented the 700 mitred elbow and the tailpipe supports in the vent header.

E. Modifications

Reviewed work plans in support of the unit 2 cycle 4 outage. Expedited the solution of modification-related problems through EN DES via Chattanooga Field Services modification group. Started preparation work for unit 1 cycle 5.

F. Torus

During the month of October, the scheduled workload in the torus steadily increased, but manpower remained approximately 25-percent below scheduled numbers. As a result, some jobs fell behind schedule such as: tie-bars, 18-inch RHR modifications, 24-inch HPCI modifications, 10-inch core spray modifications, RHR spray header supports, and wonderbox. Every effort is concentrated to complete bays 5 thru 14 on schedule in order to start the subcontractor on painting as planned.