TENNESSEE VALLEY AUTHORITY

DIVISION OF NUCLEAR POWER

BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT

April 1, 1983 - April 30, 1983

DOCKET NUMBERS 50-259, 50-260, AND 50-296

LICENSE NUMBERS DPR-33, DPR-52, AND DPR-68

Submitted by: J. A. Coppey
Plant Superintendent

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TABLE OF CONTENTS

Operations Summary

April 1983

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 two revisions to previous reportable occurrences reported to the NRC during the month of April.

Unit 1

There were no scrams on the unit during the month. On April 15, the unit was shutdown via a controlled shutdown to start the unit's end-of-cycle 5 refueling outage.

Unit 2

There were no scrams on the unit during the month.

Unit 3

There was one scram on the unit during the month. On April 21, the reactor scrammed from a full MSIV isolation when a spurious isolation signal was received on one channel while the other channel was tripped for a surveillance test.

Principally prepared by B. R. McPherson.

Operations Summary (Continued)

April 1983

Fatigue Usage Evaluation

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

Location	Usage Factor		
	Unit 1	Unit 2	Unit 3
Shell at water line	0.00583	0.00460	0.00395
Feedwater nozzle	0.28294	0.19685	0.14986
Closure studs	0.22349	0.16702	0.12771

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

Common System

Approximately 5.47E+05 gallons of waste liquids were discharged containing approximately 1.01E+00 curies of activities.

Operations Summary (Continued)

April 1983

Refueling Information

Unit 1

Unit 1 began its fifth refueling outage on April 16, 1983. The scheduled restart date is October 7, 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 183 fuel assemblies in the reactor vessel. The spent fuel storage pool presently contains 216 new fuel assemblies, 581 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 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 is scheduled for its fifth refueling beginning on or about June 8, 1984 with a scheduled restart date of November 8, 1984. This refueling outage will involve loading additional 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 change-out, and feedwater sparger inspection.

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

Operations Summary (Continued)

April 1983

Unit 3

Unit 3 is scheduled for its fifth refueling on or about October 11, 1983, with a scheduled restart date of May 4, 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 change-out, finishing TMI-2 modifications, turbine inspection, and change-out 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
4/01	0001	Reactor thermal power at 85%, maximum flow, end-of-cycle 5 coastdown.
4/13	2205	Commenced reducing thermal power for control rod testing.
	2317	Reactor thermal power at 51% for control rod testing.
4/14	0653	Control rod testing complete, commenced power ascension.
	0825	Reactor thermal power at 84% maximum flow, end-of-cycle 5 coastdown.
4/15	2200	Commenced reducing thermal power from 81%, for a controlled shutdown for end-of-cycle 5 refuel outage.
4/16	0125	Manually tripped turbine from 17% power. Unit offline, end-of-cycle 5 refuel outage begins.
	0420	All rods at 00, controlled shutdown complete.
4/30	2400	End-of-cycle 5 refuel outage continues.

Significant Operational Event

Unit 2

Date	Time	Event
4/01	0001	Unit shutdown for maintenance on main turbine and "B" reactor feedwater pump.
	1145	Commenced rod withdrawal for startup.
	1347	Reactor Critical No. 150.
4/02	0511	Rolled turbine generator.
	0514	Tripped turbine at 100 rpm.
	0518	Rolled turbine generator.
	0550	Synchronized generator, commenced power ascension.
4/03	0305	Reduced thermal power from 71% to 68% for control rod pattern adjustment.
	0400	Rod pattern adjusted, commenced PCIOMR from 68% thermal power.
	1002	Reducing thermal power from 73% due to an EHC leak at No. 2 control valve servo valve ("O" ring leaking).
	1200	Reactor power at 71% for maintenance on oil leak on No. 2 control valve servo valve.
	1230	Maintenance complete on No. 2 control valve servo valve. Reducing thermal power to place "B" reactor feedwater pump in service.
	1400	Reactor thermal power at 70%, holding to place "B" reactor feedwater pump in service.
	1452	"B" reactor feedwater pump in service, increased reactor power to 73%, commenced PCIOMR.
4/04	1725	PCIOMR completed, reactor power at 89%, maximum flow, rod limited. Began 12-hour fuel soak.
	2300	Reactor power at 88%, maximum flow rod limited, 12-hour fuel soak in progress.
4/05	0525	Reactor power at 87%, maximum flow, rod limited, 12-hour fuel soak complete.
	1500	Reactor thermal power at 86%, maximum flow, rod limited.
	2240	Commenced reducing thermal power for control rod pattern adjustment.
	2315	Reactor power at 62% for control rod pattern adjustment.
	2400	Control rod pattern adjustment in progress, reducing thermal power.
4/06	0200	Reactor thermal power at 60%, control rod pattern adjustment in progress.
	0230	Control rod pattern adjustment complete, commenced power ascension.
	0400	Commenced PCIOMR from 64% thermal power.

Significant Operational Event

Unit 2

Date	Time	Event
4/07	0800	Reactor thermal power at 94%, maximum flow, rod limited.
	1500	Reactor thermal power at 92%, maximum flow, rod limited.
	2300	Reactor thermal power at 91%, maximum flow, rod limited.
4/08	0700	Reactor thermal power at 90%, maximum flow, rod limited.
	2145	Commenced reducing thermal power from 90% for turbine control valve test.
	2400	Reactor thermal power at 68% for turbine control valve test.
4/09	0025	Turbine control valve test complete, holding for SI 4.1.A-15 (Turbine Stop Valve Closure).
	0105	SI 4.1.A-15 complete, holding at 68% for SI 4.1.A.11 (MSIV Closure).
	0135	SI 4.1.A-11 complete, holding for SI 4.2.A-8 (MSL High Temperature).
	0425	SI 4.2.A-8 complete, commenced power ascension.
	0730	Reactor thermal power at 70%, for RTI-23 (Feedwater System).
	1100	Reactor thermal power at 71% for RTI-23.
	1400	Reactor thermal power at 72% for RTI-23.
	1430	RTI-23 complete, commenced power ascension.
	1455	Commenced PCIOMR from 84% thermal power.
	1715	Commenced reducing thermal power from 92% due to a Xenon transient.
	1745	Reactor power at 89% due to a Xenon transient.
	1800	Commenced PCIOMR from 89% thermal power.
	2135	Commenced reducing thermal power from 92% for control rod pattern adjustment.
	2400	Reactor thermal power at 68%, control rod pattern adjustment in progress, power increasing.
4/10	0240	Reactor thermal power at 72%, control rod pattern adjustment complete, reducing power to bring R factor into limits.
	0350	Reactor power at 64%, R factor in limits, commenced power ascension.
	0905	Reactor thermal power at 79%, reducing power for RTI-32A (Recirculation Motor-Generator Set Speed Control).
	1250	Reactor power at 60%, RTI-32A in progress, increasing power.
	1300	Reactor power at 70% for RTI-32A, reducing thermal power.

Significant Operational Event

Unit 2

Date	Time	Event
4/10	1500	Reactor power at 51% for RTI-32A, increasing thermal power.
	1600	Reactor power at 70% for RTI-32A, reducing thermal power.
	1800	Reactor power at 48% (RTI-32A) complete, holding for checks on core limits.
	1825	Commenced rod withdrawal for control rod pattern adjustment.
	2130	Control rod pattern adjustment complete, commenced power ascension from 73% thermal power.
	2200	Commenced PCIOMR from 78% thermal power.
4/11	1455	Reactor thermal power at 95%, maximum flow, rod limited.
4/12	0600	Reactor thermal power at 92%, maximum flow, rod limited.
	0645	Commenced reducing thermal power for special testing on torus (PMT 105).
	0800	Reactor power at 65%, PMT 105 in progress, reducing thermal power.
	0900	Reactor power at 60% for PMT 105.
	1300	Reactor power at 58% for PMT 105, increasing thermal power.
	1400	Reactor thermal power at 59% for PMT 105.
	1500	Reactor power at 58% for PMT 105, increasing thermal power.
4/13	0026	Reactor power at 62% for PMT 105, increasing thermal power.
	0900	Reactor power at 65% for PMT 105, reducing power.
	1000	Reactor power at 61% for PMT 105.
	1015	PMT 105 complete, commenced power ascension.
	1300	Commenced PCIOMR from 68% thermal power.
4/14	0833	"B" reactor feedwater pump tripped, reducing thermal power from 84%.
	1100	Reactor power at 72%, "B" reactor feedwater pump out-of-service.
	1130	"B" reactor feedwater pump returned to service, commenced PCIOMR.
4/15	1700	Reactor thermal power at 98%, maximum flow, rod limited.

Significant Operational Event

Unit 2

Date	Time	Event
4/20	1500	Reactor thermal power at 94%, maximum flow, rod limited.
4/23	2030	Commenced reducing thermal power from 94% for control rod pattern adjustment.
	2116	Reactor power at 65%, for control rod pattern adjustment, increasing thermal power.
	2245	Control rod pattern adjustment complete, commenced PCIOMR from 67% thermal power.
4/25	0730	Reactor thermal power at 97%, SI 4.1.A-7 (Reactor Low Water Level) in progress, decreasing thermal power.
	1253	SI 4.1.A-7 complete, commenced PCIOMR from 96% thermal power.
4/26	0900	Reactor thermal power at 99%, maximum flow, rod limited.
	2000	Reactor thermal power at 98%, maximum flow, rod limited.
4/28	1030	Reducing thermal power for SI 4.3.B.1.a (Control Rod Coupling Integrity)
	1100	Reactor power at 96% for SI 4.3.B.1.a.
	1130	SI 4.3.B.1.a complete, commenced power ascension.
	1500	Reactor thermal power at 100%, maximum flow, rod limited.
4/29	0700	Reactor thermal power at 99%, full load electrical.
4/30	0955	Commenced reducing thermal power for replacement of No. 1 control valve servo valve.
	1015	Reactor thermal power at 87% for servo valve replacement.
	1123	No. 1 stop valve servo valve replacement complete, commenced power ascension.
	1400	Reactor thermal power at 100%, maximum flow, rod limited.
	2400	Reactor thermal power at 100%, maximum flow, rod limited.

Significant Operational Event

Unit 3

Date	Time	Event
4/01	0001	Reactor thermal power at 100%, maximum flow, rod limited.
4/03	0040	Commenced reducing thermal power for SI 4.3.A.2 (Control Rod Drive Exercise).
	0100	Reactor thermal power at 96% for SI 4.3.A.2.
	0155	SI 4.3.A.2 complete, commenced power ascension.
	0300	Reactor thermal power at 100%, maximum flow, rod limited.
4/04	1210	Reduced thermal power to 98%, computer malfunction.
4/05	1519	Computer back in service, commenced power ascension.
	1620	Reactor thermal power at 100%, maximum flow, rod limited.
4/07	0225	Commenced reducing thermal power per request of dispatcher (load not needed.)
	0310	Reactor thermal power at 73% (additional load not needed per dispatcher.)
	0435	Commenced power ascension from 73% power.
	0900	Reactor thermal power at 100%, maximum flow, rod limited.
4/08	0500	Reactor thermal power at 99%, maximum flow, rod limited.
4/10	0005	Commenced reducing thermal power for turbine control valve test and SI's.
	0025	Reactor thermal power at 92% for turbine control valve test and SI's.
	0030	Turbine control valve test and SI's complete, commenced power ascension.
	0050	Holding reactor power at 97% for Xenon transient.
	0125	Reactor power at 97%, computer malfunction.
	0700	Reactor power at 98%, computer out-of-service for maintenance.
	1230	Commenced power ascension from 98% thermal power.
	1400	Reactor thermal power at 100%, maximum flow.
4/11	0700	Reactor thermal power at 99%, computer out-of-service.
	2233	Computer back in service, commenced power ascension.
	2300	Reactor power at 100%, maximum flow, rod limited.
4/16	0200	Reducing thermal power for turbine control valve test and SI's.

Significant Operational Event

Unit 3

Date	Time	Event
4/16	0230	Reactor thermal power at 98% for turbine control valve test and SI's.
	0250	Turbine control valve test and SI's complete, commenced power ascension.
	0300	Reactor thermal power at 100%, maximum flow, rod limited.
4/21	0903	Reactor Scram No. 110 from 100% thermal power. During performance of SI 4.2.A-7 (High Flow Main Steam Line) step 4.10 for P.S.-1-13A, a full MSIV isolation and resulting reactor trip was encountered when a four-cycle duration "B" channel isolation was received while "A" channel was tripped per the test procedure. The reason for the spurious "B" channel signal is undetermined.
4/22	0350	Reactor Critical No. 124.
	1853	Commenced rod withdrawal for startup.
	2020	Rolled turbine generator.
	2059	Synchronized generator, commenced power ascension.
4/23	2100	Commenced PCIOMR from 75% thermal power.
4/24	2300	Reactor thermal power at 100%, maximum flow, rod limited.
4/25	0615	A-3 low-pressure heater drain valve failed closed, "A" string low-pressure heater isolated, commenced reducing thermal power.
	1500	Reactor power at 90%, holding due to isolation of "A" string low-pressure heater.
	1631	"A" string low-pressure heaters in service, commenced power ascension.
	1705	Commenced PCIOMR from 92% thermal power.
	2300	Reactor thermal power at 100%, maximum flow, rod limited.
4/27	0700	Computer out-of-service for repair, reactor power reduced to 99%.
	2226	Computer back in service, commenced power ascension.
	2400	Reactor power at 100%, maximum flow, rod limited.
4/28	2220	Commenced reducing thermal power for control rod pattern adjustment.
	2400	Reactor power at 74% for control rod pattern adjustment.

Significant Operational Event

Unit 3

Date	Time	Event
4/30	0020	Control rod pattern adjustment complete, reducing thermal power for recirculation pump motor-generator set brush replacement.
	0300	Reactor power at 50% for recirculation motor-generator set brush replacement.
	0316	Recirculation pump motor-generator set brush replacement complete, commenced power ascension.
	0830	Commenced PCIOMR from 82% thermal power.
	0930	Stopped PCIOMR at 84% power due to computer problems.
	1300	Commenced PCIOMR from 84% power.
	2400	Reactor thermal power at 93%, PCIOMR in progress.

This was principally prepared by F. D. Green.

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
UNIT Browns Ferry-1
DATE 5-1-83
COMPLETED BY T. Thom
TELEPHONE 205/729-0834

MONTH April

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	902	17	-12
2	863	18	-10
3	877	19	-10
4	873	20	-10
5	871	21	-10
6	864	22	-9
7	865	23	-9
8	855	24	-10
9	829	25	-9
10	845	26	-9
11	846	27	-9
12	849	28	-10
13	819	29	-9
14	743	30	-9
15	820	31	
16	-1		

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 5-1-83
COMPLETED BY T. Thom
TELEPHONE 205/729-0834

MONTH April

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	-10	17	1022
2	319	18	1018
3	761	19	1025
4	921	20	1022
5	922	21	1025
6	791	22	1026
7	1006	23	987
8	962	24	871
9	812	25	1009
10	716	26	1068
11	977	27	1070
12	733	28	1083
13	709	29	1092
14	826	30	1061
15	1010	31	
16	1038		

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 5-1-83
COMPLETED BY T. Thom
TELEPHONE 205/729-0834

MONTH April

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1078	17	1043
2	1036	18	1059
3	1054	19	1061
4	1047	20	1060
5	1051	21	391
6	1058	22	22
7	1035	23	718
8	1057	24	1004
9	1054	25	961
10	1053	26	1055
11	1058	27	1053
12	1068	28	1062
13	1062	29	1031
14	1057	30	868
15	1063	31	
16	1084		

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. 50-260
DATE 5-1-83
COMPLETED BY T. Thom
TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - 2
2. Reporting Period: April 1983
3. Licensed Thermal Power (MWt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:
N/A
9. Power Level To Which Restricted, If Any (Net MWe): N/A
10. Reasons For Restrictions, If Any: N/A

Notes

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	719	2,879	71,622
12. Number Of Hours Reactor Was Critical	705.22	989.47	44,282.94
13. Reactor Reserve Shutdown Hours	13.78	15.78	13,700.60
14. Hours Generator On-Line	689.17	919.64	42,895.09
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	1,951,711	2,347,229	122,827,569
17. Gross Electrical Energy Generated (MWH)	660,520	794,240	40,819,148
18. Net Electrical Energy Generated (MWH)	643,353	769,186	39,642,261
19. Unit Service Factor	95.9	31.9	59.9
20. Unit Availability Factor	95.9	31.9	59.9
21. Unit Capacity Factor (Using MDC Net)	84.0	25.1	52.0
22. Unit Capacity Factor (Using DER Net)	84.0	25.1	52.0
23. Unit Forced Outage Rate	4.1	8.5	26.8

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. 50-259
DATE 5-1-83
COMPLETED BY T. Thom
TELEPHONE (205)729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - 1
2. Reporting Period: April 1983
3. Licensed Thermal Power (MWt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons: N/A

Notes

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

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	719	2,879	76,681
12. Number Of Hours Reactor Was Critical	364.33	2,363.25	49,752,79
13. Reactor Reserve Shutdown Hours	0	47.71	5,785.02
14. Hours Generator On-Line	361.42	2,317.52	48,717.64
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	957,619	6,784675	138,557.679
17. Gross Electrical Energy Generated (MWH)	315,210	2,244,900	45,645,620
18. Net Electrical Energy Generated (MWH)	302,196	2,175,548	44,325,327
19. Unit Service Factor	50.3	80.5	63.7
20. Unit Availability Factor	50.3	80.5	63.7
21. Unit Capacity Factor (Using MDC Net)	39.5	71.0	54.3
22. Unit Capacity Factor (Using DER Net)	39.5	71.0	54.3
23. Unit Forced Outage Rate	0	8.1	23.8

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. 50-296
DATE 5-1-83
COMPLETED BY T. Thom
TELEPHONE 205/729-0834

OPERATING STATUS

1. Unit Name: Browns Ferry - 3
2. Reporting Period: April 1983
3. Licensed Thermal Power (MWt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065
8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons: N/A

Notes

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

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	719	2,879	54,047
12. Number Of Hours Reactor Was Critical	700.22	2,416.52	40,028.80
13. Reactor Reserve Shutdown Hours	18.78	462.48	3,834.63
14. Hours Generator On-Line	683.07	2,373.50	39,147.56
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,178,312	7,496,501	116,832,605
17. Gross Electrical Energy Generated (MWH)	721,130	2,492,520	38,532,310
18. Net Electrical Energy Generated (MWH)	702,072	2,424,177	37,405,081
19. Unit Service Factor	95.0	82.4	72.4
20. Unit Availability Factor	95.0	82.4	72.4
21. Unit Capacity Factor (Using MDC Net)	91.7	79.1	65.0
22. Unit Capacity Factor (Using DER Net)	91.7	79.1	65.0
23. Unit Forced Outage Rate	5.0	17.6	17.4

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 April

DOCKET NO. 50-259
UNIT NAME Browns Ferry-1
DATE 5-1-83
COMPLETED BY T. Thom
TELEPHONE 205/729-0834

No.	Date	Type[1]	Duration (Hours)	Reason[2]	Method of Shutting Down Reactor[3]	Licensee Event Report #	System Code[4]	Component Code[5]	Cause & Corrective Action to Prevent Recurrence
263	4/13/83	S		B					Derated for control rod testing.
264	4/16/83	S	357.58	C	4				Manually tripped turbine to begin EOC-5 refuel outage. No reactor scram--controlled shutdown. One hour adjustment for CDT.

1
F: Forced
S: Scheduled

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

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

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

5
Exhibit I - Same Source

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH April

DOCKET NO. 50-260
UNIT NAME Browns Ferry-2
DATE 5-1-83
COMPLETED BY T. Thom
TELEPHONE 205/729-0834

No.	Date	Type[1]	Duration (Hours)	Reason[2]	Method of Shutting Down Reactor[3]	Licensee Event Report #	System Code[4]	Component Code[5]	Cause & Corrective Action to Prevent Recurrence
249	4/5/83	S		H					Derated for control rod pattern adjustment
250	4/8/83	S		B					Derated for turbine control valve test and SI's.
251	4/12/83	F		B					Derated for PMT 105 Torus Special Test
252	4/23/83	S		H					Derated for control rod pattern adjustment

1
F: Forced
S: Scheduled

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

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

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

5
Exhibit I - Same Source

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

REPORT MONTH April

DOCKET NO. 50-296
UNIT NAME Browns Ferry-3
DATE 5-1-83
COMPLETED BY T. Thom
TELEPHONE 2057729-0834

No.	Date	Type[1]	Duration (Hours)	Reason[2]	Method of Shutting Down Reactor[3]	Licensee Event Report #	System Code[4]	Component Code[5]	Cause & Corrective Action to Prevent Recurrence
129	4/7/83	F		H					Derated-load not needed
130	4/21/83	F	35.93	H	3				Reactor scram during SI 4.2.A.7 (High Flow Main Steam Line) on spurious "B" channel isolation
131	4/29/83	S		H					Derated for control rod pattern adjustment

1
F: Forced
S: Scheduled

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

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

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

5
Exhibit I - Same Source

(9/77)

INSTRUMENT MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF April 19 83

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PREVENT RECURRENCE
U-1							
4-3	80	TR-80-1	Repair	None	Normal Wear	Loss of record	None
4-4	90	RM-90-256	Calibration	None	Inst. Drift	Incorrect reading	None
U-2							
4-9	71	P1-71-20	Calibration	None	Inst. Drift	Incorrect reading	None
4-9	71	P1-71-35	Calibration	None	Inst. Drift	Incorrect reading	None
U-3							
4-12	64	TS-64-70	Replace	None	Normal Wear	Incorrect setpoint	None
4-18	74	FR-74-64	Calibration	None	Inst. Drift	Incorrect record	None
4-19	71	FT-71-1A	Repair	None	Age	Incorrect output	None

BROWNS FERRY NUCLEAR PLANT UNIT 3

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 19 83

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
4/23/83	Diesel Generator 125VDC System	"A" battery charger on 3B diesel generator.	Received a abnormal alarm in the control room for 3A battery charger.	None	Alarm relay (PFC) contacts stuck.	Recieved a false alarm "Diesel generator 3A battery charger or exhaust fans abnormal" in the control room.	Cleaned the relay contacts, the relay operated properly. MR #A-149453
4/29/83	Air Conditioning (Cooling-Heating)	4KV shutdown board room 3EC air handling unit 3B2.	Air handling unit tripping out.	None	Chiller low on freon and water strainer stopped up.	Chiller inoperable.	Added freon to chiller unit and cleaned water strainers, chiller returned to service. MR #A-147619

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 19 83

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
4/20/83	250 volt DC System	250V main battery charger #1.	Battery charger was not charging properly.	None	Bad circuit cards.	Battery charger current unstable.	Replaced the bad printed circuit cards, charger operated properly. MR #A-140815
4/21/83	Diesel Generators	Relay TRA-3 on panel 25-46A.	Relay coil retainer (lexan) spool inspection.	None, relay was operable:	Failure of lexan coil retainer spools. Ref: HFA Relay Coils Service Advice PSM-721-152.2 FSR 366E8138.	Relay coil retainer spool cracked. The relay was found to have a cracked coil spool during inspection.	The relay was replaced per SEMI 37. MR #A-059080
4/22/83	CRD	1-PVC-85-23	The valve breaker tripping during valve operation.	1-PVC-85-23 inoperable.	Iron core was loose in the valve brake assembly which caused the brake to fail to release.	1-PVC-85-23 was inoperable.	Tightened brake assembly, valve operated properly. MR #A-147026

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 19 83

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
4/12/83	480 volt Reactor MOV Boards	480V Rx MOV Bd 1E normal and alternate feeder breakers.	Inspection of ITE K-600S breakers in response to IE Information Notice No. 81-06.	None	Incorrect splices in wiring for the magnetic latch and the trip coil circuits of the ITE K-600S breakers. Wires spliced were 16 AWG and 18 AWG sizes. The lugs found were for 14-16 AWG wire.	The lugs were improperly sized for the wire. The splices would meet their required function. However, the lugs were replaced with a parallel splice for 16-18 AWG wire. This required removing LPCI MG Set 1EN from service on 4/12/83 and 4/13/83.	The lugs were replaced with a parallel splice for 16-18 AWG wire in both the 480 volt Rx. MOV Bd 1E normal and alternate feeder breakers. MR #A-061316 MR #A-140432 MR #A-061336 MR #A-140431 25
4/12/83	Air Conditioning (Cooling-Heating)	"1B" control bay chiller chilled water line sensing element.	Unable to regulate chiller.	None	Sensing element broken.	Chiller inoperable.	Replaced the sensing element and returned the chiller to service. MR #A-140532
4/14/83	Fuel Pool Cooling	Fuel pool low level switch LS-78-2B.	During the performance of scheduled EMI 48 LS-78-2B failed to operate.	None	Bad level switch.	Fuel pool low level alarm inoperable.	Replaced LS-78-2B and successfully completed EMI 48. MR #A-149766

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of April 1983

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
3/25/83	Standby Gas Treatment	Standby gas treatment train "B" flow switch FS-65-42A.	During the performance of SI 4.2.A-13 FS-65-42A was found to operate erratically	SBGT train "B" inoperable.	Bad flow switch.	"B" SBGT train inoperable.	The flow switch was replaced, SI 4.7.B-1 and SI 4.2.A-13 were successfully completed. The paddle type flow switches presently being used are expected to be replaced with differential pressure switches by 2/15/84. MR #074884 LER#BFRO-50-259/83018
4/10/83	Fire Protection	Smoke detector XS-39-66XM.	XS-39-66XM gave a false alarm.	None	Water, from an unknown source, leaking through a seam in the concrete from an upper elevation entered the smoke detector and caused it to alarm.	The alarm could have masked signals from other detectors which are required to be operable.	Replaced the smoke detector and successfully performed SI 4.11.C. 1 & 5. This smoke detector will be relocated by 5/17/83. MR #A-149687 LER#BFRO-50-259/83019

BROWNS FERRY NUCLEAR PLANT UNIT Common

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of April 19 83

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-21	Radwaste	low-level cask	bolt hole inserts need replacing	none	normal use of holes	bolt failure to tighten	changed inserts #15 and 16 MR 154531
3-30	Radwaste	low-level cask	inserts stripped on cask	none	frequent removal and replacement of head bolts	cask failure to accomodate head bolts	welded in new inserts MR 74238
4-19	RHRSW	valve C2	valve non-functional	none	broken nipple	valve would not operate properly	replaced 1" screwed nipple MR 131703

27

BROWNS FERRY NUCLEAR PLANT UNIT 1

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of April 19 83

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-24	Service Air	air compressor 1C and safety valve	head gasket failure	none	blown gasket	air leak on high-pressure head and valve on low pressure	replaced high-pressure gaskets MR 149983
4-12	Fire Protection	3" fire protection pipe and fittings	eroded fire protection pipe and fittings	none	unknown	fire protection line corroded	welded in new sections of piping and fittings MR 28348

CSSC EQUIPMENT

BROWNS FERRY NUCLEAR PLANT UNIT 2

MECHANICAL MAINTENANCE SUMMARY

For the Month of April 19 83

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-25	Fire Protection	3" fire protection line pipe and fittings	fire protection line leaking	none	unknown	pipe corroded	replaced 3" fire protection line & fittings MR 62208
4-23	CRD	CRD pump 1B	pump nonfunctional	none	normal wear long time operation	pump inoperable	replaced mech. seal and bearing on inboard side, lube, realigned pump MR 60729
4-4	EHC (Non-CSSC)	FCV-1-80 Servo Valve	valve leaking	none	faulty o-ring	EHC fluid leak came close to unit shutdown	replaced servo valve MR 130379
4-31	HPCI	LS-73-5	faulty level control switch	none	age and poor design	control switch inoperable	replaced liquid level control switch MR 60670
4-5	HPCI	impeller hub	broken hub	none	hub bursted while pulling off motor	impeller inoperable	welded hub on impeller MR 58991
4-7	CAM	CAM 90-256	air leak	none	faulty o-ring	air leak on pig on CAM	replaced o-rings MR 129781
4-7	Control Air	drywell air compressor 2A	compressor failed	none	compressor went bad	compressor inoperable	repacked valve MR 63512
4-1	RHR Service Water	FCV-23-34	valve failure	none	worn packing	valve would not function properly	repacked valve MR 130364

BROWNS FERRY NUCLEAR PLANT UNIT 3

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of April 19 83

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
4-8	Diesel Generator	3D diesel air compressor B	air compressor nonfunctional	none	blown head gasket	air leak on compressor	replaced head gasket MR 60675
4-12	EECW	EECW pump A3 air release valve - 587	valve inoperable	none	internal parts worn out	valve would not operate	replaced air release valve MR 149465
4-19	Fire Protection	3" fire protection line nonfunctional	fire protection line nonfunctional	none	unknown	fire protection line leaking	welded in new eroded 3" fire protection line MR 62207

FIELD SERVICES SUMMARY

April 1983

Major Work Areas

A. Refuel area - a controlled shutdown of unit 1 began on April 15 with cold shutdown being reached April 16, 1983. Vessel disassembly began the following morning but was stopped when the RPV head removal introduced airborne contamination to the floor. The airborne problem was resolved and vessel disassembly was completed on April 21. Fuel unload began at 0600 hours on April 22. At step 130 fuel movement was stopped because the fuel was placed in an untested fuel storage rack. The fuel was transferred to another rack and fuel movement resumed. On April 28, 1983 the bridge crane was out-of-service for 6-hours due to CAM breaker problems and grapple air leaks. Repairs were made to the crane and fuel movement resumed with 545 steps of 764 completed at 1300 hours on April 30, 1983.

B. Turbine - following the installation of the main steam line plugs the low-pressure "A" and "B" turbines and bypass valves were disassembled. Both low-pressure turbine inner cylinders were found to have high-radiation readings requiring them to be wrapped in Herculite before moving to the unit 3 turbine floor. Due to these high-radiation readings, many of the turbine components will require decontamination.

C. Drywell - the initial high-pressure readings in the drywell revealed lower radiation levels than expected, but still very hot and decontamination was required in some areas. Following decontamination the rod gallery IRM/SRM reroute was performed.

Major Work Areas (Continued)

C. Drywell (Continued)

All four MSIV lines were tested and failed the LLRT. Preparations for valve maintenance were started. Removal of the MSRV's for maintenance was started following main steam line plug installation.

D. Electrical - prior to the start of the unit 1 cycle 5 refueling outage, preparations were made to support the various maintenance and modifications to be performed by the electrical group. These included writing work plans, checking material status, installing torus temporary and permanent power supplies, and performing electrical checks on outage related equipment.

Once unit 1 was shutdown, the majority of electrical work consisted of performing EMI-71 motor maintenance, removing TIP indexers and TIP tubing, installing conduit and equipment for ECN P0399, disassembling recirculation motor-generator sets for maintenance, and writing workplans. Additional work that supported the outage included relamping the drywell, installing torus power supplies, checking the undervessel hoist for CRD changeout, and repairing the unit 3 overhead turbine crane.

FIELD SERVICES SUMMARY (Continued)

April 1983

Major Work Areas (Continued)

E. Mechanical - following the completion of unit 2 cycle 4 refueling outage in March, preparations were made for the unit 1 cycle 5 refueling outage. These preparations included mechanical checks of equipment to be used during the outage, writing work plans, prefabrication of ECN P0392 components, and setting up to hydrolaze the CRD header.

Work that commenced with the unit 1 shutdown included units 1 and 2 diesel-generator cooler piping modifications, units 1 and 2 PSC head tank pump repair, hydrolazing and installing shielding to the CRD header, preparations for probolog, mechanical checks of the under-vessel hoist, prefabrication of ECN P0392 and P0612, and RHRSW valve changeout. The scram discharge header prefabrication, RHRSW check valve, and diesel generator cooler were Section X.I modifications.

F. Planning and Scheduling - in preparation for the unit 1 cycle 5 refueling outage, the planning and scheduling group prepared overview schedules of the outage work to facilitate manpower planning. A manpower load-board was prepared indicating all craft and support personnel required for the outage. Further development of the PROJECT/2 computerized network was performed, including final coordination with the individual engineering groups.

FIELD SERVICES SUMMARY (Continued)

April 1983

Major Work Areas (Continued)

F. Planning and Scheduling (Continued)

Once the outage began, this group reported status and presented schedules indicating the work to be accomplished. General coordination was provided with daily and weekly coordination meetings.

G. Torus

1. External and internal modifications - prior to the start of the outage, work was performed on the external reinforcements. By April 15 the lapplates were 60-percent complete, ECCS gussets were 80-percent complete, and four out of 16 snubber wall brackets were installed.

Following unit shutdown, work continued on the external modifications and power supplies were set up for the internal modifications. Williams Contractor began decontamination and sandblasting inside the vent headers. Once the torus was opened and air samples taken, stainless steel grating was installed on the catwalk. Draindown of the torus is awaiting the completion of core unload and closing of fuel pool gates.

2. Attach piping - the scope of this work changed dramatically during the preoutage time frame, therefore, the major effort was directed toward identifying the work, coordinating with system outage windows, and reviewing drawings. Hangers were prefabricated during this time with 174 of 338 completed by April 15.

FIELD SERVICES SUMMARY (Continued)

April 1983

Major Work Areas (Continued)

G. Torus (Continued)

2. (Continued)

After the unit was taken offline, work continued in the prefabrication shops and baseplate installation began in the field. Drywell and torus purge, high pressure coolant injection (HPCI), and reactor core isolation cooling (RCIC) systems were released on April 21 for hanger installation. Due to operational concerns, work on the residual heat removal (RHR) Loop II system could not begin until a safety evaluation from EN DES was completed. This delayed hanger installation on this critical system until April 27. The present status of all torus hanger work is: HPCI and RCIC - two installed, RHR Loop II - five installed, prefabrication - 192 of 357.

H. Administrative - the overtime percentage for the month of March was 15-percent, with 113,729.5 straight-time hours and 19,873.5 overtime hours. As of March 31, 1983 year-to-date overtime percentage was 20-percent, 802,878 straight-time hours and 197,376 overtime hours. The overtime percentage from April 1 thru April 24 was 25.4-percent. The overall goal of the overtime percentage is 17 percent.

FIELD SERVICES SUMMARY (Continued)

April 1983

Major Work Areas (Continued)

H. Administrative (Continued)

The O&M budget for March was $2,309,276 and the expenditures were $3,382,492 with year-to-date budget being $16,924,095 and actual year-to-date expenditures being $16,557,978. The capital budget was $5,071,392 and the expenditures were $917,290 with year-to-date budget being $23,202,222 and actual year-to-date expenditures being $8,839,099. Overall budget was $7,380,668 and the overall expenditures were $4,303,237 with year-to-date budget being $40,126,317 and actual year-to-date expenditures being $25,408,658.

Significant Problem Areas

Obtaining material for CRD changeout has been a major area of concern. Additionally, there is much concern over the potential for exposure problems on unit 1. Increased ALARA attention is going to be necessary.

Administrative and procedure burdens are also significant concerns in accomplishing Field Service work. Training needs are even more significant than previous.

TENNESSEE VALLEY AUTHORITY
Browns Ferry Nuclear Plant
P. O. Box 2000
Decatur, Alabama 35602

MAY 11 1983

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

Gentlemen:

Enclosed is the April 1983 Monthly Operating Report for Browns Ferry Nuclear Plant Units 1, 2, and 3.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. A. Coffey
Acting Power Plant Superintendent

Enclosures
cc: Director, Region II
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