TENNESSEE VALLEY AUTHORITY

DIVISION OF POWER PRODUCTION

BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT

June 1, 1981 - June 30, 1981

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

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

Submitted By: Herbert Abercrombie
Plant Superintendent

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Operations Summary

June 1981

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

There were 21 reportable occurrences and eight revisions to a previous reportable occurrence reported to the NRC during the month of June.

Unit 1

Unit 1 was in its EOC-4 refueling outage the entire month.

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 June 28, the reactor scrammed from the MSIV's closing when two heaters on the B and D main steam lines and one heater on the C main steam line were energized during a surveillance instruction on the main steam line tunnel high temperature isolation instrumentation.

Operations Summary (Continued)

June 1981

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	0.00503	0.00405	0.00348
Feedwater nozzle	0.24411	0.17393	0.13450
Closure studs	0.19865	0.13892	0.10449

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

Common System

Approximately 8.82E+05 gallons of waste liquid were discharged containing approximately 1.11E+00 curies of activities. .

Operations Summary (Continued)

June 1981

Unit 1

Unit 1 began its EOC-4 refueling outage on April 11, with a scheduled restart date of August 19, 1981. This refueling will involve loading additional 8 X 8 R (retrofit) fuel assemblies into the core, the final fix on the sparger modification, power supply on LPCI modification, generator breaker and unit station transformer tie-in (requires Unit 2 to be shutdown), and torus modifications.

There are 0 fuel assemblies in the reactor vessel. The spent fuel storage pool presently contains 764 EOC-4 fuel assemblies, 550 spent 7 X 7 fuel assemblies, five 8 X 8 spent fuel assemblies. 260 new 8 X 8 R fuel assemblies, and one spent 8 X 8 R fuel assembly. Because of modification work to increase spent fuel pool capacity to 3471 assemblies, present available capacity is limited to 384 locations.

Unit 2

Unit 2 is scheduled for its fourth refueling beginning on or about March 26, 1982, with a scheduled restart date of August 13, 1982. This refueling outage will involve completing relief valve modifications, torus modifications, "A" low pressure turbine inspection, MG set installation for LPCI modification, and loading additional 8 X 8 R fuel assemblies into the core.

There are 764 fuel assemblies in the reactor vessel. At the end of the month, there were 132 discharged cycle 1 fuel assemblies, 156 discharged cycle 2 fuel assemblies, and 352 discharged cycle 3 fuel assemblies in the spent fuel

Operations Summary (Continued)

June 1981

Unit 2 (Continued)

storage pool. The present available capacity of the spent fuel pool is 160 storage locations. With present capacity, the 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, but cannot be used until Special Test 161 is completed.

Unit 3

Unit 3 is scheduled for its fourth refueling beginning on or about September 25, 1981, with a scheduled restart date of January 23, 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 764 fuel assemblies presently in the reactor vessel. There are 124 discharged cycle 3 fuel assemblies, 144 discharged cycle 2 fuel assemblies, and 208 discharged cycle 1 fuel assemblies in the spent fuel storage pool. The present available storage capacity of the spent fuel pool is 1052 locations.

Significant Operational Events

Unit 1

Date	Time	Event
6/01		End of Cycle 4 refuel outage continues.
6/07	2230	Fuel sipping completed (11 leakers identified).

Significant Operational Events

Unit 2

Date	Time	Event
6/01	0001	Modifications outage on unit station service transformers continues.
6/16	1009	Commenced rod withdrawal for startup.
	1100	Reactor Critical No. 133.
	1730	Reactor pressure at 570 psi, holding for steam tunnel inspection and RFWP slinger ring adjustment.
6/17	1202	Commenced rod withdrawal.
	1650	Rolled T/G.
	1800	Tripped T/G (oil trip).
	2040	Rolled T/G.
	2125	Synchronized generator, commenced power ascension.
	2331	Tripped turbine for transformer tap setting change, reactor thermal power at 20%.
6/18	0017	Transformer tap setting change complete, rolled T/G.
	0045	Synchronized generator, commenced power ascension.
	1600	Commenced PCIOMR from 63% thermal power (sequence "B").
	1933	Commenced reducing thermal power from 66% to 53% for MSIV closure SI 4.7.D.1.B.2 and "A" RFWP maintenance (oil leak).
	2105	MSIV closure SI complete, holding for RFWP "A" maintenance.
	2235	Maintenance complete on "A" RFWP, holding for control rod pattern adjustments.
6/19	0300	Control rod pattern adjustment complete, commenced power ascension from 53% thermal power.
	0530	Commenced PCIOMR from 71% thermal power.
	1000	Commenced reducing thermal power from 77%, (problems with "B" RFWP).
	1420	"B" RFWP taken out of service for maintenance (blown gasket on casing drain) reducing thermal power.
	1800	Reactor thermal power at 69%, holding for maintenance on "B" RFWP.
	2200	Maintenance complete on "B" RFWP, placed in service, commenced PCIOMR.
6/21	0206	PCIOMR stopped, APRM flow bias channel A, C, and E went high. Manual one-half scram inserted in "A" channel because of APRM's. Reducing thermal power from 90%. Running SI's on APRM's.
	1740	Commenced reducing thermal power from 88% for control rod pattern adjustment.
	2030	Control rod pattern adjustment completed, commenced PCIOMR from 59% thermal power.

Significant Operational Events

Unit 2

Date	Time	Event
6/22	2130	Reactor thermal power at 99%, maximum flow, rod limited.
6/26	0544	Reduced thermal power to 91% to test No. 6 intercept valve.
	0600	Test completed on CIV No. 6, commenced power ascension.
	0700	Reactor thermal power at 99%, maximum flow, rod limited.
6/27	2359	Commenced reducing thermal power for turbine control valve tests and SI;s.
6/28	0031	Turbine control valve tests and SI's complete, commenced power ascension from 82% thermal power.
	0400	Reactor thermal power at 99%, maximum flow, rod limited.
	0525	Commenced reducing thermal power for main steam tunnel temperature control.
	0545	Reactor thermal power at 95%, holding for main steam tunnel temperature control.
	0600	Commenced power ascension from 95% thermal power.
	0700	Reactor thermal power at 99%, maximum flow, rod limited.
6/30	2400	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Events

Unit 3

Date	Time	Event
6/1	0001	Reactor thermal power at 99%, maximum flow, rod limited (control cell core).
6/5	2250	Commenced reducing thermal power for turbine control valve test and SI's.
6/6	0100	Reactor thermal power at 57%, holding for turbine control valve tests and SI's.
	0120	Turbine control valve tests and SI's.
	0430	Commenced PCIOMR from 96% thermal power (control cell core).
	0600	Reactor thermal power at 99%, maximum flow, rod limited.
6/8	2010	Reduced thermal power to 95% due to loss of plant preferred power.
	2020	Commenced power ascension from 95% thermal power.
	2025	Reactor thermal power at 99%, maximum flow, rod limited.
6/13	0005	Commenced reducing thermal power for turbine control valve tests and SI's.
	0100	Reactor thermal power at 85%, holding for turbine control valve tests and SI's.
	0130	Turbine control valve tests and SI's complete, commenced power ascension.
	0330	Commenced PCIOMR from 96% thermal power (control cell core).
	0405	Reduced thermal power from 97% to 55%, "A" recirculation pump tripped due to false stator high [illegible]perature indication.
	0535	[illegible] recirculation pump back in service, commenced power ascension.
	0700	Commenced PCIOMR from 91% thermal power.
	1400	Reactor thermal power at 99%, maximum flow, rod limited.
6/19	2112	Commenced reducing thermal power for control rod pattern adjustments.
	2222	Removal "A" recirculation pump from service for MG set brush replacement.
6/20	0001	Reactor thermal power at 45%, holding for control rod pattern adjustments and "A" recirculation pump MG set brush replacement.
	0055	Control rod pattern adjustment and recirculation pump MG set brush replacement complete, commenced power ascension.

Significant Operational Events

Unit 3

Date	Time	Event
6/20	1437	Commenced PCIOMR from 77% thermal power (control cell core).
6/21	0700	Reactor thermal power at 99%, maximum flow, rod limited.
	1537	Commenced reducing thermal power due to high river ΔT.
	1740	Commenced power ascension from 75% thermal power.
6/22	0615	Commenced PCIOMR from 93% thermal power (control cell core).
	1600	Reactor thermal power at 99%, maximum flow, rod limited.
	1710	Reduced thermal power to 87% for removal of "B" CCW pump from service for maintenance.
	1935	"B" CCW pump back in service, commenced power ascension.
	2000	Reactor thermal power at 98%, maximum flow, rod limited.
6/24	2008	Reduced thermal power to 55% when "A" recirculation pump tripped due to false high stator temperature.
	2130	"A" recirculation pump back in service, commenced power ascension.
	2230	Commenced PCIOMR from 94% thermal power (control cell core).
6/25	0600	Reactor thermal power at 99%, maximum flow, rod limited.
6/26	2125	Commenced reducing thermal power for control rod pattern adjustment and "B" recirculation pump MG set brush replacement.
	2230	Reactor thermal power at 47%, holding for control rod pattern adjustment and "B" MG set brush replacement.
6/27	0005	Control rod pattern adjustment and MG set brush replacement complete, commenced power ascension.
	0130	Commenced PCIOMR from 86% thermal power (control cell core).
	1243	Commenced reducing thermal power from 95% for control rod pattern adjustment.
	1300	Reactor thermal power at 85%, holding for control rod pattern adjustment.
	1330	Control rod pattern adjustment complete, commenced power ascension.
	1410	Commenced PCIOMR from 89% thermal power (control cell core).

Significant Operational Events

Unit 3

Date	Time	Event
6/28	0511	Reactor Scram No. 99[(1)] from 99% thermal power due to MSIV closure during the performance of SI 4.2.A.8 (Primary Containment and Reactor Building Isolation Instrumentation Main Steam Tunnel Line High Temperature.) The MSIV closure was initiated from two heaters being energized on the "C" main steam line.
	1418	Commenced rod withdrawal for startup.
	1655	Reactor Critical No. 112.
	1935	Rolled T/G.
	1955	Synchronized generator, commenced power ascension.
6/29	0730	Commenced PCIOMR from 79% thermal power (control cell core)
	2300	Reactor thermal power at 96%, maximum flow, rod limited.
6/30	0100	Commenced reducing thermal power for control rod pattern adjustments.
	0900	Control rod pattern adjustments complete, commenced power ascension from 90% thermal power.
	1000	Reactor thermal power at 94%, maximum flow, rod limited.
	1500	Reactor thermal power at 93%, maximum flow, rod limited.
	2400	Reactor thermal power at 93%, maximum flow, rod limited.

(1) Equipment malfunction.

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
UNIT Browns Ferry - 1
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

MONTH June

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

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.

(9/77)

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260
UNIT Browns Ferry - 1
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

MONTH June

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	-6	17	4
2	-5	18	509
3	-6	19	727
4	-5	20	826
5	-6	21	853
6	-5	22	873
7	-6	23	1038
8	-6	24	1054
9	-5	25	1040
10	-5	26	1054
11	-5	27	1036
12	-5	28	1027
13	-5	29	1042
14	-6	30	1051
15	-7	31	
16	-7		

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.

(9/77)

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-296
UNIT Browns Ferry - 3
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

MONTH June

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1065	17	1052
2	1065	18	1063
3	1051	19	984
4	1062	20	853
5	1052	21	986
6	1013	22	1005
7	1065	23	1042
8	1059	24	1004
9	1052	25	1034
10	1053	26	994
11	1047	27	988
12	1046	28	245
13	995	29	883
14	1057	30	992
15	1051	31	
16	1057		

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.

(9/77)

OPERATING DATA REPORT

DOCKET NO. 50-259
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 1
2. Reporting Period: June 1981
3. Licensed Thermal Power (MWt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065

Notes

8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:
NA

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	720	4,343	60,625
12. Number Of Hours Reactor Was Critical	0	2,384.4	37,190.97
13. Reactor Reserve Shutdown Hours	0	16.42	5,115.29
14. Hours Generator On-Line	0	2,380.77	36,373.59
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	0	7,425,495	100,717,856
17. Gross Electrical Energy Generated (MWH)	0	2,474,200	33,237,490
18. Net Electrical Energy Generated (MWH)	0	2,407,849	32,271,666
19. Unit Service Factor	0	54.8	60.0
20. Unit Availability Factor	0	54.8	60.0
21. Unit Capacity Factor (Using MDC Net)	0	52.1	49.4
22. Unit Capacity Factor (Using DER Net)	0	52.1	49.4
23. Unit Forced Outage Rate	0	0.8	28.0

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: August 19, 1981
26. Units In Test Status (Prior to Commercial Operation):

	Forecast	Achieved
INITIAL CRITICALITY		
INITIAL ELECTRICITY		
COMMERCIAL OPERATION		

(9/77)

OPERATING DATA REPORT

DOCKET NO. 50-260
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 2
2. Reporting Period: June 1981
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	720	4,343	55,536
12. Number Of Hours Reactor Was Critical	349	3757.61	34,501.22
13. Reactor Reserve Shutdown Hours	371	557.02	13,010.5
14. Hours Generator On-Line	313.35	3,659.79	33,400.75
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	905,266	11,223,064	92,793,407
17. Gross Electrical Energy Generated (MWH)	301,110	3,748,730	31,485,918
18. Net Electrical Energy Generated (MWH)	289,878	3,641,497	30,991,804
19. Unit Service Factor	43.5	84.3	60.1
20. Unit Availability Factor	43.5	84.3	60.1
21. Unit Capacity Factor (Using MDC Net)	37.8	78.7	51.7
22. Unit Capacity Factor (Using DER Net)	37.8	78.7	51.7
23. Unit Forced Outage Rate	0	4.7	30.6

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		

(9/77)

OPERATING DATA REPORT

DOCKET NO. 50-296
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 3
2. Reporting Period: June 1981
3. Licensed Thermal Power (MWt): 3293
4. Nameplate Rating (Gross MWe): 1152
5. Design Electrical Rating (Net MWe): 1065
6. Maximum Dependable Capacity (Gross MWe): 1098.4
7. Maximum Dependable Capacity (Net MWe): 1065

Notes

8. If Changes Occur in Capacity Ratings (Items Number 3 Through 7) Since Last Report, Give Reasons:
NA

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	720	4,343	37,991
12. Number Of Hours Reactor Was Critical	708.27	3,681.88	29,653.15
13. Reactor Reserve Shutdown Hours	11.73	205.22	2,016.11
14. Hours Generator On-Line	705.27	3,588.92	28,978.92
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,221,951	10,871,158	85,236,186
17. Gross Electrical Energy Generated (MWH)	738,130	3,621,240	28,160,270
18. Net Electrical Energy Generated (MWH)	717,194	3,512,615	27,336,938
19. Unit Service Factor	98.0	82.6	76.3
20. Unit Availability Factor	98.0	82.6	76.3
21. Unit Capacity Factor (Using MDC Net)	93.5	75.9	67.6
22. Unit Capacity Factor (Using DER Net)	93.5	75.9	67.6
23. Unit Forced Outage Rate	2.0	8.4	9.6

24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):
Maintenance September 1981

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		

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-259
UNIT NAME Browns Ferry - 1
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

REPORT MONTH June

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
172 (Continued)	6-1-81	S	720	C	2				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

(9/77)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-260
UNIT NAME Browns Ferry - 2
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

REPORT MONTH June

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
192 (Continued)	6-1-81	S	405.42	B	2				To accommodate modifications to unit station service transformers
193	6-17-81	S	1.23	B					Tripped turbine for station service transformer tap setting change
194	6-21-81	S		B					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

DOCKET NO. 50-296
UNIT NAME Browns Ferry - 3
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

REPORT MONTH June

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
83	6-28-81	F	14.73	A	3				Scram due to MSIV closure during performance of SI 4.2.A.8. MSIV closure initiated by two heaters on "B" and "D" main steam lines and one heater on "C" main steam line being energized.

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

DOCKET NO. 50-296
UNIT NAME Browns Ferry - 3
DATE 7-1-81
COMPLETED BY Ted Thom
TELEPHONE 205-729-6846

REPORT MONTH June

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
77	6-5-81	S		B					Derated for turbine control valve tests and SI's
78	6-13-81	F		A					Derated because of "A" recirculation pump trip
79	6-19-81	S		B					Derated for control rod pattern adjustment and "A" recirculation pump MG set brush replacement
80	6-21-81	F		D					Derated due to high river ΔT.
81	6-24-81	F		A					Derated because "A" recirculation tripped due to false high stator temp.
82	6-26-81								Derated for control rod pattern adjustment and "B" recirculation pump MG set brush replacement.

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

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BROWNS FERRY NUCLEAR PLANT UNIT 1, 2 & 3

INSTRUMENT MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF June 1981

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
Unit 1							
6-5	Control Rod Drive	PI-85-34	Replace	None	Gears Binding	Indicated Pressure with Pump Off	None
6-27	Control Rod Drive	FCV-85-11A & 11b	Repair	None	Disconnected Feed-back Linkage	Valves Would Not Operate	None
Unit 2							
6-2	Off-Gas	ME-66-110	Repair	None	Faulty Hygrometer	Indicated High Humidity	None
6-3	Neutron Monitoring	SRM-B	Repair	None	Noisy Pre-Amp	Indicated High Counts	None
6-6	Rod Position Information	38-31	Replace	None	Faulty Reed Switch	8 Digit at Notch 38 Intermittent	None
6-9	Radwaste	LT-77-1A	Repair	None	Stuck Float	Level Alarm Would Not Clear	None
	Radwaste	LT-77-1B	Replace	None	Faulty Transmitter	Would Not Indicate Level	None
6-14	Reactor Core Isol-ation Cool-ing	Pdis-71-1A	Replace	None	Leaking Bellows	Faulty Indication	None
6-19	Off-Gas	TIC-66-109	Repair	None	Faulty Amplifier	Would Not Work In Automatic Mode	None

BROWNS FERRY NUCLEAR PLANT UNIT 1, 2 & 3

INSTRUMENT MAINTENANCE SUMMARY

CSSC EQUIPMENT

FOR THE MONTH OF June 19 81

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
Unit 3							
6-2	Reactor Feedwater	PI-3-207	Calibrate	None	Instrument Shift	Reading Low	None
6-23	EECW	Pds-67-8	Replace	None	Water in Switch	Would Not Indicate	None
6-24	Core Spray	FI-75-21	Calibrate	None	Zero Shift	Indicated Downscale	None

CSSC EQUIPMENT

BROWNS FERRY NUCLEAR PLANT UNIT 1

MECHANICAL MAINTENANCE SUMMARY

For the Month of June 19 81

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
-17-81	CRD	FCV-85-11A&B	Nonregulated Flow	NONE	Faulty Seats	Bad Seats	Replaced Seats TR# 236779
5-81	Drywell Control Air	FSV-32-62	Leak	NONE	Unknown	Solenoid leaking through	Replaced solenoid valv TR# 203543
16-81	RHR	1-D Seal HTX	Bonne Leak	NONE	Unknown	Bonnet leak on drain valve	Outage on WP installed new heat exh. with drain valve. TR# 152154
19-81	Secondary Containment	U-1 Personnel Air Lock	Door won't seal	NONE	Unknown	Door un-functional	Repaired lock, replace seal & tightened hinge TR# 235504
20-81	EECW	Core Spray Coolers	Cooling Coil Rusting	NONE	Rusty Coil	Coil dirty with rust	Flushed coil with sodium phosphate & then with clean water TR# 140028
-2-81	CRD	Valve 85-577	Pressure Leak	NONE	Valve mushroomed	Seal leaking	Cut 3/16" off stem, filed and cleaned up thread, polished seat TR# 234925

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CSSC EQUIPMENT

BROWNS FERRY NUCLEAR PLANT UNIT Common

MECHANICAL MAINTENANCE SUMMARY

For the Month of June 1981

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
6-27-81	RHRSW	A1 Pump	Broken suction bell	None	Unknown	Broken suction bell	Replaced suction bell & fabricated new bushings TR# 233141
6-26-81	Secondary Containment	Equip. Air Lock door RX	Door comes open when should be closed	NONE	Faulty lock & loose closer	Door can be shaken open	Adjusted lock & clos TR# 188031
6-6-81	Fire Protection	Emergency Diesel Fire Pump	Leakage	NONE	Unknown	Water pump leaking	Replaced water pump TR#208761
5-6-81	Fire Protection	Diesel fire pump Eng. Exp. tank	Leak	NONE	Unknown	Hose Leak	Repaired existing ho & added 2 gal. coola TR# 236753

BROWNS FERRY NUCLEAR PLANT UNIT 3

MECHANICAL MAINTENANCE SUMMARY

CSSC EQUIPMENT

For the Month of June 19 81

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
-26-81	Fuel Pool Cooling	A fuel pool cooling H_2O pump	Outboard bearing ran hot	NONE	Wrong shaft on pump	Caused bearings to run hot	Installed new shaft, sleeves, bearings, impeller, wear rings, sleeve nuts, packing & gaskets. TR# 225511
-30-81	RCIC	HCV-71-200A	Steam Leak	NONE	Gasket Blew	Blown body gasket	Replaced old gasket TR# 220842
-29-81	HPCI	Turbine HCV-73-201A	Steam leak after unit scram	NONE	Unknown	Leak on bonnet 73-201A	Replaced gasket TR# 199197
-8-81	HPCI	FCV-85-37A	Leak-Valve would not close	NONE	Gear screwed up too high.	Would not let valve close.	Repositioned handwheel & stroked valve TR# 205924

BROWNS FERRY NUCLEAR PLANT UNIT 3

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of June 19 81

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
-24-81	LPCI	3 DN MG Set	Broken washers	NONE	Lock Washers Manufactured too hard at factory	Broken lock-washers	Replaced lockwashers on bearings TR# 137296
-12-81	High Pressure Fire Prot.	3-26-587	Valve is not opening	NONE	Valve stem broken	Closed valve	Removed stem, bonnet & gate to replace bolts. TR# 227258
-20-81	AP Air Compressor	Drywell Air Compressor Valve 64-140	Blowing air	NONE	Unknown	Hole in hat	Replaced diaphragm TR# 205034
- 9-81	AP Air Compressor	Valve 64-140	Blown seal	NONE	Unknown	Stem seal blown	Replaced stem seal TR# 205386

BROWNS FERRY NUCLEAR PLANT UNIT 1 & Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
6/3/81	Standby gas treatment	Position switch on SBGT train B outlet damper 65-38B	Damper "open" indicating light was not operating properly	None	Position switch was out of adjustment	Could not get a proper damper "open" position indication in the control room	Adjusted position switch, indicating lights operated properly. TR #236852
6/10/81	CRD	Scram accumulator level switches 06-47, 10-19, 10-43, 14-55, 26-03, 30-43, 38-39, 54-39	Scheduled EMI-50	None, unit was in refuel mode. CRD system was tagged out for performing EMI-50	While performing EMI-50 it was found that eight level switches would not operate due to excessive amounts of some substance found on switch float and guide stem which caused the floats to stick.	Eight accumulator level switches inoperative.	All 185 level switches on U-1 were cleaned and tested successfully during the performance of EMI-50 as recurrence control for previous events. LER-BFRO-50-259/8131
6/12/81	RHR	Limit switch for HCV 74-33	Valve indicating lights indicated valve was open when the valve was closed.	None	Bad limit switch.	Indicating lights inoperable.	Replaced limit switch, indicating lights operated properly. TR #236842

BROWNS FERRY NUCLEAR PLANT UNIT 1 & Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 1981

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
6/13/81	Primary containment	FCO 64-45 indicating light actuator	When FCO 64-45 was cycled both open and closed indicating lights remained on.	None	Open indicating light actuator broken.	Indicating lights inoperable.	Repaired broken actuator, indicating lights operated properly. TR #236777
6/14/81	Fire protection	Routing valve 39-11 at CO_2 tank	Bad coil on FSV 39-11 at CO_2 tank	None, master valve FSV 39-11 is energized to close, this loss of power caused it to open allowing pressurization up to the local manual valves.	FSV 39-11 coil burned	Breaker trip occurred which removed electric power from CO_2 protected areas in the control bay turbine bldg., and service bldg. No valves with auto initiation were affected.	Established fire watches, replaced the burned coil, the system was returned to service. TR #205708
6/15/81	Annunciator & sequential events recording	Annunciator panel 55-4C inverter located on panel 9-4.	Inverter was continually blowing fuses.	None	Bad inverter.	Annunciator panel 55-4C inoperable.	Replaced the inverter, annunciator panel operated properly. TR #236903

BROWNS FERRY NUCLEAR PLANT UNIT 1 & Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
6/15/81	Air Conditioning (Cooling-Heating)	1A shutdown board exhaust fan indicating light circuitry	Did not receive a light on panel 25-165 indicating the fan was running.	None	Auxiliary contacts were out of alignment.	The fan indicating light circuitry was inoperable	Adjusted the auxiliary contacts, the indicating lights operated properly. TR #236776
6/16/81	Air Conditioning (Cooling-Heating)	1B control bay purge unit drain valve.	Drain valve inoperable	Nore	Bad drain valve	Drain valve inoperable	Replaced valve, new drain valve operated properly. TR #186812
6/19/81	Ventilating	1B control room air handling unit	Air handling unit would not start	None	Loose coil wire	Air handling unit 1B was inoperable.	Tightened the loose coil wire and the unit operated properly. TR #236866
6/22/81	Fire protection	Panel 9-7 smoke alarm circuitry	Panel 9-7 smoke annunciator actuated with no smoke in panel	None	Loose annunciator circuitry card	Received a false smoke annunciation	Tightened annunciator card and the system operated properly. TR #203379

BROWNS FERRY NUCLEAR PLANT UNIT 1 & Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
6/23/81	Diesel generator	SFD1 relay on D/G B	Redundant start test (EMI 3)	None	While reviewing EMI 3 it was determined that SFD1 relay was slightly out of tolerance.	Relay operated slightly fast but had no impact on the starting of the D/G.	Adjusted relay to proper setting per EMI 15 and re-performed step 2 & 5 of EMI 3, relay operated properly. TR #225007
6/23/81	Diesel generator	Local alarm panel at D/G 1A	Alarm panel inoperable	None	Bad alarm bell	Alarm bell inoperable	Replaced bell, alarm operated properly. TR #205733

BROWNS FERRY NUCLEAR PLANT UNIT ___

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
5/29/81	RCIC	HS-71-3	FCV-71-3 would not operate from control room by HS-71-3	None-Unit was in cold shutdown	Contact was not making connection	HS-71-3 inoperable	Cleaned contact, valve operated properly by hand switch. TR #205920
6/8/81	RHR	Indicating light circuitry for FCV-74-54	Indicating lights were not operating properly.	None	Position switch was out of adjustment.	Indicating lights would not operate properly.	Adjusted position switch, indicating lights operated properly. TR #205643
6/8/81	Unit preferred MG set	Unit preferred breaker 1001	Breaker tripped and would not close	None	Bad breaker overload	Motor generator inoperable	Replaced breaker 1001 and voltage regulator, MG set was tested and operated properly. TR #205937
6/13/81	Fire protection	TA-39-113 TA-39-120A Annunciator circuitry on panel 9-8	Annunciator bulbs would not burn	None	Bad circuitry cards	TA-39-113 and TA-39-120A inoperable	Replaced bad annunciator card for TA-39-113 and card for TA-39-120A, annunciators operated properly. TR #203668

BROWNS FERRY NUCLEAR PLANT UNIT 2

CESC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
6/14/81	CRD	HS-85-47	Mechanical stop was bad on HS-85-47	None	Mechnical stop was worn	Required care to be taken while operating switch to avoid rotating switch past desired setting.	Replaced worn stop, switch operated properly. TR #203683
6/29/81	RHR	FCV 2-74-57	During vibration testing FCV 74-57 failed to operate from control room	RHR, Loop 1 suppression pool cooling inoperable	Broken contact block on the valve control circuitry.	FCV 74-57 inoperable	Replaced broken contact block and performed EMI 18B & 18.1 FCV operated properly. TR #239031 LER#BFRO-50-260/8130

BROWNS FERRY NUCLEAR PLANT UNIT 3

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
6/7/81	RBCCW	"3A" RBCCW pump motor	Excessive pump motor noise	None	Bad motor bearings	Excessive motor noise	Replaced bearings, performed EMI 83, pump motor operated properly. TR #205382
6/9/81	Air conditioning (Cooling & Heating)	Chilled water temperature sensor on 3A control bay chiller	Temperature sensor inoperable	None	Bad temperature sensor	Control bay chiller inoperable	Replaced the bad temperature sensor, chiller operated properly. TR #220570
6/13/81	Air conditioning (Cooling & Heating)	Spreader room supply fan #2	Fan inoperable	None	Bad coil on fast speed starter	Fan inoperable	Replaced the bad coil, fan operated properly TR #205009
6/13/81	Reactor water recirculation	3A reactor recirculation MG set	3A reactor recirculation MG set tripped	3A reactor recirculation pump inoperable Unit entered LCO	MG set tripped due to 2A-K45A relay action initiated by RTD high temperature trip	3A reactor recirculation pump inoperable	Unit load was reduced. The recirculation pump was restarted. The high temperature set point has been changed on all 2A-K45A and 2A-K45B relays. A special test is being written and will be implemented to investigate this problem. LER-BFRO-50-296/8128 LER-BFRO-50-296/8131

CSSC EQUIPMENT

BROWNS FERRY NUCLEAR PLANT UNIT 3

ELECTRICAL MAINTENANCE SUMMARY

For the Month of June 19 81

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
6/16/81	Air conditioning (Cooling & Heating)	Temperature load controller on 3A control bay chiller	Load controller was not operating properly	None	Bad controller	Temperature load controller would not operate properly.	Replaced the temperature load controller, control bay chiller operated properly. TR #190627

OUTAGE SUMMARY (Continued)

June 1981

Unit 2 was shutdown May 27, at 2217 hours to begin the Unit 2 station service transformer modification (PO275) outage, which was completed June 17, 1981. The unit was returned to service June 17, 1981 at 2125 hours allowing the outage to be completed in the original 21 day duration. The principal efforts during this outage consisted of the completion of the unit station service transformer electrical and fire protection work (ECN PO275), changeout of the H_2 and O_2 sample return pumps (ECN P0315), 161 kV capacitor bank modifications (ECN P0403 - not completed) and reactor feed pump inspections and repair (B and C).

Raising of fan stacks on the cooling towers has been completed on all towers. Reducing the clearance of the fan tips to the stacks has been completed on all towers except number 1 tower. Towers 5 and 6 only have the Hudson fans.

On June 5, members of the Water System Development Branch of the Division of Water Resources of the Office of Natural Resources performed tracer dye tests to determine the source of the inleakage into the Unit 1 CCW discharge tunnel.

Samples were taken from the two separate areas of inleakage into the tunnel. The tracer dye test showed that water from the leak on the east side of the CCW tunnel was coming from the Unit 2 CCW system. The test also showed that the water from the leak on the west side of the CCW tunnel was coming from the Unit 3 CCW system. No repairs are scheduled.

OUTAGE SUMMARY

June 1981

The maintenance and modification activities for the month of June included continuing the Unit 1, Cycle 4 refueling/torus outage and completing activities for the Unit 2 unit station station service transformer modification outage.

Major emphasis for the Unit 1, Cycle 4 refueling outage was concentrated on the following:

1. Torus internal and external modifications.
2. LPCI modification.
3. H2/O2 analyzer/sample pump modification.
4. HP turbine reassembly.
5. Reactor feedpump turbine maintenance.
6. Generator breaker modification (P0214).
7. 1B reactor feed pump reassembly.
8. Reactor vessel feedwater sparger changeout (Completed June 23, 1981).
9. Local leak rate testing on selected valves.
10. Main steam isolation valve maintenance (repair of 1D damaged stud still required).
11. Main steam relief valve testing - tested off site.
12. CCW tunnel inspection and repairs to inlet tunnel joints. (Completed June 21, 1981).
13. Fuel sipping (Completed June 21, 1981).
14. Reactor building door interlocks. (Completed June 19, 1981).
15. Unit station service transformer modification.
16. Flood up of reactor pressure vessel cavity (Completed June 25, 1981).