TENNESSEE VALLEY AUTHORITY

DIVISION OF NUCLEAR POWER

BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT

November 1, 1982 - November 30, 1982

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

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

Submitted by: J. R. Butler
Plant Superintendent

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Operations Summary

November 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 21 reportable occurrences and two revisions to previous reportable occurrences reported to the NRC during the month of November.

Unit 1

There was one scram on the unit during the month. On November 3, the reactor scrammed when the main turbine tripped due to a power supply failure on the turbine supervisory instrumentation. This gave a false indication of high vibration on the main and reactor feed pump turbines.

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)

November 1982

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	0.00561	0.00448	0.00388
Feedwater nozzle	0.27410	0.19544	0.14701
Closure studs	0.21621	0.15641	0.12638

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

Common System

Approximately 6.13E+05 gallons of waste liquids were discharged containing approximately 1.09E+00 curies of activities.

Operations Summary (Continued)

November 1982

Refueling Information

Unit 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 25, 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.

Operations Summary (Continued)

November 1982

Refueling Information

Unit 2 (Continued)

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 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
11/01/82	0001	Reactor thermal power at 99%, maximum flow, rod limited.
11/03/82	0010	Reactor Scram No. 161 from 99% thermal power due to false high turbine vibration and main steam line isolation on low pressure. This was caused by failure of the 15-volt power supply to the turbine supervisory instrumentation. Unit remains offline for maintenance and repairs. Items include: changeout of spare 500-kV transformer to 1B transformer, replace HEPA filters on primary containment purge assembly, replace connectors on "A" and "B" IRM's and replace coil on "B" IRM drive light.
	1530	Change out of spare 500-kV transformer to 1B transformer completed.
	1830	Primary containment purge system failed flow test (SI 4.7.F-5) HEPA filters dirty.
11/04/82	0700	Started replacing connectors on "A" and "B" IRM's.
	1530	Replacement of connectors on "A" and "B" IRM's complete.
	2230	HEPA filter replacement complete and SI 4.7.F-1, 2, and 5, (Pressure Drop, DOP, and Flow Test) performed on primary containment purge system. Holding for SI 4.7.F-3 (Freon Test on Charcoal Filters).
11/05/82	0015	Started replacement of coil on "B" IRM drive light.
	0200	Coil replacement on "B" IRM drive light complete, holding for SI 4.7.F-3 (Freon Test) on primary containment purge system.
	1130	SI 4.7.F-3 complete, holding due to problems with computer.
	1935	Commenced rod withdrawal for startup.
	2125	Reactor Critical No. 180, holding due to maintenance on EHC logic.
11/07/82	1003	Maintenance complete on EHC logic, commenced rod withdrawal for startup.
	1130	Rolling main turbine.
	1136	Stopped rolling main turbine, EHC system problems.
	1200	Rolled T/G.
	1255	Synchronizd generator, commenced power ascension.

Significant Operational Event

Unit 1

Date	Time	Event
11/08/82	0340	Commenced PCIOMR from 79% thermal power (sequence "B").
11/09/82	0800	Reactor thermal power at 99%, maximum flow, rod limited.
11/13/82	0120	Commenced reducing thermal power for turbine control valve tests and SI's.
	0300	Reactor thermal power at 97% for turbine control valve test and SI's.
	0330	Turbine control valve tests and SI's completed, commenced power ascension.
	0400	Reactor thermal power at 99%, maximum flow, rod limited.
11/19/82	2200	Commenced reducing thermal power for control rod pattern adjustment and turbine control valve test and SI's.
11/20/82	0100	Reactor thermal power at 74% for control rod pattern adjustment and turbine control valve test and SI's.
11/20/82	0330	Control rod pattern adjustment, turbine control valve test and SI's complete, commenced power ascension.
	0700	Commenced PCIOMR from 79% thermal power (sequence "B").
11/21/82	1330	Reactor thermal power at 99%, maximum flow, rod limited.
11/27/82	2230	Commenced reducing thermal power for turbine control valve tests and SI's.
	2240	Reactor therma power at 91% for turbine control valve tests and SI's.
	2249	Turbine control valve tests and SI's complete, commenced reducing thermal power for control rod pattern adjustment.

Significant Operational Event

Unit 1

Date	Time	Event
11/28/82	2100	Reactor thermal power at 74% for control rod pattern adjustment.
	0130	Control rod pattern adjustment complete, commenced PCIOMR (sequence "B").
11/29/82	0415	Reactor thermal power at 99%, maximum flow, rod limited.
11/30/82	2400	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Event

Unit 2

Date	Time	Event
11/01/82	0001	ECC-4 refuel outage continues.
11/30/82	2400	EOC-4 refuel outage continues.

Significant Operational Event

Unit 3

Date	Time	Event
11/01/82	0001	Reactor thermal power at 99%, maximum flow, rod limited.
11/06/82	0150	Commenced reducing thermal power for recirculation pumps MG set brush replacement.
	0400	Reactor thermal power at 47% for MG set brush replacement.
	0447	MG set brush replacement complete, commenced power ascension.
	0630	Commenced PCIOMR from 81% thermal power (control cell core).
	1000	Reactor thermal power at 99%, maximum flow, rod limited.
11/13/82	0525	Commenced reducing thermal power due to high vibration on "C" reactor feedwater pump.
	0545	"C" reactor feedwater pump taken out of service, reactor power at 75%.
	0800	Reactor power at 74% due to "C" reactor feedwater pump high vibrations.
	0845	Commenced increasing thermal power, "C" reactor feedwater pump vibration limited.
	1000	Reactor thermal power at 76%, "C" reactor feedwater pump vibration limited.
	1050	Rolling "C" reactor feedwater pump for vibration check, reactor power at 76%.
	1300	Increasing thermal power, "C" reactor feedwater pump limited.
11/14/82	0100	Reactor thermal power at 80%, "C" reactor feedwater pump vibration limited.
11/19/82	0610	Rolled "C" reactor feedwater pump for vibration check, commenced power ascension.
	0700	Reactor power at 81%, "C" reactor feedwater pump off.
	0825	"C" reactor feedwater pump in service. Commenced power ascension.
	1700	Commenced PCIOMR from 87% thermal power (control cell core).

Significant Operational Event

Unit 3

Date	Time	Event
11/20/82	2230	Received 1/4 isolation on "C" main steamline low pressure, commenced reducing thermal power from 98%.
11/21/82	0200	Reactor thermal power at 96% due to 1/4 isolation "C" main steamline low pressure, holding load to check "C" main steam line.
	1300	SI's commplete on "C" main steamline, commenced power ascension.
	1400	Reactor thermal power at 99%, maximum flow, rod limited.
11/21/82	1425	Received 1/4 isolation on "C" main steamline low pressure.
	1600	Reactor thermal power at 97% due to "C" main steamline low pressure.
11/23/82	1500	Reactor thermal power at 96% due to "C" main steamline low pressure.
11/24/82	1820	Commenced power ascension from 96% thermal power.
	2120	Reactor thermal power at 99%, maximum flow, rod limited.
11/25/82	0313	Received 1/4 isolation on "C" main steamline low pressure, commenced reducing thermal power.
	0600	Reactor thermal power at 97% due to "C" main steamline low pressure.
11/26/82	1100	Commenced power ascension from 97% thermal power.
	1200	Reactor thermal power at 99%, maximum flow, rod limited.
	2300	Commenced reducing thermal power for turbine control valve tests and SI's.
11/27/82	0100	Reactor thermal power at 95% for turbine control valves tests and SI's.
	0320	Turbine control valve tests and SI's complete, commenced power ascension.
	0400	Reactor thermal power at 99%, maximum flow, rod limited.
11/28/82	0120	Reduced thermal power to 96% for SI 4.3.A.2 (control rod exercise).
	0135	SI 4.3.A-2 complete, increased thermal power to 99%, maximum flow, rod limited.
11/30/82	2400	Reactor thermal power at 99%, maximum flow, rod limited.

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AVERAGE DAILY UNIT POWER LEVEL

DOCKET No. 50-259

UNIT Browns Ferry - 1

DATE 12-1-82

COMPLETED BY Ted Thom

TELEPHONE 205 729 0834

MONTH NOVEMBER

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1058	17	1060
2	1015	18	1067
3	-3	19	1034
4	-11	20	869
5	-11	21	1034
6	-10	22	1065
7	261	23	1065
8	891	24	1067
9	1048	25	1063
10	1072	26	1070
11	1058	27	1058
12	1063	28	913
13	1053	29	1056
14	1081	30	1078
15	1069	31	
16	1065		

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 - 2
DATE 12-1-82
COMPLETED BY Ted Thom
TELEPHONE 205 729 0834

MONTH NOVEMBER

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

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 12-1-82
COMPLETED BY Ted Thom
TELEPHONE 205 729 0834

MONTH NOVEMBER

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1061	17	843
2	1057	18	844
3	1061	19	863
4	1061	20	1004
5	1063	21	1028
6	960	22	1024
7	1066	23	1017
8	1066	24	1027
9	1059	25	1038
10	1067	26	1047
11	1059	27	1064
12	1061	28	1050
13	881	29	1066
14	812	30	1077
15	834	31	
16	838		

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 12-1-82
COMPLETED BY Ted Thom
TELEPHONE 205 729 0834

OPERATING STATUS

1. Unit Name: Browns Ferry - 1
2. Reporting Period: November 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
9. Power Level To Which Restricted, If Any (Net MWe): NA
10. Reasons For Restrictions, If Any: NA

Notes

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	720	8,016	73,058
12. Number Of Hours Reactor Was Critical	650.75	7,387.87	46,702.67
13. Reactor Reserve Shutdown Hours	59	464.98	5,680.18
14. Hours Generator On-Line	611.25	7,286.77	45,716.94
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	1,985,489	22,701,859	129,576,766
17. Gross Electrical Energy Generated (MWH)	646,390	7,378,330	42,670,780
18. Net Electrical Energy Generated (MWH)	629,474	7,169,391	41,438,300
19. Unit Service Factor	100	92.3	62.7
20. Unit Availability Factor	100	92.3	62.7
21. Unit Capacity Factor (Using MDC Net)	82.1	84.0	53.3
22. Unit Capacity Factor (Using DER Net)	82.1	84.0	53.3
23. Unit Forced Outage Rate	8.4	8.5	24.6

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: NA
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 12-1-82
COMPLETED BY Ted Thom
TELEPHONE 205 729 0834

OPERATING STATUS

1. Unit Name: Browns Ferry - 2
2. Reporting Period: November 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

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	8,016	67,999
12. Number Of Hours Reactor Was Critical	0	4,846.51	43,293.47
13. Reactor Reserve Shutdown Hours	0	203.06	13,684.82
14. Hours Generator On-Line	0	4,778.36	41,975.45
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	0	13,827,550	120,480,340
17. Gross Electrical Energy Generated (MWH)	0	4,592,260	40,024,908
18. Net Electrical Energy Generated (MWH)	0	4,450,929	38,873,075
19. Unit Service Factor	0	59.6	61.7
20. Unit Availability Factor	0	59.6	61.7
21. Unit Capacity Factor (Using MDC Net)	0	52.1	53.7
22. Unit Capacity Factor (Using DER Net)	0	52.1	53.7
23. Unit Forced Outage Rate	0	5.5	27.1

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: January 1983
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 12-1-82
COMPLETED BY Ted Thom
TELEPHONE 205 729 0834

OPERATING STATUS

1. Unit Name: Browns Ferry - 3
2. Reporting Period: November 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	720	8,016	50,424
12. Number Of Hours Reactor Was Critical	720	4,401.30	36,868.28
13. Reactor Reserve Shutdown Hours	0	1,230.62	3,372.15
14. Hours Generator On-Line	720	4,279.28	36,030.06
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,230,080	13,151,238	107,009,858
17. Gross Electrical Energy Generated (MWH)	737,970	4,274,810	35,273,000
18. Net Electrical Energy Generated (MWH)	720,029	4,144,683	34,232,729
19. Unit Service Factor	100	53.4	71.5
20. Unit Availability Factor	100	53.4	71.5
21. Unit Capacity Factor (Using MDC Net)	93.9	48.5	63.7
22. Unit Capacity Factor (Using DER Net)	93.9	48.5	63.7
23. Unit Forced Outage Rate	0	23.3	17.7

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

DOCKET NO. 50-259
UNIT NAME Browns Ferry - 1
DATE 12-1-82
COMPLETED BY Ted Thom
TELEPHONE 105 729 0834

REPORT MONTH November

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
244	11/03/82	F	6.83	A	3				Reactor scram due to false high turbine vibration.
245	11/03/82	S	52.5	P	3				Unit remains offline for change out of spare 500 kV transformer to 1B, replace HEPA filter on primary containment purge assembly, replace connectors on (A&B) IRMs and replace coil on B IRM drive light.
246	11/05/82	F	49.42	A	3				Unit remains offline due to problems with computer
247	11/19/82	S		H					Derated for control rod pattern adjustment and turbine control valve tests and SI's
248	11/27/82	S		B					Derated for turbine control valve tests and control rod pattern adjustment.

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

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UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-260
UNIT NAME Browns Ferry - 2
DATE 12-1-82
COMPLETED BY Ted Thom
TELEPHONE 205 729 0834

REPORT MONTH November

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
243	11/01/82	S	720	H	2				EOC-4 Refuel Outage continues

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)

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. 50-296
UNIT NAME Browns Ferry - 3
DATE 12-1-82
COMPLETED BY Ted Thom
TELEPHONE 205 729 0834

REPORT MONTH November

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
115	11/06/82	S		B					Derated for recirculation pump MG set brush replacement
116	11/13/82	F		A					Derated due to high vibration on "C" reactor feedwater pump

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 Common

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of November 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
0-29	Radiation Monitoring	RM-90-127 RM-90-126	belts cracked and broken	none	belts worn excessively	belts on the verge of malfunction	replaced belts on both CAM Units. TR# 252612

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BROWNS FERRY NUCLEAR PLANT UNIT 1

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of November 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
1-06	Diesel Generator	D/G C #1 air compressor	air leak	none	blown headgaskets	air leak	replaced headgaskets TR# 274736
1-06	Diesel Generator	1 & 2 C compressor	B compressor nonfunctional	none	faulty headgasket	blown headgasket	replaced headgaskets TR# 266979
1-04	Diesel Generator	C diesel A air compressor	air leak on sensing line	none	unloader valve causing air leak on sensing line	air leak at base of compressor	repaired unloader valve TR# 274735
1-05	Liquid Radwaste	1B equipment drain sump pump	coupling nonfunctional	none	unknown	coupling dropped down approximately 1/4."	repaired coupling TR# 315150
1-10	HPCI	upstream of HCV-73-563 pipe	water leak	none	weld leak on 3/4" nipple	water leak	repaired weld TR# 311937

BROWNS FERRY NUCLEAR PLANT UNIT 2

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of November 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
1-06	RHR Ser... Water	2C RHR pump suction vent line	nipple on vent line inoperable	none	broken nipple	nipple nonfunctional	replaced broke... nipple with new one. TR# 276239
0-20	CRD	HCV-85-560	faulty valve	none	valve seat & poppet eroded	valve nonfunctional	lapped poppet and valve body seat by hand TR# 315141

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

ELECTRICAL MAINTENANCE SUMMARY

For the Month of November 19 82

CSSC EQUIPMENT

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
10/26/82	Containment Inerting	"B" H_2O_2 Analyzer O_2 Inlet pump control relay R5.	O_2 Inlet pump inoperable.	None	Handswitch HS-76-59 on panel 9-55 had erratic operation when turned to "Drywell" position. This erratic operation resulted in the failure of the Drywell sample line valves to open, this resulted in the O_2 Inlet pump repeatedly starting and stopping in rapid succession which caused relay R5 contacts to burn.	O_2 Inlet pump inoperable.	Replaced the R5 relay contacts. TR #207581 was written to replace HS-76-59 during the next unit outage. The failure of this type relay contacts is being investigated in conjunction with LER 259/82031 with results expected by March 1, 1983. TR #291634

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of November 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
0/29/82	Fire Protection	Smoke detector XS-39-66XM	XS-39-66XM initiated a false alarm.	None	The detector was wetted from water coming through the ceiling from a leaking building secondary heat pump.	XS-39-66XM gave a false alarm which could have masked signals from other detectors which are required to be operable.	A fire watch was established. The water was removed from the detector and the detector was successfully tested per SI 4.11.C.1&5 and returned to service. TR #291621 LER#BFRO-50-259/ 8294
1/3/82	Radiation Monitoring	CAM-251	CAM-251 pump inoperable.	None	Pump motor fuse blown.	CAM-251 was inoperable.	The blown fuse was replaced and the CAM pump operated properly. TR #341043

CSSC EQUIPMENT

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

ELECTRICAL MAINTENANCE SUMMARY

For the Month of November 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
11/3/82	EECW Sys. and Communication	480V Diesel Auxiliary Bd. B breaker 8E. RHRSW & EECW trace htr. B and C emeg. fdr. and 480V evacuation alarm fuse panel alt. fdr.	Breaker would not close.	None	Compartment door was not fully closed, lockout device not fully seated.	Breaker was inoperable.	Closed compartment door which allowed lockout device to fully seat. TR #266971
11/4/82	250 Volt DC System	Cell #98 on main battery.	Cell replacement.	None	Cracked cell.	Required cell #98 to be jumpered around in March 82.	Replaced the cracked cell (battery) per SEMI 38 and SI 4.9.A.2.C. TR #196476
9/22/82 11/4/82	Main Steam	MSIV 1-26 limit switch #3.	Trip channel relay 5AK3D on panel 9-17 dropped out.	None	LS#3 actuator arm loose.	Intermittent tripping of trip channel	Tightened actuator arm and adjusted limit switch. TR #237259 TR #266866

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

ELECTRICAL MAINTENANCE SUMMARY

For the Month of November 1982

CSSC EQUIPMENT

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
11/16/82 11/4/82	Neutron Monitoring	"A" and "B" IRM cable connectors at inboard penetration.	"A" and "B" IRM channels inoperable.	None	Center conductors on both "A" and "B" IRM connectors at the inboard penetration was broken.	"A" and "B" IRM channels inoperable.	Repaired the broken connectors. During repairs to the IRM connectors the SRM "A" and "B" channel connectors were inadvertently jarred loose making SRM channels "A" and "B" inoperable. The SRM connectors were cleaned and returned to service. The IRM and SRM channels operated properly. TR #252374 TR #252375 TR #252619
11/4/82	Neutron Monitoring	IRM "B" channel relay 7CK-7F located in panel 25-14.	Received both in and out annunciation on panel 9-5 for IRM "B" channel.	None	Burned coil on relay 7CK-7F.	IRM "B" channel inoperable.	Replaced the bad relay coil, IRM channel "B" operated properly. TR #341051

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of November 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
1/6/82	Diesel Generators	D/G "1C" "B" air compressor.	Air compressor tripping.	None	Burned motor contactor contacts.	"B" air compressor inoperable.	Replaced the burned contacts, compressor operated properly. TR #266977
1/9/82	Diesel Generators	D/G "1D" governor control.	During the performance of SI4.9.A.1.a the control room operator was unable to raise the diesel generator speed.	D/G "1D" inoperable.	Bad microswitch in the Woodward Governor Controller.	Diesel generator "1D" inoperable.	The governor control microswitch was replaced, SI 4.9.A.1.a successfully completed and the diesel generator returned to service. TR #341085 LER#BFRO-50-259/8291
1/10/82	Fire Protection	Smoke detector XS-39-66XM.	Receive an intermittent trouble alarm for zone X on panel 25-286 (alarm XA-39-66XB).	None	Bad detector (XS-39-66XM).	Detector XS-39-66XM inoperable.	Replaced the bad detector, detector operated properly per SI 4.11.C.1&5. TR #266985

BROWNS FERRY NUCLEAR PLANT UNIT 1 and Common

ELECTRICAL MAINTENANCE SUMMARY

For the Month of November 19 82

CSSC EQUIPMENT

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
1/12/82	CRD	CRD control switch (HS-85-48) on panel 9-5.	HS-85-48 was not operating properly.	None	Broken mechanical stop.	Required care to be taken by operator to avoid operating the switch past the desired setting.	Replaced the broken stop, switch operated properly. TR #291978

BROWNS FERRY NUCLEAR PLANT UNIT 2

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of November 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
10/27/82 through 11/9/82	CRD	Scram accumulator level switches for CRD's 26-11, 26-15, 10-51, and 06-43.	During the performance of EMI 50 the listed component items failed.	None, unit in refueling outage.	Removed switches 26-11 and 26-15 for cleaning (per EMI 50) and found switch threads to be bad, instrument block would not allow switches to be screwed in fully. Switches 10-51 and 06-43 failed to actuate.	Switches 26-11 and 26-15 could not be screwed back into instrument blocks enough to seal properly to O-rings. Switches 10-51 and 06-43 were inoperable..	Chased instrument blocks threads for 26-11 and 26-15 and installed new switches. Replaced switches 10-51 and 06-43. Each switch operated properly per EMI 50. TR #319510 TR #319530 TR #319556 TR #319557 TR #274045
11/10/82	Standby Liquid Control	SLC pump 2A feeder breaker 470V shtd. bd. 2A, compartment 7B.	SLC pump 2A failed to start from HS-63-6A on control panel 9-5.	None	The feeder breaker's trip latch mechanism was out-of-adjustment.	SLC pump 2A sometimes failed to start from HS-63-6A.	Adjusted breaker trip mechanism, pump controls and breaker operated properly. TR #245084
10/7/82 11/15/82	CRD	Control transformer 5A-T1C in panel 25-22.	Fuses 5A-F23B blowing.	None, unit in refueling outage.	Bad control transformer.	Scram valves open indicators and scram accumulator low pressure/high level alarms inoperable.	Replaced the bad transformer, system returned to service. TR #274742

BROWNS FERRY NUCLEAR PLANT UNIT 3

ELECTRICAL MAINTENANCE SUMMARY

For the Month of November 1982

CSSC EQUIPMENT

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
10/31/82	Diesel Generators	D/G 3D annunciator circuitry.	Received a false start failure alarm in control room.	None	Bad annunciator circuitry card.	Received a false start failure alarm for D/G 3D.	Replaced the bad annunciator card, the alarm circuit operated properly. TR #275228
11/12/82	Annunciator & Sequential Events Recording	Alarm panel XA-55-3B on panel 9-3.	XA-55-3B alarm panel failed to test properly.	None	Annunciator circuitry card was not seated properly, retainer pin broken.	XA-55-3B alarm panel inoperable.	Replaced the annunciator card, panel operated properly. TR #269531
11/16/82	Off-Gas	3A stack dilution fan damper motor.	Damper motor inoperable.	None	Bad damper motor.	Fan damper inoperable.	Replaced the damper motor, fan damper operated properly. TR #313141

FIELD SERVICES SUMMARY

November 1982

Major Work Areas

I. Work Synopsis

Work completed this monthly period: Jet pump hold down beam replacement, invesel ISI, X-ray welds for P0538, LLRT of "B" feedwater valves, unit 1 "B" transformer placed into service with 2B received from power service shop, shrunk-on-wheel inspection for the turbine and 2A and 2B recirculation MG set maintenance.

On-going work during this month: Began torus sandblasting and painting. Contractor arrived onsite to begin SRV test/instrumentation for the torus. Began preparation installation of thermocouples in the "B" low pressure turbine. The electrical/mechanical work for the scram discharge header continued.

II. Major Work Areas

A. Refuel area - the jet pump hold down beam replacement was completed in October. After completion of the jet pump work the ISI group conducted an invessel inspection of the RPV and a UT analysis of the RPV flanges. All ISI inspections were acceptable.

B. Turbine - the results of the shrunk-on-wheel inspection required that two thermocouples be installed in the "B" low pressure turbine to give operations a temperature reading during startup. At this time the final design drawings and associated paperwork have not been received onsite. With the current return to service date of January 25, 1982 the thermocouple modification needs to be completed by December 17, 1982.

FIELD SERVICES SUMMARY

November 1982

II. Major Work Areas (Continued)

B. (Continued)

The "A" low pressure turbine was reassembled and work started on boring 18 coupling holes in the No. 1 coupling. All repairs have been made to the LP "B" diaphragms and spindle. All RFTT's and RFP' have been reassembled. The RFTP's still require governor checks, alignment of controls and installation of vibration probes.

C. Electrical - the completed work in support of unit 2 cycle 4 outage activities during the past month are: placed three GE 500kV transformers in storage. The repaired 500kV transformer for location 2B arrived from the power service shop on November 15, and the defective 2B unit was transported to the power service shop for repair. Transformer 1B previously installed was placed into service during a unit 1 short cutage in mid-November. The recirculation pump MG set maintenance for 2A and 2B was finished. All welds and QC torque verifications for all LPCI MG sets were made, as well as grounding of MG sets 2EA and 2DN completed. One-hundred percent completed on work for ILRT connector cable installations. The AC power for recirculation controls and the three second time delay was finished. On-going activities include: LPRM testing and connector installation. Conduit for overheading lighting in unit 2 control room is at 98 percent, wiring at 35 percent and removal of old conduit at 40 percent; however, problems related to conduit hangers slowed down this work. LPCI installation of conduit and

FIELD SERVICES SUMMARY

November 1982

II. Major Work Areas (Continued)

C. (Continued)

hangers as well as internal wiring and junction box work continues; the pulling of power cable from MG sets to 480 volt shutdown boards and the installation of voltage regulators for 2EA and 2DN is underway. Preparations are in progress for making LPCI Loop I tie-ins. EMI-71 motor and EMI-7 breaker maintenance work is 94 and 95 percent completed, respectively. Cable termination work for the ILRT connector modification is 98 percent with work continuation on terminal blocks, junction boxes and conduit. Preparations are underway for pulling cables related to the two new MSRV's.

Emergency lighting work was restarted and 39 battery packs/19 cases have beeen installed; some conduit installations have begun in the reactor building. Conduit/brackets for LPCI bypass is at 90 percent with anticipated tie-ins the first week of December. Heat cure cable splicing for the torus has started and is 90 percent completed overall. The recirculation MG set brush holder covers and rigging has been sent to the PSS for that portion of the modification. Scram discharge header continues with conduit and cable pull work at 81 percent, 35 percent for internal wiring, and cable terminations at 32 percent. This work has had problems with equipment; namely, level transmitter response time and which type of valve to use.

FIELD SERVICES SUMMARY

November 1982

II. Major Work Areas (Continued)

D. Mechanical - the major work performed in the mechanical section during the month of November was scram discharger header (PO392) modifications, CRD flush connection modification ((PO548) and MSIV poppet/guide rib modifications (PO613) . PO538 was completed this month after receipt of gasket for the blind flanges.

PO392 is still in work. Ten of eleven six inch X-ray welds have been complete and the last weld is being repaired. Design informatin receipt and material delivery has delayed completion of the instrumentation piping portion of PO392. PO613 is still in work. All poppet welding was completed this month and the inboard reassembly and LLRT was completed on "B" and "C" inboard MSIV's. "A" inboard is being worked and should be ready for LLRT soon. "D" inboard did not require modification this outage. The work effort is being channeled toward the inboard MSIV's to support fuel loading. Some workk was accomplished on the outboard MSIV's and this work will be complete in time to support the ILRT.

E. Modifictions - 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 preoperation work for unit 1 cycle 5 outage. Responded to LER's and CCPR's.

FIELD SERVICES SUMMARY

November 1982

II. Major Work Areas (Continued)

F. Planning and scheduling - the report period for November ended with unit 2 cycle 4 work in progress on day number 123 of the current outage. Work is nearing completion in several major areas of involvement, however, the timely completion of work items affecting system outage durations has not been done as was originally planned. This will, no doubt, have an affect on the overall outage schedule. Significant events for the month that are related to the outage effort includes:

-Completion of fuel inspection. No bundle reconstitution will be required for reload.

-Torus sandblasting started November 18 and coating work began shortly thereafter.

-Main steam isolation valves (MSIV's) - 7 of 8 valves failed the "as found" local leak rate testing early in the outage. The 7 consisted of 3 (of the 4) drywell location MSIV's and all 4 of the steam tunnel MSIV's. The 3 drywell MSIV's requiring maintenance will be given priority attention in order to support core reload prerequisites.

-There were 40 weld joints identified as requiring more sensitive UT inspection techniques to check for intergranular stress corrosion cracking. Thirty-six of these were evaluated as satisfactory and 4 remain.

-"B" feedwater line valves passed required local leak rate testing.

FIELD SERVICES SUMMARY

November 1982

II. Major Work Areas (Continued)

F. (Continued)

-Low pressure "B" turbine shrunk-on-wheel inspection revealed indications that will require revising the turbine warmup procedure (based on GE recommendations) this will necessitate installation of a thermocouple in the LP "B" internals. Drawings and materials are needed for this work.

-Completed PO450 jet pump hold down beam replacement.

-2B main transformer arrived from the Power Service Shop.

-Material problems continue to plague PO392 scram discharge header modification.

The Planning Department Programmer Analyst attended a Project Software and Development, Inc. class on advanced PROJECT/2 techniques. This was a very worthwhile effort in order to maximize the benefit of the computerized project management system currently being used. A schedule update was performed November 12, 1982 and it was announced that work had slipped approximately 6 days behind schedule.

C. Torus

Williams Sandblasting Contractor moved onsite November 15, and started sandblasting. By the end of November bays 5, 6, 7, 8, 9, 10, and 11 were completed with painting and heatcure equipment was set up in bay 9 ready for checkout. Sandblasting was completed in bays 12, 13, and 14 and sand removal continued.

FIELD SERVICES SUMMARY

November 1982

II. Major Work Areas (Continued)

G. (Continued)

Painting efforts are on schedule. Teledyne moved onsite November 30 to start SRV test/instrumentation in bays 5, 6, and 7, however, these bays lacked two additional coats of paint and were not released to Teledyne until December 2, 1982 for instrument work inside the torus.

H. Administrative - the overtime percentage for the month of October was 22 percent, with 154,865 straight time hours and 44,014 overtime hours. As of November 28, year-to-date overtime percentage was 25 percent, 285,332 hours of straight time and 94,259 overtime hours. The overall goal of the overtime percentage is 17 percent. The O & M budget for November was 2,426,626 and the expenditures were $2,394,999. The capital budget $3,773,786 and the expenditures were $1,828,760. Overall budget was $6,200,412, with the overall expenditures being $4,223,759. The November overall budget is $6,308,834.