

TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER PRODUCTION
BROWNS FERRY NUCLEAR PLANT

MONTHLY OPERATING REPORT
March 1, 1982 - March 31, 1982

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

Submitted By:

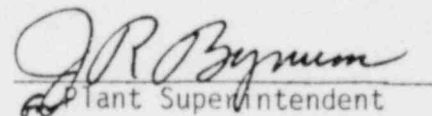

Plant Superintendent

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Operations Summary

March 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 four reportable occurrences and no revisions to previous reportable occurrences reported to NRC during the month of March.

Unit 1

There were five scrams on the unit during the month. On March 9, the reactor scrammed due to a turbine trip caused by the loss of hydraulic control fluid pressure which occurred when a check valve in the EHC pump discharge was erroneously unbolied while maintenance personnel were changing out the EHC filters. The reactor scrammed on March 14 because of a MSIV isolation caused by a false main steam line low-pressure signal due to high-pressure steam induced vibration. On March 15, the reactor scrammed because of a false high reactor water level signal which was most likely caused by maintenance personnel performing an instruction. The reactor was manually scrammed on March 20, for a drywell entry to locate and repair an unidentified leak in the drywell. On March 25, the reactor was manually scrammed when an EHC oil leak on a supply line to the servo valve for a turbine control valve caused a rapid decrease in the EHC oil tank level.

Unit 2

There were no scrams on the unit during the month.

Unit 3

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

Operations Summary (Continued)

March 1982

Fatigue Usage Evaluation

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

<u>Location</u>	<u>Usage Factor</u>		
	<u>Unit 1</u>	<u>Unit 2</u>	<u>Unit 3</u>
Shell at water line	0.00545	0.00432	0.00373
Feedwater nozzle	0.26253	0.18768	0.14166
Closure studs	0.21287	0.14460	0.12339

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

Common System

Approximately $1.33\text{E}+06$ gallons of waste liquids were discharged containing approximately $2.12\text{E}+00$ curies of activities.

Operations Summary (Continued)

March 1982

Refueling InformationUnit 1

Unit 1 is scheduled for its fifth refueling beginning on or about March 4, 1983, with a scheduled restart date of June 3, 1983. This refueling will involve loading 8 X 8 R (retrofit) fuel assemblies into the core; finishing the torus modification; turbine inspection; 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 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 is in progress to increase the spent fuel pool capacity to 3,471 assemblies.

Unit 2

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

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

Operations Summary (Continued)

March 1982

Refueling Information (Continued)Unit 2 (Continued)

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

Unit 3

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

There are 764 fuel assemblies presently in the reactor vessel. There are 288 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 985 locations.

Significant Operational Events

Unit 1

Date	Time	Event
3/01/82	0001	Unit 1 remains offline to replace leaking solenoid valve on core spray testable check valve 75-26.
3/02/82	0040	Commenced rod withdrawal for startup.
	0216	Reactor Critical No. 168.
	0415	Rolled T/G.
	0500	Synchronized generator, commenced power ascension.
	1730	Commenced PCIOMR from 83% thermal power (Sequence "A").
3/03/82	1300	Reactor thermal power at 98%, maximum flow, rod limited.
	1600	Reactor thermal power at 97%, maximum flow, rod limited.
	1800	Reactor thermal power at 96%, maximum flow, rod limited.
	2000	Reactor thermal power at 95%, maximum flow, rod limited.
	2300	Reactor thermal power at 94%, maximum flow, rod limited.
3/04/82	0007	Commenced reducing thermal power for control rod pattern adjustment.
	0100	Reactor thermal power at 68%, control rod pattern adjustment in progress.
	0142	Commenced rod withdrawal and increasing flow for control rod pattern adjustment.
	0930	Control rod pattern adjustment complete, commenced PCIOMR from 89% thermal power.
	1745	Reactor thermal power at 99%, maximum flow, rod limited.
	1808	Reduced thermal power to 97% for flux shaping and to bring "R" factor in limits.
3/05/82	0100	"R" factor back in limits, commenced power ascension.
	0630	Reactor thermal power at 99%, maximum flow, rod limited.
3/06/82	2200	Commenced reducing thermal power for turbine control valve tests and SI's.
	2225	Reactor thermal power at 93%, holding for turbine control valve tests and SI's.
	2240	Turbine control valve tests and SI's complete, holding for control rod pattern adjustment.
	2325	Commenced reducing thermal power for control rod pattern adjustment.

Significant Operational Events

Unit 1

Date	Time	Event
3/07/82	0100	Reactor thermal power at 77%, holding for control rod pattern adjustment.
	0130	Control rod pattern adjustment complete, commenced power ascension.
	0400	Commenced PCIOMR from 95% thermal power (Sequence "A").
	0800	Reactor thermal power at 99%, maximum flow, rod limited.
	0855	Commenced reducing thermal power from 99% for control rod pattern adjustment.
	1100	Reactor thermal power at 75%, holding for control rod pattern adjustment.
	1210	Control rod pattern adjustment complete, commenced power ascension.
	1330	Commenced PCIOMR from 90% thermal power (Sequence "A").
	2100	Reactor thermal power at 99%, maximum flow, rod limited.
3/08/82	1622	Commenced reducing thermal power due to 1/4 isolation signal on "B" main steam line low pressure.
	1800	Reactor thermal power at 98%, holding due to 1/4 isolation signal on main steam line "B" low pressure.
3/09/82	0001	Commenced power ascension from 98% thermal power.
	0100	Reactor thermal power at 99%, maximum flow, rod limited.
	0940	Reactor Scram No. 149 ⁽¹⁾ from 99% thermal power on turbine trip from loss of EHC oil pressure. EHC oil pressure was lost when a check valve in the EHC pump discharge was erroneously unbolted while maintenance men were changing out the oil filters.
	2245	Commenced rod withdrawal for startup.
3/10/82	0150	Reactor Critical No. 169.
	0516	Rolled T/G.
	0542	Synchronized generator, commenced power ascension.
	2000	Commenced PCIOMR from 74% thermal power (Sequence "B").
3/11/82	2200	Reactor thermal power at 97%, maximum flow, rod limited.
3/12/82	1000	Reactor thermal power at 96%, maximum flow, rod limited.
	1400	Reactor thermal power at 95%, maximum flow, rod limited.

Significant Operational Events

Unit 1

Date	Time	Event
3/12/82	2200	Reactor thermal power at 94%, maximum flow, rod limited.
	2330	Commenced reducing thermal power for control rod pattern adjustment and SI's.
3/13/82	0100	Reactor thermal power at 69%, holding for control rod pattern adjustment and SI's.
	0330	Control rod pattern adjustment and SI's complete, commenced power ascension.
	0630	Commenced PCIOMR from 82% thermal power (Sequence "B").
	2300	Reactor thermal power at 99%, maximum flow, rod limited.
3/14/82	0703	Reactor Scram No. 150 ⁽²⁾ from 99% thermal power. Indications are that the trip was due to false indication of steam line low pressure.
	1446	Commenced rod withdrawal for startup.
	1825	Reactor Critical No. 170.
	2015	Rolled T/G.
	2030	Synchronized generator, commenced power ascension.
3/15/82	0330	Commenced PCIOMR from 89% thermal power (Sequence "B").
	0455	Reduced thermal power from 91% to 89%, holding for control rod pattern adjustment.
	1135	Commenced PCIOMR from 89% thermal power (Sequence "B").
	1313	Reactor Scram No. 151 ⁽¹⁾ from 91% thermal power on reactor high water level indication. It is suspected that the scram was due to personnel error while maintenance personnel were performing SI 4.2.B-69.
	2043	Commenced rod withdrawal for startup.
	2247	Reactor Critical No. 171.
3/16/82	0109	Synchronized generator, commenced power ascension.
	0703	Commenced PCIOMR from 80% thermal power (Sequence "B").
	1730	Stopped PCIOMR at 89%, reducing thermal power for removal of "B" string high pressure heater from service for maintenance on "B1" moisture separator drain pump regulator valve 6-73A.
	2030	"B" string high pressure heaters out of service for maintenance, reactor thermal power holding at 86%.

Significant Operational Events

Unit 1

Date	Time	Event
3/17/82	0050	Commenced power ascension from 86% thermal power, "B" string high pressure heaters remain out of service.
	0400	Reactor thermal power at 94%, maximum flow, "B" string high pressure heaters out of service.
	2400	Reactor thermal power at 90%, maximum flow, "B" string high pressure heaters out of service.
3/18/82	0200	Commenced reducing thermal power from 90% to shutdown when chemistry samples revealed the SLC storage tank was outside technical specification limits on sodium pentaborate concentration.
	0512	Control rod pattern adjustment in progress, power reduction continues for SLC problem.
	0645	Stopped reducing thermal power at 67%, SLC concentration back in limits, commenced power ascension.
	1240	Commenced PCIOMR from 80% thermal power (Sequence "B").
	2125	Commenced reducing thermal power from 90% for placing "B" string high pressure heaters in service.
3/19/82	0015	"B" string high pressure heaters placed in service, commenced power ascension from 79% thermal power.
	0115	Commenced PCIOMR from 86% thermal power (Sequence "B").
	1700	Reactor thermal power at 96%, maximum flow, rod limited.
	2200	Reactor thermal power at 95%, maximum flow, rod limited.
	2345	Commenced reducing thermal power for turbine control valve tests and SI's.
3/20/82	0100	Reactor thermal power at 87%, holding for turbine control valve tests and SI's.
	0130	Turbine control valve tests and SI's complete, commenced PCIOMR (Sequence "B").
	0910	Commenced reducing thermal power from 96% for shutdown due to high drywell, unidentified leakage.
	1119	Reactor Scram Manual No. 152 ⁽²⁾ from 40% thermal power to investigate high drywell leakage. Inspection of drywell revealed that a vent line on valve 1-69-1 was broken resulting in the excess drywell leakage. The unit will remain offline for a small piping inspection, repairs to 69-1 limit switches, repairs to IRM "B" and repairs to a leak on the feedwater heater line in the moisture separator room.

Significant Operational Events

Unit 1

Date	Time	Event
3/21/82	0450 2000	Reactor in cold shutdown. Maintenance complete on vent line valve 1-69-1.
3/22/82	0010 0430 1100 2130	Maintenance complete on feedwater heater line. Unit remains offline due to problems with rod sequence control system, and limit switch for 1-69-1 valve. Maintenance complete on limit switches for 1-69-1 valve. Problems with IRM "B" unresolved (will repair during next outage).
3/23/82	0830 0925 1945 2013	Commenced rod withdrawal for startup. Reactor Critical No. 172. Rolled T/G. Synchronized generator, commenced power ascension.
3/24/82	1430 2130	Commenced PCIOMR from 73% thermal power (Sequence "B"). Commenced reducing thermal power from 84% to shutdown due to an EHC leak on control valve servo valve.
3/25/82	0002 0358 0559 0818 0833 1630 1900 2030 2130	Reactor Scram Manual NO. 153 from 66% thermal power for repair to EHC leak on control valve servo valve. Maintenance complete on servo valve, commenced rod withdrawal for startup. Reactor Critical No. 173. Rolled T/G. Synchronized generator, commenced power ascension. Commenced PCIOMR from 86% thermal power (Sequence "B"). Reduced thermal power from 96% to 73% for control rod pattern adjustment. Control rod pattern adjustment complete, commenced power ascension. Commenced PCIOMR from 84% thermal power (Sequence "B").
3/26/82	0530 0800 1000 1300	Reactor thermal power at 90%, maximum flow, rod limited. Reactor thermal power at 89%, maximum flow, rod limited. Reactor thermal power at 88%, maximum flow, rod limited. Reactor thermal power at 87%, maximum flow, rod limited.

Significant Operational Events

Unit 1

Date	Time	Event
3/26/82	1600	Reactor thermal power at 86%, maximum flow, rod limited.
	1715	Commenced withdrawing control rods for control rod pattern adjustment.
	1800	Reactor thermal power at 96%, maximum flow, rod limited.
	2230	Commenced reducing thermal power for control rod pattern adjustment and turbine control valve tests and SI's.
3/27/82	0037	Turbine control valve tests complete, reactor power at 66%, commenced increase for control rod pattern adjustment.
	0700	Control rod pattern adjustment complete, holding at 80% thermal power for testing of no. 2 bus. (Load limited while testing 500 kV offsite power).
	1545	Commenced PCIOMR from 80% thermal power (Sequence "B").
	2045	"A" recirculation pump tripped from 88% thermal power reducing thermal power to 54%.
	2015	"A" recirculation pump in service, commenced power ascension.
	2200	Commenced PCIOMR from 79% thermal power (Sequence "B").
3/28/82	1530	Reactor thermal power at 96%, MSL pressure switches limited.
3/30/82	1012	Commenced power ascension from 96% thermal power.
	1320	Reactor thermal power at 99%, maximum flow, rod limited.
3/31/82	1415	Commenced reducing thermal power for vibration test on main steam line low pressure switches.
	1900	Reactor thermal power at 93% for vibration tests on MSL low pressure switches.
	1930	Vibration testing on MSL low pressure switches complete, commenced power ascension.
	2000	Commenced PCIOMR from 97% thermal power (Sequence "B").
	2015	Reduced thermal power from 97% to 96% for maintenance on "C1" heater level transmitter.
	2100	Commenced PCIOMR from 96% thermal power (Sequence "B").
	2400	Reactor thermal power at 98%, PCIOMR in progress (Sequence "B").

Significant Operational Events

Unit 2

Date	Time	Event
3/01/82	0001	Reactor thermal power at 99%, maximum flow, rod limited.
3/05/82	2150	Reduced thermal power to 92% for turbine control valve tests.
	2240	Turbine control valve test complete, reducing thermal power for recirculation pump MG set brush replacement.
	2335	Reactor thermal power at 50%, holding for recirculation pump MG set brush replacement.
3/06/82	0228	Recirculation pump MG set brush replacement complete, commenced power ascension.
	0430	Commenced PCIOMR from 76% thermal power (Sequence "A").
	2100	Reactor thermal power at 99%, maximum flow, rod limited.
3/07/82	0130	Reduced thermal power to 91% for control rod pattern adjustment.
	0147	Control rod pattern adjustment complete, commenced power ascension.
	0300	Reactor thermal power at 99%, maximum flow, rod limited.
	0840	Reduced thermal power to 98% for control rod pattern adjustment.
	0942	Control rod pattern adjustment complete, commenced PCIOMR (Sequence "A").
	1030	Reactor thermal power at 99%, maximum flow, rod limited.
3/10/82	1645	Reduced thermal power to 97% for control rod pattern adjustment.
	1647	Withdrawing control rods for control rod pattern adjustment.
	1900	Reactor thermal power at 99%, maximum flow, rod limited.
3/13/82	0110	Commenced reducing thermal power for turbine control valve tests and SI's.
	0130	Reactor thermal power at 86%, holding for turbine control valve tests and SI's.
	0137	Turbine control valve tests complete, reducing thermal power for SI 4.1.A.11 (MSIV functional) and SI 4.7.D.1.b-2 (MSIV full closure).
	0300	Reactor thermal power at 68%, holding for SI's.
	0350	SI 4.1.A.11 and SI 4.7.D.1.b-2 completed, commenced power ascension.

Significant Operational Events

Unit 2

Date	Time	Event
3/13/82	0700	Reactor thermal power at 99%, maximum flow, rod limited.
3/16/82	1855	Commenced reducing thermal power for removal of "A" condensate booster pump from service for maintenance on oil lines.
	1920	Reactor thermal power at 82%, holding for "A" condensate booster pump maintenance.
	2355	"A" condensate booster pump returned to service, commenced power ascension.
3/17/82	0100	Reactor thermal power at 99%, maximum flow, rod limited.
	1045	Commenced reducing thermal power for maintenance on "A" condensate booster pump oil line.
	1300	Reactor thermal power at 72%, holding for maintenance on "A" condensate booster pump oil line.
	1340	"A" condensate booster pump returned to service, commenced power ascension.
	1430	Commenced PCIOMR from 95% thermal power (Sequence "A").
	1600	Reactor thermal power at 99%, maximum flow, rod limited.
3/20/82	0130	Reduced thermal power to 73% for control rod pattern adjustment.
	0330	Control rod pattern adjustment complete, commenced power ascension.
	0430	Commenced PCIOMR from 91% thermal power (Sequence "A").
	1000	Reactor thermal power at 99%, maximum flow, rod limited.
3/24/82	2140	Commenced reducing thermal power for testing of No. 2 buss (load limited while testing 500-kV offsite power with only three lines available).
	2300	Reactor thermal power at 82%, holding for testing of No. 2 bus.
3/25/82	0015	No. 2 bus testing complete, commenced power ascension.
	0200	Reactor thermal power at 99%, maximum flow, rod limited.
	1016	Commenced reducing thermal power for testing of No. 2 bus.
	1200	Reactor power at 88%, holding for testing of No. 2 bus.
	1300	Commenced power ascension from 88% thermal power.
	1400	Reactor thermal power at 99%, maximum flow, rod limited.

Significant Operational Events

Unit 2

Date	Time	Event
3/27/82	0305	Commenced reducing thermal power for turbine control valve tests and SI's.
	0342	Reactor thermal power at 74%, holding for turbine control valve tests and SI's.
	0535	Turbine control valve tests and SI's complete, reducing thermal power for testing of No. 2 bus.
	0700	Reactor thermal power at 68%, holding for testing of No. 2 bus.
	1440	Commenced power ascension from 68% thermal power.
	1445	Reactor thermal power at 76%, holding for testing of No. 2 bus.
	1550	Commenced power ascension from 76% thermal power.
	2000	Reactor thermal power at 99%, maximum flow, rod limited.
3/29/82	1200	Reactor thermal power at 99%, maximum flow, EOC-4 coastdown begins.
3/30/82	0001	Reactor thermal power at 98%, maximum flow, EOC-4 coastdown.
3/31/82	0700	Reactor thermal power at 97%, maximum flow, EOC-4 coastdown.
	2400	Reactor thermal power at 97%, maximum flow, EOC-4 coastdown.

Significant Operational Events

Unit 3

Date	Time	Event
3/01/82	0001	End of Cycle 4 refuel outage continues.
3/31/82	2400	End of Cycle 4 refuel outage continues.

(1) Personnel Error

(2) Equipment Malfunction

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-259
 UNIT Browns Ferry - 1
 DATE 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205 729 6846

MONTH March 1982

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	<u>-14</u>
2	<u>547</u>
3	<u>1017</u>
4	<u>980</u>
5	<u>1071</u>
6	<u>1050</u>
7	<u>986</u>
8	<u>1063</u>
9	<u>422</u>
10	<u>524</u>
11	<u>945</u>
12	<u>1026</u>
13	<u>919</u>
14	<u>365</u>
15	<u>510</u>
16	<u>785</u>

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	<u>986</u>
18	<u>846</u>
19	<u>991</u>
20	<u>445</u>
21	<u>-15</u>
22	<u>-15</u>
23	<u>59</u>
24	<u>703</u>
25	<u>489</u>
26	<u>932</u>
27	<u>823</u>
28	<u>963</u>
29	<u>1019</u>
30	<u>1051</u>
31	<u>1041</u>

INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. 50-260
 UNIT Browns Ferry - 2
 DATE 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205 729 6846

MONTH March

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1	1086
2	1083
3	1090
4	1080
5	1083
6	922
7	1033
8	1084
9	1086
10	1098
11	1089
12	1083
13	1019
14	1078
15	1083
16	1032

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	1037
18	1075
19	1067
20	1023
21	1067
22	1077
23	1078
24	1052
25	1061
26	1067
27	891
28	1081
29	1070
30	1068
31	1056

INSTRUCTIONS

On this form, 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 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205 729 6846

MONTH March

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

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
17	-8
18	-8
19	-8
20	-9
21	-9
22	-10
23	-10
24	-10
25	-10
26	-11
27	-12
28	-12
29	-12
30	-11
31	-12

INSTRUCTIONS

On this format, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

OPERATING DATA REPORT

DOCKET NO. 50-259
 DATE 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205 729 6846

OPERATING STATUS

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

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	744	2,160	67,202
12. Number Of Hours Reactor Was Critical	604.58	1,929.45	41,244.25
13. Reactor Reserve Shutdown Hours	139.42	182.15	5,397.35
14. Hours Generator On-Line	580.17	1,898.85	40,329.02
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	1,763,647	5,978,649	112,853,556
17. Gross Electrical Energy Generated (MWH)	556,420	1,943,970	37,236,420
18. Net Electrical Energy Generated (MWH)	540,315	1,893,475	36,162,384
19. Unit Service Factor	78.0	87.9	60.0
20. Unit Availability Factor	78.0	87.9	60.0
21. Unit Capacity Factor (Using MDC Net)	68.2	82.3	50.5
22. Unit Capacity Factor (Using DER Net)	68.2	82.3	50.5
23. Unit Forced Outage Rate	22.0	12.1	26.5
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each):			

25. If Shut Down At End Of Report Period, Estimated Date of Startup:		
26. Units In Test Status (Prior to Commercial Operation):	Forecast	Achieved
INITIAL CRITICALITY	_____	_____
INITIAL ELECTRICITY	_____	_____
COMMERCIAL OPERATION	_____	_____

OPERATING DATA REPORT

DOCKET NO. 50-260
 DATE 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205.729.6846

OPERATING STATUS

1. Unit Name: Browns Ferry - 2
2. Reporting Period: March 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	744	2,160	62,143
12. Number Of Hours Reactor Was Critical	744	1,993.78	40,440.74
13. Reactor Reserve Shutdown Hours	0	157.72	13,639.48
14. Hours Generator On-Line	744	1,938.38	39,135.47
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	2,337,365	6,184,740	112,837,530
17. Gross Electrical Energy Generated (MWH)	806,430	2,088,710	37,521,358
18. Net Electrical Energy Generated (MWH)	788,221	2,038,582	36,460,728
19. Unit Service Factor	100	89.7	63.0
20. Unit Availability Factor	100	89.7	63.0
21. Unit Capacity Factor (Using MDC Net)	99.5	88.6	55.1
22. Unit Capacity Factor (Using DER Net)	99.5	88.6	55.1
23. Unit Forced Outage Rate	0	10.3	28.4
24. Shutdowns Scheduled Over Next 6 Months (Type, Date, and Duration of Each): <u>August 1982 - Refuel and modifications.</u>			

25. If Shut Down At End Of Report Period, Estimated Date of Startup: _____
26. Units In Test Status (Prior to Commercial Operation):
- | | Forecast | Achieved |
|----------------------|----------|----------|
| INITIAL CRITICALITY | _____ | _____ |
| INITIAL ELECTRICITY | _____ | _____ |
| COMMERCIAL OPERATION | _____ | _____ |

OPERATING DATA REPORT

DOCKET NO. 50-296
 DATE 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205 729 6846

OPERATING STATUS

1. Unit Name: Browns Ferry -3	Notes
2. Reporting Period: March 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	

	This Month	Yr.-to-Date	Cumulative
11. Hours In Reporting Period	744	2,160	44,568
12. Number Of Hours Reactor Was Critical	0	0	32,466.98
13. Reactor Reserve Shutdown Hours	0	0	2,141.53
14. Hours Generator On-Line	0	0	31,750.78
15. Unit Reserve Shutdown Hours	0	0	0
16. Gross Thermal Energy Generated (MWH)	0	0	93,858,620
17. Gross Electrical Energy Generated (MWH)	0	0	30,998,190
18. Net Electrical Energy Generated (MWH)	0	0	30,088,046
19. Unit Service Factor	0	0	71.2
20. Unit Availability Factor	0	0	71.2
21. Unit Capacity Factor (Using MDC Net)	0	0	63.4
22. Unit Capacity Factor (Using DER Net)	0	0	63.4
23. Unit Forced Outage Rate	0	0	9.2
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 March

DOCKET NO. 50-259
 UNIT NAME Browns Ferry - 1
 DATE 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205 729 6846

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
203	3-01-82	F	29.00	A	2				Reactor scram continues for maintenance on core spray testable check valve 1-75-26
204	3-04-82	S		H					Derated for control rod pattern adjustment
205	3-06-82	S		H					Derated for control rod pattern adjustment
206	3-07-82	S		H					Derated for control rod pattern adjustment
207	3-09-82	F	20.03	G	3				Reactor scram due to loss of EHC oil pressure when maintenance personnel were attempting to change EHC oil filter
208	3-12-82	S		H					Derated for control rod pattern adjustment and SI's
209	3-14-82	F	13.45	A	3				Reactor scram due to false indication of steam line low pressure.

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

REPORT MONTH March

DOCKET NO. 50-259
 UNIT NAME Browns Ferry - 1 Cont.
 DATE 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205 729 6846

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
210	3-15-82	F	11.93	G	3				Reactor scram on reactor high water level when maintenance personnel were performing SI 4.2.B-69.
211	3-18-82	F		D					Derated because sodium pentaborate concentration was out of technical specifications.
212	3-20-82	F	80.90	A	2				Reactor scram when vent line on valve 1-69-1 broke causing high drywell leakage.
213	3-25-82	F	8.52	A	2				Reactor scram to repair leak on EHC control valve servo valve.
214	3-26-82	S		H					Derated for control rod pattern adjustment, turbine control valve tests and SIs.
215	3-27-82	F		A					Derated because "A" recirculation pump tripped.

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

REPORT MONTH March

DOCKET NO. 50-260
 UNIT NAME Browns Ferry - 2
 DATE 4-1-82
 COMPLETED BY L. Thom
 TELEPHONE 205 729 6846

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action to Prevent Recurrence
228	3-05-82	S		B					Derated to replace recirculation pump MG set brushes.
229	3-13-82	S		B					Derated for MSIV functional and full closure SIs.
230	3-17-82	F		B					Derated for maintenance on "A" condensate booster pump oil line.
231	3-20-82	S		H					Derated for control rod pattern adjustment.
232	3-27-82	S		B					Derated for turbine control valve tests and SIs.

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 March

DOCKET NO. 50-296
 UNIT NAME Browns Ferry - 3
 DATE 4-1-82
 COMPLETED BY T. Thom
 TELEPHONE 205 729 6846

No.	Date	Type ¹	Duration (Hours)	Reason ²	Method of Shutting Down Reactor ³	Licensee Event Report #	System Code ⁴	Component Code ⁵	Cause & Corrective Action (to Prevent Recurrence)
93 (Cont)	3-01-82	S	744	C	2				Reactor scram to accommodate EOC-4 refuel outage

¹
 F: Forced
 S: Scheduled

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

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

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

⁵
 Exhibit I - Same Source

(9/77)

BROWNS FERRY NUCLEAR PLANT UNIT 1 & Common

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of March 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
3/1/82	RHRSW	PS-24-134A	During the performance of SI4.2.B-67 (RHRSW Initiating Logic) PS-24-134A was found to be inoperable.	None, redundant raw cooling water low pressure logic (PS-24-134B) was operable.	Broken wires to PS-24-134A.	PS-24-134A was inoperable.	Re-terminated wires LB96 and LB97 and the SI was successfully completed. TR #279205
3/2/82	Neutron Monitoring	'C' TIP machine shear valve initiator circuitry	Shear valve initiator circuit inoperable.	None	Loose wire connection in cannon plug.	One of the two initiator circuits for the 'C' TIP machine shear valve was inoperable.	The loose connection was repaired and the TIP returned to service. TR #231743
3/2/82	Diesel Generators	Local bell on D/G panel 0-25-331	Bell fail to alarm during the performance of SI4.11.C.3 & 4	None	Loose wire connection at bell.	Alarm bell on panel 25-331 was inoperable.	Tightened the wire connections and the alarm bell operated properly. TR #187436
3/10/82	Standby Gas-Treatment	FS-65-20A FS-65-42A FS-65-42B	During SI4.2.A.13 the flow switches were erratic.	None	FS 65-20A was out-of-adjustment and FS 65-42A & B were bad.	Flow switches were erratic.	Calibrated FS 65-20A and replaced FS 65-42 A & B. TR #187461 TR #187263

BROWNS FERRY NUCLEAR PLANT UNIT 1 & CommonCSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of March 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
3/16/82	Air Conditioning (Cooling-Heating)	Control bay chiller 1A.	Purge unit blowing fuses.	None	Fan locked up due to a broken fan blade hung in the drive belt.	Control bay chiller 1A inoperable.	Replaced the fan and drive belt. The chiller operated properly. TR #187285
3/19/82	High-Pressure Fire Protection	"A" Fire pump feeder breaker	The breaker spring charging motor took too long to charge spring on pump start.	None	Bad charging motor.	Spring charging motor operated too slow.	Replaced the charging motor and the breaker operated properly. TR #21357
3/20/82	Reactor Water Cleanup	FCV-1-69-1	The valve fail to fully close on isolation signal.	None	Torque switch was out of adjustment.	The valve would not completely seal closed.	Adjusted the torque switch per EMI-18. TR #231878
3/20/82	Core Spray Cooling	Testable check valve 1-75-26	Inspection for shorted circuit following water leak.	None	Limit switches were out-of-adjustment.	Indicating lights were not operating properly.	Adjusted the limit switches and the switches operated properly. TR #231888

BROWNS FERRY NUCLEAR PLANT UNIT 1 & CommonCSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of March 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
3/20/82	EECW	Relay 67BL1	EECW low flow alarm would not clear in the control room.	None	Burned relay 67BL1.	Received a false low flow alarm in the control room which would not clear.	Replaced the relay per EMI-23, the alarm circuitry operated properly. TR #231890
3/25/82	CRD	LA-085-085A	When tested- LA-85-85A failed to illuminate in the control room.	None	Bad annunciator circuitry card.	LA-85-85A failed to illuminate in the control room.	Replaced the bad card and the annunciator operated properly. TR #21366

BROWNS FERRY NUCLEAR PLANT UNIT 2CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of March 19 82

Date	System	Component	Nature of Maintenance	Effect on Safe Operation of The Reactor	Cause of Malfunction	Results of Malfunction	Action Taken To Preclude Recurrence
2/27/82	Rx Bldg. Heating & Ventilation	FCO-2-64-41 position switch.	Rx zone exhaust to standby gas treatment (FCO-64-41) damper position switch was not operating properly.	None	The position switch actuator arm was out-of-adjustment.	Damper position switch was not operating properly.	Adjusted the switch actuator arm and the switch operated properly. TR #229817
3/16/82	Unit Preferred 120 Volt AC	Unit preferred MMG set 3 tie to battery Bd 2 emergency feeder breaker.	Breaker inoperable.	None	Bad relay and overcurrent trip device.	Emergency-feeder breaker inoperable.	Replaced the relay per EMI-23, replaced the overcurrent tripping device and performed EMI-7. TR #241512
3/18/82	SLC	(LA 2-63-1) SLC tank level abnormal annunciation circuitry.	LA2-63-1 would not test.	None	Loose annunciator circuitry card.	LA2-63-1 was inoperable on panel 9-5.	Tightened the annunciator card and the SLC tank level annunciator circuitry operated properly. TR #20026

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of March 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
3/3/82	Diesel Generators	D/G 3D overspeed trip alarm circuitry.	Received false alarm in control room which would not clear.	None	Loose annunciator circuitry card.	Received a false overspeed trip alarm in the control room.	Tightened the annunciator card and the alarm operated properly. TR #225951
3/13/82	Diesel Generators	Rectifier/reactor circuitry in the D/G 3C remote excitation cabinet.	During the performance of SI4.9.A.1.b RHR pump 3B failed to start.	None	A lead wire from a reactor in the remote excitation cabinet failed due to overheating at the crimp on a lug which connected it to a rectifier.	During performance of SI4.9.A.1.b Diesel Generator 3C started and tied onto 4kv shutdown Bd 3EC. When RHR 3B pump breaker closed on this board the diesel generator became unstable, the output voltage dropped and the RHR pump breaker tripped.	The wire was re-lugged and reterminated and the SI successfully completed. All wiring in the reactor compartment of the remote excitation cabinet for Diesel Generators 3A, 3B, 3C, and 3D was inspected and found to be acceptable. TR #187267

* CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of March 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
3/18/82	RCIC	Overspeed monitor.	Overspeed monitor trip circuitry inoperable.	None, unit in refueling outage.	The overspeed monitor relay contacts welded together during actuation. This is a 250-VDC circuit. It was discovered that the relay contacts are rated for 29-VDC and is the probable cause of the contacts welding together.	The overspeed monitor was initiating a continous trip signal	Freed and cleaned the relay contacts, the trip solenoid operated properly. This event is under evaluation. TR #187302
3/22/82	RCIC	Overspeed monitor.	A 130 volt negative ground was indicated.	None, unit in refueling outage.	A resistor in the overspeed monitor was grounded against the monitor case.	Overspeed monitor inoperable.	Cleared the grounded resistor and the over-speed monitor returned to service. TR #225756

CSSC EQUIPMENT

ELECTRICAL MAINTENANCE SUMMARY

For the Month of March 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
3/29/82	RCIC	RCIC over-speed monitor.	The overspeed monitor was inoperable.	None, unit in refueling outage.	Ground in over-speed monitor due to bad zenor's and capacitor in 250 V DC optional power circuit.	Overspeed monitor inoperable.	Replaced the bad zenor's and capacitor. The monitor operated properly. TR #187360
3/28/82	RBCCW	3B2 Drywell blower feeder breaker.	Blower would not start.	None	The breaker's manual trip mechanism was sticking in the trip position.	The breaker would not close.	Adjusted the manual trip mechanism and the breaker operated properly. TR #239322 31
3/30/82	Core Spray Cooling	HCV-75-1 limit switch	During the performance of SI3.2.10 hCV-75-1 limit switch did not operate properly.	None	The limit switch was out-of-adjustment.	"Position" indicating lights did not work properly.	Adjusted the limit switch. TR #25068

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of March 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
3-21	Rx. Fdwtr.	Rx. Vessel head vent valves 3-98, 3-99	Valves need repacking	None	Worn packing & gasket	Packing Leak,	Replaced gasket & packed valves TR# 326987
3-22	Main Steam	HCV-1-513	Steam Leak	None	Worn bonnet & gasket	Leak found at bonnet of valve	Replaced bonnet & gasket TR# 306677

BROWNS FERRY NUCLEAR PLANT UNIT 1CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of March 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
3-17	RCIC	RCIC Turbine	Rupture disc missing	None	Rupture disc missing (outer) See W.P. 6411	Personnel Error	Replaced rupture disc, torqued bolts to 100 ft-lbs. TR# 338891
3-17	RCIC	RCIC Turbine	Bolts missing	None	Unknown	Unknown	Replaced with all thread studs. TR# 274820
3-9	CRD	CRD Module 46-43	Leak	None	Stem out of adjustment	Outlet valve leaking through	Adjusted stem linkage TR# 280114
2-4	LPCI	1EN LPCI MG Set	Unusual vibr. & shaft movement	None	Bad gears in flywheel	Gen. bearing slinging grease	Replaced gears in flywheel. TR# 281448
3-9	CRD	CRD Module 34-43	Leak	None	Faulty seat disc, gasket & retainer	Scram discharge valve leaking	Replaced seat disc, body gaskets, disc retainers TR# 280162
3-22	Nuclear Boiler	HCV-10-505	Packing Leak	None	Worn packing	Old packing leaking- Valve back-seated open	Repacked valve TR# 227426

BROWNS FERRY NUCLEAR PLANT UNIT 2CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of March 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
3-16	HPCI	HPCI Turbine	Overspeed HPCI for test	None	N/A	N/A	Installed spool piece for overspeed test, TR# 338885
3-16	HPCI	HPCI Turbine	Overspeed test Completion	None	N/A	N/A	Removed spool piece & blanked flanges. TR# 233112.

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of March 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
3-16	Contr. Bay Heat, Vent & AC	3A Contrl Bay Chiller Cond. Valve	Valve failed to operate	None	Faulty Valve	Will not allow disch. press. to meet specs.	Installed new ball valve TR# 187432
2-11	D/G	D/G "A" #2 Air Comp.	HP Head gasket needs replac.	None	Bad high-press. head gasket	Leaking	Repl. high-pressure side head gasket TR# 228000
2-22	Core Spray	Cooler B&D Vent Line	Vent Line Broken	None	Unknown	Vent broken off of cooler coil	Resoldered vent to cooling coil. TR# 225884
3-5	CRD	Module 38-39	Leak	None	Faulty adapter & nut.	Leaking at nut.	Changed adapter & nut. TR# 225954
3-7	CRD	Module 30-43 Star Valve 85-229	Leak around star valve	None	Faulty Valve	Stem Leak	Cartridge Valve installed TR# 227627
2-27	CRD	Cartridge valve CRD hydraulic contrl. vent 18-19	Leak	None	Valve stem assembly bad	Valve leaking	Replaced valve stem assembly TR# 226031
2-18	CRD	CRD module 38-15 Valve	Leak	None	Worn packing	Valve packing leaking	Repacked Valve TR# 225845

CSSC EQUIPMENT

MECHANICAL MAINTENANCE SUMMARY

For the Month of March 19 82

DATE	SYSTEM	COMPONENT	NATURE OF MAINTENANCE	EFFECT ON SAFE OPERATION OF THE REACTOR	CAUSE OF MALFUNCTION	RESULTS OF MALFUNCTION	ACTION TAKEN TO PRECLUDE RECURRENCE
2-18	CRD	Module 38-31 Valve	Valve Leaking	None	Worn Packing	Valve packing leaking	Repacked valve TR# 225843
3-30	CRD	Star valve on module 02-31	Packing Leak	None	Worn Packing	Cartridge Valve Packing leak	Replaced packing element TR# 306353
3-31	Control Bay Heat Vent & AC	3B Control Bay Chiller Valve to condenser	Valve needs rebuilding	None	Worn Valve	Valve nonfunctional	Replaced with valve from 3-A TR# 187287
3-19	Control Bay Heat Vent & AC	3B Control Bay Chiller Condenser water reg. valve	Valve not operating properly	None	Worn Valve	Valve nonfunctional	Cleaned & rebuilt valve & orifices TR# 326988
3-26	CRD	Strainer plug Module 22-19 Block Valve	Plug leaking	None	Bad O'ring	Strainer Plug leaking	Replaced O'ring & tightened plug TR# 239306
4-1	HPCI	1-1/2" flex. metallic hose from disch. of the shaft-driven oil pmp.	Hose needs to be replaced	None	Flex. hose ruptured.	Leakage	Replaced hose TR# 337821
3-25	RHR	3A RHR Pump	Seal Leaking	None	Faulty seal	Leakage	Replaced seal TR# 225759

INSTRUMENT MAINTENANCE SUMMARY

CSSC EQUIPMENTFOR THE MONTH OF March 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 RECURRENT
U-1							
3-11	65	FIS-65-70A	Repair	None	Failed Photo Bulb	Switch Malfunction	None
3-22	68	FM-68-5	Calibration	None	Inst. Drift	Incorrect Output	None
U-2							
3-03	74	FT-74-56	Replace	None	Natural End of Life	Incorrect Output	None
3-24	71	FT-71-1B	Repair	None	Failed Amplifier	Incorrect Output	None
3-30	76	FR/PR 76-14	Repair	None	Failed Chart Drive Motor	Chart Failed To Advance	None
U-3							
3-04	75	FT-75-21	Replace	None	Natural End of Life	Incorrect Output	None
3-20	90	PR-90-142	Repair	None	Failed Amplifier	Loss of Indication	None

FIELD SERVICES SUMMARY

March 1982

The major field services efforts for the month of March were centered around completion of the remaining unit 3 end-of-cycle 4 outage work activities, security-related modifications, and preparatory work for unit 2 torus modifications.

Unit 3 cycle 4 outage activities progressed on schedule through the end of the month which was day 152 of the current 160-day schedule.

All April 1, 1982 security commitments were met.

On March 1, 1982 all major modification work for the torus had been completed and only minor work remained to be finished;

1. Inside torus:
 - (a) wiring for vacuum breaker switches.
 - (b) adjustment of vacuum breakers
 - (c) miscellaneous bolting for handrailing.
 - (d) replacement of U-bolts for H₂O₂ piping.
 - (e) painting touchup of weld areas for new installed hatch.
2. Outside torus:
 - (a) completion of gussets for tiedowns.
 - (b) completion of 4 ECCS supports.
 - (c) weldout of 18 MKII tiedown beams.
 - (d) installation of pipe hanger for HPCI test line when material certifications are received.
 - (e) installation of valve operator #74-150.

During the first week in March all wiring (approximately 8,000 feet) for vacuum breaker switches was pulled, tiedown gussets completed and all ECCS supports. Work continued on MKII tiedown beams with 50 percent complete and paint touchup at welds inside the torus for the new hatch was completed.

By the end of the second week (March 14, 1982) all wiring for vacuum breakers was completed and checked out; bolting for handrails was 100 percent complete, and MKII tiedown beam installation was 100 percent complete. General cleanup and move-out of scaffolds and material from inside the torus continued.

FIELD SERVICES SUMMARY (Continued)

March 1982

The following week, strong efforts were made in general cleanup of all torus areas and move-out from inside the torus in preparation of ILRT. Installation of valve operator #74-150 was completed in time for ILRT which started on March 19, 1982 and finished on March 22, 1982. The torus hatch was reopened on March 22, 1982, final adjustments on vacuum breakers were made, and removal of remaining scaffolding continued in preparation for final torus inspection with divers starting April 1, 1982.

Detailed plans and schedules for unit 2 torus preshutdown work were finalized in the first week of March. As manpower became available from unit 3, setup for tiedown work was made.

During the first half of March, efforts were made in cleanup and decontamination at elevation 519 in order to keep it unzoned. Scaffolding was erected to make template measurements of external ring girder reinforcing and setup for work was started with layout for drilling of tiedown anchor bolts. On March 18, 1982 material was received for temporary ECCS supports and the work plan for prefabrication was approved. Fabrication in the shop started immediately.

On March 23, 1982 permission was obtained to start actual modification work, and on March 25, 1982 the first holes for tiedown anchor bolts were drilled at ring girder #15. Drilling continued for the remainder of the month. By March 31, 1982 drilling was completed for 3 tiedowns, 2 torus jacking lugs removed in preparation for new cradle extensions, and 15 of 16 template measurements for external ring girder reinforcing were complete. The fabrication shop shipped 11 cradle extensions to the site during March.

FIELD SERVICES SUMMARY (Continued)

March 1982

The integrated electrical testing schedule was as follows:

1. The unit station service transformer work (P0275) and associated post modification testing was completed March 12, 1982.
2. The degraded voltage relay modification (P0275A) work and associated post-modification testing was completed March 19, 1982.
3. The 161kV capacitor bank modifications (P0403) capacitor bank 2 were completed as scheduled. Bank 1 modification work and post-modification testing associated with both capacitor banks was completed March 18, 1982.
4. DPSO Special Test Instruction STI 8A for making relay functional tests for the 500kV switchyard was accomplished to validate the 500kV system as an offsite power source. The procedure was completed by PSO March 27, 1982.
5. Other work, part of the integrated electrical schedule but also part of plant electrical maintenance work, was switchyard power circuit breaker maintenance complete March 4, 1982; backfeed testing complete March 13, 1982; common acceptance signal logic complete March 8, 1982; and the diesel load acceptance tests were completed March 23, 1982.

Other modification and maintenance work was as follows:

1. Security modification P0487 provides the Wells Fargo Alarm System with tamper indication; P0463 installs the Wells Fargo Alarm System at the RHRSW tunnels; and P0498 installs a balanced magnetic switch, cardreader, and necessary hardware at the intake structure. These modifications were completed prior to the required NRC commitment dates. P0286 illuminates the exterior of the protected area to at least 0.2 footcandles. This modification was completed approximately three weeks prior to the required commitment date. The remaining three weeks, prior to April 1, 1982, were spent upgrading the lighting system to meet detailed requirements of the NRC commitment.

FIELD SERVICES SUMMARY (Continued)

March 1982

2. Completed TIP system maintenance and testing
3. Completed miscellaneous LPRM connector repairs as identified.
4. Made up electrical connections to the existing MSRVs and installed conduit and cabling and made up connections to the two new MSRVs.
5. H_2O_2 System (P0315/P0361E) - installed necessary conduit and cabling for the modification. Installed internal board wiring and made system terminations.
6. Dewatering pumps (P0252) - Installation of conduit and cabling necessary for this modification is in progress.
7. Post-Accident Sampling Facility (P0314) - Field Services relocated a lighting cabinet and associated feeders and loads to facilitate the installation of the wall formwork. The floor slab was poured during the first part of the month.
8. Miscellaneous work - applying Flamemastic to cable trays; setting limits on various valves as required after maintenance; setting limits on drywell blowers; wiring drywell sump pumps; repairing flex conduit as found defective during the drywell closeout inspections; etc.

Field Services Mechanical Activities

During the month of March, the mechanical work for the Field Services Group unit 3 cycle 4 refueling outage was winding down significantly. The major work for the outage was primarily complete with the exception of core reload, integrated leak rate testing and reactor pressure vessel hydro preps and hydro and drywell closeout punchlist items. Two new work items for FSG mechanical was identified in March. These bring P0462 - strongback modification to drywell personnel access door (inner) and the addition of a clamp around leaking flange on the RWCU regenerative heat exchangers.

FIELD SERVICES SUMMARY (Continued)

March 1982

Field Services Mechanical Activities (Continued)Core Reload

Fuel movement for the core reload started February 27, 1982 and was completed-March 12, 1982.

During fuel movement minor problems were encountered with the air compressor, solenoid valve, depth counter, main hoist takeup reel, and grapple lights, all of which delayed fuel movement to some degree.

After completion of fuel load, problems were encountered with fuel-support piece alignment. The fuel cell at position 46-23 was unloaded to check for blade and fuel-support piece alignment. The fuel-support piece was reinstalled and alignment verified. Core verification was completed March 16, 1982 and the fuel pool gates were installed.

Integrated Leak Rate Test

Preparation for reactor pressure vessel (RPV) head assembly was started for ILRT. All preparations were completed, and the RPV head and drywell head were set March 18, 1982.

Drywell head torquing and the local leak rate test were completed March 19, 1982. Pressurization for the integrated leak rate test started March 20, 1982 after which containment depressurization was completed. On March 23 the drywell head was removed and the drywell turned over for general access.

Reactor Pressure Vessel Hydrostatic Test

The RPV head and associated components were torqued in preparation for reactor pressure vessel hydrostatic test. Pressurization for hydro started March 26, 1982. On March 27, 1982 hydro associated repairs were made and began repressurization. The hydrostatic test was completed at 2120 hours March 27, 1982.

FIELD SERVICES SUMMARY (Continued)

March 1982

Reactor Pressure Vessel Hydrostatic Test (Continued)

The drywell head was set, torqued, and passed LLRT March 28, 1982.

All refuel floor work scheduled for the unit 3 cycle 4 outage was completed March 28, 1982.

Other Activities

MSIV - The "A" inboard MSIV rib guide repair was completed and passed LLRT March 15, 1982. After the initial rib guide repair was made, several iterations of assembly, test, disassemble, and machining was required prior to completing LLRT on March 15, 1982.

MSRV Tailpipe Modification - This modification was physically completed in the month of March. The work plan is being processed for final signoff.

Condensers - Work on condensers "A," "B," and "C" was completed in March and the condensers were closed up.

Probolog - The probolog work was completed this month when the RBCCW "A" and "B" heat exchangers were eddy-current tested. One tube in the "A" heat exchanger required plugging.

ISI Snubbers - Completed repair/replacement of all drywell snubbers during March.

RWCU Regenerative Heat Exchanger - The flange clamp was installed this month on "C" regenerative heat exchanger. As of this writing no leak has been detected.

CRD Rebuild - The CRD rebuild effort was continued during March. Nineteen rebuilt CRDs are in inventory and will require testing prior to use. Six more remain to be rebuilt.

Strongback Modification - This modification to the drywell personnel access door (inner) was completed and the 1.5 pound air test was conducted. 50-pound test will be performed prior to startup.

FIELD SERVICES SUMMARY (Continued)

March 1982

Other Activities (Continued)

Turbine - Completed the couplings for the low pressure turbine, turbine generator and exciter. Completed the turbine oil flush, generator air test, and installed thermocouple in the No. 8 bearing. Stroked turbine valves in preparation for startup. Continued erection of permanent platforms around the intercept valves.

H₂O₂ - Completed relocation of solenoid valves and associated piping and electrical outside the torus. Completed post-modification test.

Manpower Utilization

The chart below depicts the field services manpower utilization during the first and last week in March. Note that the decrease in personnel (principally trades and labor) was necessary due to the decreasing unit 3 cycle 4 outage workload.

	Total Week of <u>3-3-83</u>	Total Week of <u>3-24-82</u>
1. (a) Hourly trades and labor	902	741
(b) Annual trades and labor	<u>57</u>	<u>57</u>
Subtotal	959	798
2. (a) Management	26	22
(b) Engineers and Aides	<u>41</u>	<u>41</u>
(c) Administrative and Clerical	<u>25</u>	<u>25</u>
Subtotal	92	88
3. (a) Power Service Shops	45	37
(b) Contractors	33	23
(c) Engineers on loan	31	42
(d) Student aide	<u>1</u>	<u>1</u>
Total 1 and 2 above	1051	886

FIELD SERVICES SUMMARY (Continued)

March 1982

Plant Modifications

The below listed modifications were completed during the month of March.

NON-SAFETY-RELATED

<u>Package Number</u>	<u>Description</u>
0-77-38 P0303	(Work Plan 8352) -- Provided a temporary road-way to the condenser tube pullout area. Placed grating on floor of condenser tube pullout area for stacking of radwaste drums. Provided foundations, piping, and conduit for relocating existing propane tanks to an isolated area within the switchyard. The ECN was not completed.
0-77-38 P0303	(Work Plan 8358 R1) -- Relocated existing propane storage tanks including existing piping and controls.
3-47-62 P0374	(Work Plan 9909) -- Modified and repositioned the differential expansion detector in the main turbine front standard to achieve acceptable DXD emergency governor clearances. The ECN was completed for unit 3.
1-47-79 DCR 2208	(Work Plan 6425) -- Removed existing silver grounding shoes and their holders on unit 1 main turbine, front standard. Installed cover plates over the holes where the grounding shoes were removed. The DCR was completed for unit 1.

SAFETY-RELATED

2-3-82 P0445	(Work Plan 6720) -- Built and placed protective cages on panels 25-51B and 25-52B to protect LITS 3-52 and 3-62. The barriers did not affect the function and/or availability of the equipment or any safety-related equipment. The consequences of an accident or malfunction of safety-related equipment previously evaluated in the FSAR was not increased. The ECN was completed on unit 2.
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FIELD SERVICES SUMMARY (Continued)

March 1982

Plant Modifications (Continued)

SAFETY-RELATED

<u>Package Number</u>	<u>Description</u>
3-433-68 P0361	(Work Plan 7909) -- Fabricated and installed the RCIC turbine exhaust support at catwalk knee-brace RG No. 6. A very small portion of the work was covered by the ECN was completed.
3-433-68 P0362	(Work Plan 7893) -- Prefabricated 11 3/4-inch elbow reinforcing rings and installed inside the unit 3 torus. Only a small portion of the work covered by the ECN was completed.
3-257-13 P0191	(Work Plan 7982) -- Modified computer software to monitor analog input voltages for each reactor protection system bus and performed post-modification test. The recorder was seismically qualified and supported so it does not adversely affect safety-related equipment. The ECN was completed for unit 3.
3-47-52 P0275	(Work Plan 7976) -- Mounted potential transformer in 4-kV unit board 3C; performed internal wiring and spared out cables. A very small portion of the work covered by the ECN was accomplished on this work plan.
2-1-106 3-1-96	(Work Plan 6739) (Work Plan 7961) -- Work plans written and approved for installation of helicoils in MSIVs for units 2 and 3. MMI-17 was revised to incorporate the changes and the work will be done on an as-needed basis per the MMI. As the modifications are performed, the replacement of the MSIV bonnet stud threads in the valve body will not affect the valve's ability to perform its safety-related functions. The ECN was completed for units 2 and 3.

FIELD SERVICES SUMMARY (Continued)

March 1982

Plant Modifications (Continued)

SAFETY-RELATED

<u>Package Number</u>	<u>Description</u>
3-47-44 P0214	(Work Plan 7920) -- Installed hoses from air compressor, cooling plant and control cabinets to the generator breakers in unit 3. A small portion of the work covered by the ECN was completed.
3-433-68 P0360 P0362	(Work Plan 7896) -- Prefabricated internal ring girder reinforcement at the Power Service Shops for the unit 3 torus modification. A very small portion of the work covered by the ECN was accomplished.
1-433-19 P0093	(Work Plan 10146) -- Changed torus and drywell differential pressure and level switch set-points for LS-64-54A and B; PDS-64-137A, 137B, and 137C; and PDS-64-138A, B, and C. A small portion of the work covered by the ECN was completed.
2-68-67 P0224	(Work Plan 9512) -- Added various test connections to the recirculation pump seal water lines between valves 68-507 and 508; 68-508 and 550; 68-552 and 523; and 68-523 and 555 in the unit 2 drywell. The modification was required to assure compliance with NRC requirements. Normal operation of the system was not affected. The test connections meet the same requirements with regard to piping class and seismic status as the existing gland seal system. The ECN was completed for unit 2.
1-79-57 DCR CC19	(Work Plan 10114) -- Replaced existing fuel assemblies with P8X8R and four lead test assemblies. The lead test assemblies were installed to test and utilize new fuel design developed to increase cold shutdown margin. The only change to the LTAs relative to the standard reload bundles is the

FIELD SERVICES SUMMARY (Continued)

March 1982

Plant Modifications (Continued)

SAFETY-RELATED

<u>Package Number</u>	<u>Description</u>
1-79-57 (Continued) DCR CC19	addition of the short segment of higher gadolinia concentration. This addition will not change the thermal-mechanical characteristics of the fuel rods or fuel assemblies beyond what has already been analyzed and will have no significant impact on power operations.
0-236-2 P0502	(Work Plan 8516) -- Prefabricated and installed above-ground piping for 1C transformer fire protection. A small portion of the work covered by the ECN was accomplished on this work plan.
3-252-4 P0201	(Work Plan 9921) -- Changed normal feeder for board 9-9, panel 5, from the plant nonpreferred to the unit-preferred bus. The modification will assure a reliable source of power and one which provides proper circuit breaker coordination. The margin of safety was not reduced. The ECN was completed for unit 3.
3-47-52 P0275	(Work Plan 7877) -- Installed conduit and grounding for unit station-service transformer 3B. A very small portion of the work covered by the ECN was accomplished.
3-433-54 P0093	(Work Plan 7889) -- Installed temporary internal ventilation for the unit 3 torus modification. Removed all temporary material installed per this work plan prior to closing work plan for QA records. The ECN was not completed.